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O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

**REPITISION TEST TOPSHIRUVCHILAR UCHUN**

## **SAVOLLAR KITOBI**

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### **ABITURIYENT DIQQATIGA!**

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### **FANLAR:**

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000031**

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### MATEMATIKA (INFORMATIKA BILAN)

- $A(2; 1)$  nuqtadan o'tib, koordinata o'qlariga urinuvchi aylana tenglamasini tuzing.

A)  $(x - 3)^2 + (y - 3)^2 = 9$   
 B)  $(x - 1)^2 + (y - 5)^2 = 16$   
 C)  $(x - 2)^2 + (y - 4)^2 = 9$   
 D)  $(x - 5)^2 + (y - 5)^2 = 25$  yoki  $(x - 1)^2 + (y - 1)^2 = 1$
- $\frac{bc - a^2}{ab} - \frac{b^2 - ac}{bc} + \frac{ab - c^2}{ac}$  ifodani kasrga aylantiring.

A) -1 B) 0 C)  $abc$  D)  $\frac{a^2 - b^2 - c^2}{abc}$
- Teploxod ikki pristan oraligidagi masofani daryo oqimi bo'yicha 7 soat, oqimga qarshi 9 soatda o'tadi. Agar oqimning tezligi 2 km/soat bo'lsa, pristanlar orasidagi masofani (km) aniqlang.

A) 120 B) 126 C) 128 D) 130
- $\vec{a}(1; -1)$  va  $\vec{b}(-2; m)$  vektorlar kollinear.  $m$  ning nimaga tengligini toping.

A) 2 B) -3 C) -2 D) 1
- $||x - 4| - 7| > 5$  tengsizlikning eng kichik musbat va eng katta manfiy butun yechimlari ayirmasini toping.

A) -6 B) 6 C) 12 D) -12
- $\sqrt[3]{0,5} + \sqrt[3]{4} - \sqrt[3]{13,5}$  ni hisoblang.

A)  $-\sqrt[3]{2}$  B)  $-\sqrt[3]{5}$  C) 0 D)  $\sqrt[3]{5}$
- Balandligi asosining diametriga teng silindrning yon sirti  $16\pi$  ga teng. Silindr asosining diametrini toping.

A) 4 B) 2 C) 8 D) 1
- Tekislikdan  $h$  uzoqlikda joylashgan nuqtadan tekislikka o'tkazilgan va tekislik bilan  $30^\circ$  li burchak hosil qiladigan og'maning uzunligini toping.

A)  $\sqrt{2}h$  B)  $2h$  C)  $1,5h$  D)  $\sqrt{3}h$
- $1 - \frac{2}{5 - \frac{6}{5 - \frac{x}{x}}}$  ifoda  $x$  ning nechta qiymatida ma'noga ega emas?

A) 3 B) 4 C) 1 D) 2
- Aylananing uzunligi shu aylananing  $40^\circ$  li yoyi uzunligidan necha foiz ko'p?

A) 700 B) 800 C) 900 D) 600
- $\frac{a^3 - 2a^2 + 5a + 26}{a^3 - 5a^2 + 17a - 13}$  kasrni qisqartiring.

A)  $\frac{a + 2}{a - 1}$  B)  $\frac{1 - a}{a + 2}$  C)  $\frac{a + 2}{a - 2}$  D)  $\frac{a - 2}{a + 2}$
- $n \in N$  va  $\frac{1}{2} + \frac{1}{3} + \frac{1}{7} + \frac{1}{n}$  yig'indi butun son bo'lsa, quyidagilardan qaysi biri noto'g'ri?

A)  $n$  soni 3 ga bo'linadi B)  $n > 84$   
 C)  $n$  soni 6 ga bo'linadi  
 D)  $n$  soni 2 ga bo'linadi
- $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \dots \cdot \sin 45^\circ}{\cos 46^\circ \cdot \cos 47^\circ \cdot \dots \cdot \cos 89^\circ}$  ni hisoblang.

A)  $\frac{\sqrt{3}}{2}$  B) 1 C)  $\frac{\sqrt{2}}{2}$  D)  $\frac{1}{2}$
- $y = 2\cos^2 \frac{x}{2} - \operatorname{tg} x \cdot \operatorname{ctg} x$  funksiyaning qiymatlari to'plamini toping.

A)  $[1; 3]$  B)  $[0; 3]$  C)  $(1; 2) \cup (2; 3)$   
 D)  $(-1; 0) \cup (0; 1)$
- $f(x) = \frac{1}{2}\sin 2x + x$ ,  $f'(x) = ?$

A)  $\cos 2x + 1$  B)  $\cos 2x$  C)  $2\cos 2x + 1$   
 D)  $\frac{1}{2}\cos x + 1$
- $x^2 + 2\sqrt{x^2 + 6x + 13} = -6x - 5$  tenglama ildizlarining yig'indisini toping.

A) -13 B) -6 C) -2 D) -3
- $x, y, z$  - butun sonlar bo'lib,  $\begin{cases} \frac{xy}{y-x} = -\frac{15}{2} \\ \frac{yz}{z-y} = \frac{21}{4} \\ \frac{xz}{z-x} = \frac{35}{2} \end{cases}$  bo'lsa,  $x + y - z = ?$

A) 1 B) 15 C) 9 D) 4
- Oltiburchakli muntazam prizma eng katta diagonal kesimining yuzi  $Q$ , prizmaning qarama-qarshi yon yoqlari orasidagi masofa  $b$  bo'lsa, prizmaning hajmini hisoblang.

A)  $\frac{3bQ}{4}$  B)  $\frac{4bQ}{3}$  C)  $\frac{3bQ}{2}$  D)  $\frac{bQ}{2}$

19.  $f(x) = \cos x + e^x$ ,  $F(x) = ?$   
 A)  $\sin x + e^x + c$  B)  $-\cos x + e^x + c$   
 C)  $\sin x - \frac{1}{x}e^x + c$  D)  $-\sin x + e^x + c$
20. Avtomashina Toshkentdan Samarqandga tomon yo'lga chiqdi. Yo'lning  $\frac{2}{5}$  qismini rejadagi tezlikda o'tgach, tezligini 20% ga oshirdi va Samarqandga mo'ljaldagidan yarim soat oldin keldi. Avtomashina ikki shahar orasidagi masofani necha soatda o'tgan?  
 A) 4 B) 3 C) 4,5 D) 2,5
21. To'g'ri to'rtburchakning diagonali 17 sm, tomonlaridan biri esa 8 sm. To'g'ri to'rtburchakning yuzini ( $\text{sm}^2$ ) toping.  
 A) 140 B) 80 C) 160 D) 120
22. Agar  $ABC$  o'tkirburchakli uchburchakda  $AB=0,7$ ;  $BC=0,9$ ;  $\sin B=0,8$  bo'lsa, uchinchi tomonning kvadratini toping.  
 A) 0,543 B) 0,541 C) 0,544 D) 0,519
23. Muntazam ko'pburchakning tomoni  $a$  ga, unga tashqi chizilgan aylana radiusi esa  $R$  ga teng bo'lsa, ichki chizilgan aylana radiusini toping.  
 A)  $\frac{2aR}{\sqrt{4R^2 + a^2}}$   
 B)  $\sqrt{R^2 + \frac{a^2}{4}}$   
 C)  $\frac{2aR}{\sqrt{4R^2 - a^2}}$   
 D)  $\sqrt{R^2 - \frac{a^2}{4}}$
24.  $((-15)^{-3})^{-8} : ((-15)^{-13})^{-2} - \left(-\frac{1}{15}\right)^2$  ni hisoblang.  
 A)  $\frac{2}{225}$  B)  $-\frac{1}{225}$  C) 50 D) 0
25. To'g'ri to'rtburchakning bo'yi kvadratning tomonidan 8 m uzun, eni esa shu kvadrat tomonidan 4 m qisqa. Kvadrat tomonini  $x$  bilan belgilab, to'g'ri to'rtburchak perimetri va yuzi uchun ifoda tuzing.  
 A)  $P = 4x + 4$ ;  $S = x^2 + 4x - 18$   
 B)  $P = 4x + 2$ ;  $S = (x + 8)(x - 4)$   
 C)  $P = 4x + 8$ ;  $S = 4(x + 8)$   
 D)  $P = 4(x + 2)$ ;  $S = (x + 8)(x - 4)$
26.  $\begin{cases} 2^{\frac{x-y}{2}} + 2^{\frac{y-x}{2}} = 2,5 \\ \lg(2x - y) + 1 = \lg(y + 2x) + \lg 6 \end{cases}$  tenglamalar sistemasini yeching.  
 A) (1; -1) va (1; 0)  
 B) (4; 2)  
 C)  $\left(\frac{2}{3}; -\frac{2}{3}\right)$  va  $\left(\frac{4}{3}; -\frac{4}{3}\right)$   
 D)  $\left(\frac{1}{2}; -\frac{1}{2}\right)$  va  $\left(\frac{1}{4}; -\frac{1}{4}\right)$
27.  $\frac{1}{\log_2\left(\frac{1}{6}\right)} - \frac{1}{\log_3\left(\frac{1}{6}\right)} - \frac{1}{\log_4\left(\frac{1}{6}\right)}$  ni hisoblang.  
 A) 1 B) 6 C) 3 D) 2
28. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $4\sqrt{2}$  bo'lsa, aylanaga ichki chizilgan kvadratning yuzini hisoblang.  
 A) 48 B) 64 C) 52 D) 50
29.  $2$ ;  $b_2$  va  $b_3$  sonlari o'suvchi geometrik progressiyaning dastlabki uchta hadidan iborat. Agar bu progressiyaning ikkinchi hadiga 25 qo'shilsa, hosil bo'lgan sonlar arifmetik progressiyaning dastlabki uchta hadini tashkil etadi.  $b_2$  toping.  
 A) 12 B) 8 C) 6 D) 10
30.  $XOY$  uchburchakda  $\angle XOY = 90^\circ$ .  $M$  va  $N$  nuqtalar mos ravishda  $OX$  va  $OY$  tomonlarning o'rtalari. Agar  $XN=19$  va  $YM=22$  bo'lsa,  $XY$  ni toping.  
 A) 28 B) 26 C) 14 D) 13
31. 3 terabayt axborotni baytlarda ifodalang.  
 A)  $3^{40}$  bayt B)  $3 \cdot 2^{40}$  bayt C)  $6^{40}$  bayt  
 D)  $2^{40}$  bayt
32. Amal va o'tkazish natijasini aniqlang.  
 $63_8 + 21_8 \rightarrow x_2$   
 A)  $1000100_2$  B)  $1010100_2$  C)  $1011000_2$   
 D)  $1011001_2$
33. Nomi S harfidan boshlanuvchi va faqat to'rtta belgidan iborat ixtiyoriy kengaytmali fayllar qanday belgilanadi?  
 A)  $S***$  B)  $S????$  C)  $S????*$  D)  $S**$

34. Ma'lumotlar ombori undagi axborot shakliga ko'ra qanday turlarga ajratiladi?  
A) *hujjatli va faktografik*  
B) *relyatsion va to'rtli* C) *matnli va grafik*  
D) *raqamli va analog*
35. Axborot uzatish jarayonida quyidagi qismlardan qaysi biri bo'lishi shart?  
1) Axborot qabul qiluvchi 2) Axborot manbai  
3) Axborot uzatish vositasi  
A) 1, 2, 3 B) 1 C) 1, 2 D) 1, 3
36. Random (x) funksiyasining vazifasini aniqlang.  
A) *Parametrlil takrorlash funksiyasi*  
B) *[0, x) oraliqdagi tasodifiy sonni aniqlash funksiyasi*  
C) *[0, 1) oraliqdagi tasodifiy sonni aniqlash funksiyasi*  
D) *Tasodifiy harflar generatori*
6. Tok manbaidagi mis kuporosining eritmasi orqali 500 C miqdoriga zaryadli ionlar o'tganda elektrodlardagi kuchlanish 2 V bo'lsa, tok qancha ish (J) bajargan?  
A) 200 B) 2000 C) 1000 D) 500
7. Qiyaligi 30° bo'lgan qiya tekislik bo'ylab 2 m/s<sup>2</sup> tezlanish bilan pastga harakatlanayotgan 5 kg massali jismni qiya tekislik bo'ylab yuqoriga tekis tortib chiqarish uchun unga qanday kuch (N) quyish kerak?  
A) 25 B) 35 C) 40 D) 50
8. Natriy sariq nurlarining havodagi to'liq uzunligi 589 μm. Shu nurning shishadagi to'liq uzunligini (m) toping. Shishaning sindirish ko'rsatkichi 1,56 ga teng.  
A) 3,9·10<sup>-7</sup> B) 5·10<sup>-7</sup> C) 3,78·10<sup>-7</sup>  
D) 34·10<sup>-7</sup>
9. Shishadan fokus masofasi 20 sm bo'lgan qavariq linza tayyorlandi. Linzaning egrilik radiuslari teng. Shishaning nur sindirish ko'rsatkichi 1,5 ga teng bo'lsa egrilik radiusini (sm) toping.  
A) 20 B) 24 C) 25 D) 22
10. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 10- sekundda bosib o'tgan yo'li 5- sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
A) 19/9 B) 19/5 C) 19/7 D) 4
11. Massasi 1 kg jism qanday balandlikdan (m) tushayotganda 4-sekund oxirida potentsial va kinetik energiyalari E<sub>p4</sub>=450 J; E<sub>k4</sub>=800 J ga teng bo'ladi; g=10 m/s<sup>2</sup>.  
A) 12,5 B) 125 C) 125 000 D) 1250
12. Shaxta tubida barometr 82 sm.sim.ust. ni, yer sirtida 78 sm.sim.ust. ni ko'rsatayotgan bo'lsa, shaxtaning chuqurligini (m) aniqlang.  
A) 48 B) 40 C) 480 D) 4,8
13. Induksiya vektorining moduli 0,8 T, yo'nalishi gorizontal bo'lgan bir jinsli magnit maydonida uzunligi 25 sm, massasi 16 g bo'lgan gorizontal sim muallaq turishi uchun simning ko'ndalang kesim yuzasi orqali har sekundda nechta elektron oqib o'tishi kerak? g=10 m/s<sup>2</sup>.  
A) 2,5·10<sup>17</sup> B) 1,2·10<sup>17</sup> C) 2,5·10<sup>18</sup>  
D) 5·10<sup>18</sup>

### FIZIKA

1. Idishdagi gazning hajmi o'zgarimas temperaturada 5% ga kamayishi uchun gaz bosimini necha foizga orttirish kerak?  
A) 10 B) 5,3 C) 7 D) 4,9
2. Bir atomli 1 mol gaz izobarik kengayganda 160 J ish bajaradi va temperaturasi 10°C ga ortadi. Gazga qancha issiqlik miqdori (J) berilgan?  
A) 124 B) 84 C) 284 D) 160
3. Elementlari parallel ulangan zanjirning o'zgaruvchan tokka nisbatan qarshiligi  $\left(\frac{1}{R^2} + \left(\omega C - \frac{1}{\omega L}\right)^2\right)^{-1/2}$  ga teng. Rezonans paytida bu qarshilik qanday bo'ladi?  
A) 0  
B) R  
C) ∞  
D)  $\sqrt{R^2 + (\omega C + 1/\omega L)^2}$
4. Chastotasi 5 MGs bo'lgan to'liqin suvga tushganida qanday chastotada (MGs) bo'ladi?  
A) 3 B) 5 C) 6 D) 4
5. Solenoiddagi tok kuchi 1,5 A bo'lganda, undan 150 mWb magnit oqimi o'tsa, uning induktivligini (Hz) aniqlang.  
A) 1 B) 0,1 C) 0,5 D) 0,3

14. Qarshiligi  $5 \Omega$  bo'lgan o'tkazgichning ko'ndalang kesmidan  $1,5$  min davomida  $45 C$  zaryad miqdori o'tdi. Shu o'tkazgichning uchlaridagi kuchlanishni (V) toping.  
A) 2 B) 2,5 C) 5 D) 1
15. Prujinaga birinchi jism osilganda prujina  $2$  sm ga cho'zildi, ikkinchi jism osilganda yesa  $3$  sm ga cho'zildi. Ikkala jism birgalikda osilganda prujina qancha (sm) cho'ziladi?  
A) 1,2 B) 2,0 C) 2,5 D) 5,0
16.  $100$  mol simob qancha hajmni (l) egallaydi? ( $M = 200 \frac{g}{mol}$ ,  $\rho = 13600 \frac{kg}{m^3}$ )  
A) 2,23 B) 1,52 C) 1,47 D) 1,66
17. Samolyotning havo reaktiv dvigatelidan har sekundda  $25$  kg havo va yoqilg'i o'tadi. Kirishdagi tezlik  $250$  m/s, chiqishdagi tezlik esa  $500$  m/s bo'lsa, reaktiv kuchini (kN) toping.  
A) 63 B) 630 C) 6,3 D) 0,63
18.  $q=1,7$  nC dan bo'lgan 3 ta bir xil zaryad tomonlari  $a=3$  sm dan bo'lgan uchburchakning uchlariga joylashtirildi. Bu zaryadlarning har qaysisiga qanday kuch ta'sir qiladi?  
A) 50 N B) 50 mN C) 60  $\mu$ N D) 50  $\mu$ N
19. Uzoq masofaga uchayotgan kosmik kemaning tezligi harakat boshidan 1 soat o'tgach  $1000$  km/s ga yetdi. Kemaning tezlanishini ( $m/s^2$ ) toping.  
A) 100 B) 0,278 C) 1000 D) 278
20.  $240$  g kislorodni  $100$  K ga sovutilganda uning ichki energiyasi qanchaga (J) o'zgaradi?  
A)  $155,8 \cdot 10^3$  B)  $15,58 \cdot 10^3$  C)  $1,558 \cdot 10^3$   
D)  $1558 \cdot 10^3$
21. Prujinaning bikrligi  $40$  N/m ga teng bo'lsa, unga maxkamlagan  $100$  g massali jismning tebranish chastotasi (Gs) qanchaga teng bo'ladi?  
A) 30 B) 4 C) 0,3 D) 3
22. Quyidagi yadro reaksiyasida qanday  $X$  zarra hosil bo'lgan?  
 ${}^{14}_7N + {}^4_2He = X + {}^{17}_8O$   
A) geliy yadrosi B) neytron C) proton  
D) vodorod yadrosi
23. Jism radiusi  $2$  m bo'lgan aylana bo'ylab  $180$  rad/min burchak tezlik bilan harakatlanmoqda. Agar uning massasi  $6$  kg bo'lsa, unga ta'sir qilayotgan markazga intilma kuchni (N) aniqlang.  
A) 36 B) 64 C) 27 D) 108
24. Chaqmoq chaqgandan so'ng  $6$  s o'tgach momoqaldiroq gumburladi, yashin razradi kuzatuvchidan qanday masofada (km) bo'lgan?  
A) 45 B) 56 C) 2 D) 256
25.  $\alpha$ -zarraning tezligi  $0$  dan  $0,9c$  gacha orttirilganda uning massasi qanchaga ortadi (m.a.b.)? Tinchlikdagi massasi  $m_0=4$  m.a.b. deb oling.  
A) 6 B) 5,5 C) 4,8 D) 5,2
26. Qiya tekislikda yukni balandlikka ko'tarish uchun  $20$  J ish bajarildi. Bunda FIK 80% bo'lganda foydali ishni (J) toping.  
A) 20 B) 18 C) 16 D) 15
27. Qarshiliklari  $5$  k $\Omega$ ,  $20$  k $\Omega$  va  $4$  k $\Omega$  ga teng bo'lgan rezistorlar o'zaro parallel ulanib, so'ngra elektr tarmog'iga ulandi. Agar ikkinchi rezistordagi tok kuchi  $4$  mA ga teng bo'lgan bo'lsa, tarmoqdagi tok kuchini (mA) toping.  
A) 12 B) 40 C) 36 D) 24
28. Yassi kondensatorning plastinkalariga yuqori chastotali o'zgaruvchan kuchlanish berilganda plastinkalar orasidan uchib o'tayotgan elektron qanday traektoriya chizadi?  
A) parabola B) to'g'ri chiziq C) vintsimon  
D) sinusoida
29. Qanday sharoitda sochuvchi linzaning optik kuchi musbat bo'la oladi?  $n_1$  - atrof muhitning optik zichligi,  $n_2$  - linza yasalgan moddaning optik zichligi.  
A)  $n_1 = n_2$   
B)  $n_1 > n_2$   
C) sochuvchi linzaning optik zichligi musbat bo'la olmaydi  
D)  $n_1 < n_2$
30. Atrof-muhit bilan issiqlik miqdori almashmasdan ro'y beradigan jarayonga qanday jarayon deyiladi?  
A) izoxorik B) izobarik C) izotermik  
D) adiabatik

31. O'zgarimas tok manbaiga avval  $9 \Omega$  qarshilik so'ngra  $4 \Omega$  qarshilik ulandi. Har ikkala holda birday vaqt ichida qarshiliklarda bir xil miqdorda issiqlik ajraladi. Manbaning ichki qarshiligini ( $\Omega$ ) aniqlang.  
A) 36 B) 3 C)  $\sqrt{6}$  D) 6
32. Tutash idishga simob ( $\rho_{sm}=13600 \text{ kg/m}^3$ ) quyildi, uning ustidan bitta idishga 20 sm balandlikda kerosin ( $\rho_k=800 \text{ kg/m}^3$ ) quyildi. Ikkinchisiga 48 sm balandlikda moy ( $\rho_m=900 \text{ kg/m}^3$ ) quyildi. Ikkala idishdagi simob sathlarining farqini (sm) aniqlang.  
A) 4,4 B) 2,0 C) 1,0 D) 4,0
33. Elektr sig'implari  $C_1 = C_2 = C_3 = 10 \mu\text{F}$  dan bo'lgan kondensatorlardan ikkitasi o'zaro paralell, uchinchi esa ularga ketma-ket ulangan kondensatorlar bateriyasi o'zgarimas kuchlanish manбайдan zaryadlangan. Birinchi kondensator olgan elektr zaryadi 5 nC ga teng bo'lsa, uchinchi kondensatorning elektr zaryadini (nC) toping.  
A) 5 B) 15 C) 10 D) 7,5
34. O'quvchi 50 kg massali yukni gorizontga nisbatan  $30^\circ$  burchak ostida yo'nalgan  $F$  kuch bilan tortib ketmoqda. Agar harakat tekis va yuk bilan sirt orasidagi ishqalanish koeffitsienti 0,26 ga teng bo'lsa,  $F$  ni (N) toping.  
 $\cos 30^\circ = 0,87$ ,  $\cos 60^\circ = 0,5$   
A) 433 B) 130 C) 500 D) 300
35. Elektr choynagi 220 V kuchlanishga ulangan holda 3,2 A tok iste'mol qilib 1 l suvni 12 minutda qaynatdi. Suvning boshlang'ich harorati  $20^\circ\text{C}$  bo'lsa, FIKni (%) toping.  
 $c_{suv} = 4200 \frac{\text{J}}{\text{kg} \cdot ^\circ\text{C}}$   
A) 84 B) 71 C) 98 D) 66
36. Hajmi  $50 \text{ m}^3$  bo'lgan xonadagi havoning  $0^\circ\text{C}$  va  $40^\circ\text{C}$  dagi massalari (kg) farqini toping. (Havo bosimi o'zgarimas va  $0^\circ\text{C}$  dagi zichligi  $1,29 \text{ kg/m}^3$ ).  
A) 8,24 B) 7,97 C) 8,0 D) 8,5
1. Choose the answer which correctly completes the sentence.  
When Lyndon Johnson became president in 1963, he already ... in politics for 32 years.  
A) *had served* B) *was serving* C) *served*  
D) *has served*
2. Choose the answer which correctly completes the sentence.  
You should contact ... Mr. Abdullayev and clear up all the details.  
A) *with* B) *to* C) *for* D) -
3. Choose the answer which correctly completes the sentence.  
"Arm" and "dog" are ... words. Each word has three letters said Tony.  
A) *a three letter* B) *three letter*  
C) *threes letters* D) *three letters*
4. Choose the answer which correctly completes the sentence.  
"Why is the bus late?"  
Can you tell me why ... late.  
A) *the bus was* B) *was the bus*  
C) *the bus is* D) *is the bus*
5. Choose the answer which correctly completes the sentence.  
There are 9 planets in our solar system, and ... Pluto is the farthest.  
A) *an* B) *the* C) - D) *a*
6. Choose the answer which correctly completes the sentence.  
If anyone should call, ... a message, please.  
A) *will take* B) *take* C) *takes* D) *took*
7. Choose the answer which correctly completes the sentence.  
We would rather ... out late tonight.  
A) *not to stay* B) *staying* C) *not stay*  
D) *don't stay*
8. Choose the answer which correctly completes the sentence.  
When did you ... the books back?  
A) *must give* B) *can give* C) *have to give*  
D) *had to give*
9. Choose the answer which correctly completes the sentence.  
Neither David nor Jane ... to University.  
A) *goes* B) *are going* C) *going* D) *go*

10. Choose the answer which correctly complete the sentence.  
Our car stopped on the halfway to the city. We couldn't go ... because we had no petrol left.  
A) *far* B) *further* C) *farther* D) *farthest*
11. Choose the answer which correctly completes the sentence.  
The hotel owner informed us that he ... the police already.  
A) *has called* B) *is going to call*  
C) *had called* D) *was going to call*
12. Choose the answer which correctly completes the sentence.  
Technically, glass is a mineral and ... .  
A) *water is so* B) *so is water* C) *is water so*  
D) *so water is*
13. Choose the answer which correctly completes the sentence.  
She never allowed herself to get depressed ... all her problems.  
A) *whereas* B) *despite* C) *as for*  
D) *nevertheless*
14. Choose the answer which correctly completes the sentence.  
The cause of car accident ... at present.  
A) *have been investigated*  
B) *is being investigated* C) *is investigated*  
D) *are being investigated*
15. Choose the answer which correctly completes the sentence.  
Whose spectacles are these? - ... are on the table, and these are my spectacles.  
A) *Their* B) *Our* C) *Yours* D) *Your*
16. Choose the answer which correctly completes the sentence.  
He was very tired. Otherwise, he ... to the party with us last night.  
A) *would go* B) *would have gone*  
C) *would be going* D) *went*
17. Choose the answer which correctly complete the sentence.  
Neil Armstrong was the first man on ... Moon.  
A) *a* B) *the* C) *an* D) *-*
18. Choose the answer which correctly completes the sentence.  
Water that has had the minerals ... is called "soft" water.  
A) *removed* B) *removing* C) *to remove*  
D) *removes*
19. Change the sentence into the Passive Voice.  
They didn't ask me my name.  
A) *I didn't ask my name.*  
B) *My name wasn't asked.*  
C) *I wasn't asked name.*  
D) *I wasn't asked my name.*
20. Choose the answer which correctly completes the sentence.  
I haven't got enough cash. Can I pay ... cheque?  
A) *in* B) *with* C) *by* D) *from*
21. Choose the answer which correctly completes the sentence.  
People use the ski slopes at their own risk, and we cannot be held responsible for any ... injuries.  
A) *being result* B) *result* C) *resulting*  
D) *results*
22. Choose the answer which correctly completes the sentence.  
The last ice age ... have ended over 10,000 years ago, but from a historical point of view it was a relatively recent event.  
A) *could* B) *was to* C) *may* D) *should*

23. Choose the answer which correctly completes the sentence.

I saw you in the park yesterday. You ... with your friend Tom.

- A) *sit* B) *were sitting* C) *sat* D) *had sat*

Read the text. Then choose the correct answer to question 24-26.

Sleep researchers have found that people can make themselves wake up at a given time simply by deciding to do so before they go to sleep. Scientists took two groups of volunteers and, at nightfall, told one group that they would be woken at 6 a.m. and the other that they would be woken at 9 a.m. The sleepers' levels of the hormone adrenocorticotropin, which is known to cause spontaneous awakening, were then measured. In each group, there was a rise in the levels of the hormone one hour before the volunteers expected to get up. The three -hour difference between the rise in hormones in the two groups suggests that the body can be programmed to wake up on command.

24. The people studied by the researchers ...
- A) *were having difficulty getting up early.*  
 B) *participated in the experiment at their own will.*  
 C) *were unable to wake up by other means.*  
 D) *suffered from insomnia.*
25. It seems that adrenocorticotropin ...
- A) *is responsible for causing sleeplessness in a number of people*  
 B) *is produced by the body some time before a person wakes up*  
 C) *is used by doctors for people who have difficulty getting up*  
 D) *exists in higher levels in people who wake up very early*

26. The experiment related in the passage has indicated that ...

- A) *hormones are more effective than outside stimuli for waking people.*  
 B) *the hormones that wake people up have a three -hour long cycle.*  
 C) *people who wake up at 6 a.m. have more hormones than 9 a.m. risers.*  
 D) *our bodies are capable of being conditioned to wake up at a suggested hour.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Andrew Murphy former (27)... director of Delco Electronics, has pleaded "Not Guilty" to charges that he stole £ 5 million from the company. He claims not to know where the money went. He has suggested (28)... an accountant took the money. Investigators consider it unlikely that anyone else in the company could have committed the crime.

- 27.
- A) *managed* B) *managing* C) *to manage*  
 D) *manage*
- 28.
- A) *that* B) *who* C) *where* D) *what*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

In 900AD the cities of the Mayan civilization were still prosperous, but a hundred years later they (29)... . A number of theories have been put (30)... to explain this. One theory is that the Mayan ruling class died out because rulers did not work and so became (31)..., and there was nobody to tell the formers what to do.

- 29.
- A) *had been abandoned* B) *abandoned*  
 C) *have been abandoned* D) *had abandoned*
- 30.
- A) *forward* B) *down* C) *through* D) *at*



31.

- A) *unhealthy*    B) *health*    C) *healthy*  
D) *unhealth*

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?

- A) *The danger of two breeds of dolphins disappearing.*  
B) *The breeding of small river dolphins.*  
C) *The danger of hunting for the Brazilian population.*  
D) *Hydro-electric dam projects on the Yangtze river.*

33. What does the number 10 in the text refer to?

- A) *Groups of biologist who are trying to repopulate dolphins.*  
B) *The percentage of living Yangtze river dolphins.*  
C) *Governmental organizations which fight the pollution of rivers.*  
D) *The percentage of Amazonian dolphins which die out every year.*

Read the text. Then choose the correct answer to question 34-36.

The Great Pyramid of Giza, a monument of wisdom and prophecy, was built as a tomb for Pharaoh Cheops in 2720 B.C. Despite its antiquity, certain aspects of its construction make it one of the truly great wonders of the world. The four sides of the pyramid are aligned almost exactly on true north, south, east, and west - an incredible engineering feat. The ancient Egyptians were sun worshippers and great astronomers, so computations for the Great Pyramid were based on astronomical observations.

Explorations and detailed examinations of the base of the structure reveal many intersecting lines. Further scientific study indicates that these represent a type of time line of events past, present, and future. Many of the events have been interpreted and found to coincide with known facts of the past.

Others are prophesied for future generations and presently are under investigation.

Was this superstructure made by ordinary beings, or one built by a race superior to any known today?

34. What did the ancient Egyptians base on their calculations?

- A) *observation of the celestial bodies*  
B) *advanced technology*  
C) *knowledge of the earth's surface*  
D) *advanced tools of measurement*

35. Why was the Great Pyramid constructed?

- A) *as a tomb for the pharaoh*  
B) *as a solar observatory*  
C) *as a religious temple*  
D) *as an engineering feat*

36. Why is the Great Pyramid of Giza considered one of the Seven Wonders of the World?

- A) *it is perfectly aligned to the four cardinal points of the compass and contains many prophesies*
- B) *it is very old*
- C) *it was built by a super race*
- D) *it was selected as the tomb of Pharaoh Cheops*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000032**

Toshkent – 2014

### MATEMATIKA (INFORMATIKA BILAN)

1.  $\frac{x^{\frac{1}{2}} + 1}{x + x^{\frac{1}{2}} + 1} : \frac{1}{x^{1,5} - 1}$  ifodani soddalashtiring.

- A)  $x + 1$  B)  $1$  C)  $x - 1$  D)  $1 - x$

2.  $\frac{(2p - q)^2 + 2q^2 - 3pq}{2p^{-1} + q^2} : \frac{4p^2 - 3pq}{2 + pq^2}$  ifodani soddalashtiring va uning son qiymatini toping.  
 $p=0,78, q=7/25$

- A)  $0,25$  B)  $1$  C)  $-1$  D)  $0,5$

3. Radiusi  $R$  ga teng bo'lgan doiraning markazidan bir tomonda ikkita bir-biriga parallel vatar o'tkazildi. Bunda ulardan biri  $120^\circ$  li, ikkinchisi  $60^\circ$  li yoylarni tortib tursa, vatarlar orasida joylashgan maydon yuzini toping.

- A)  $\frac{5\pi R^2}{8}$  B)  $\frac{\pi R^2}{3}$  C)  $\frac{\pi R^2}{6}$  D)  $\frac{\pi R^2}{4}$

4. Agar to'g'ri to'rtburchak kichik tomoni  $a = 10\sqrt{2}$  bo'lsa, uning ixtiyoriy burchagidan katta tomonga o'tgan bissektrisasi uzunligi qancha?

- A)  $20$  B)  $15$  C)  $30$  D)  $10$

5. Talaba besh yilda 31 ta imtihon topshirdi. U har keyingi yilda oldingi yildagiga qaraganda ko'p imtihon topshirgan. Beshinchi kursda birinchi kursdagidan 3 marta ko'p imtihon topshirgan bo'lsa, to'rtinchi kursda nechta imtihon topshirgan?

- A)  $6$  B)  $7$  C)  $8$  D)  $9$

6. Asosining tomonlari  $12; 9$  va  $15$  hamda asosidagi barcha ikki yoqli burchaklari  $60^\circ$  dan iborat bo'lgan uchburchakli piramidaning hajmini toping.

- A)  $54\sqrt{3}$  B)  $27\sqrt{3}$  C)  $162\sqrt{3}$  D)  $108\sqrt{3}$

7.  $\left(\frac{1}{8} \cdot 4^x\right)^x - \frac{8^x}{16} = 0$  tenglama ildizlarining o'rtta arifmetigini toping.

- A)  $1,5$  B)  $3$  C)  $2,5$  D)  $2$

8.  $x, y, z$  - butun sonlar bo'lib,  $\begin{cases} \frac{xy}{y-x} = -\frac{15}{2} \\ \frac{yz}{z-y} = \frac{21}{4} \\ \frac{xz}{z-x} = \frac{35}{2} \end{cases}$

bo'lsa,  $x + y - z = ?$

- A)  $4$  B)  $15$  C)  $9$  D)  $1$

9.  $\frac{bc - a^2}{ab} - \frac{b^2 - ac}{bc} + \frac{ab - c^2}{ac}$  ifodani kasrga aylantiring.

- A)  $\frac{a^2 - b^2 - c^2}{abc}$  B)  $abc$  C)  $-1$  D)  $0$

10.  $\frac{2^{19} \cdot 27^3 + 15 \cdot 4^9 \cdot 9^4}{6^9 \cdot 2^{10} + 12^{10}}$  ni hisoblang.

- A)  $2$  B)  $\frac{1}{3}$  C)  $\frac{1}{2}$  D)  $1$

11. Ishorasi almashinuvchi geometrik progressiyaning birinchi hadi  $-2$  ga, uchinchi hadi  $-8$  ga teng bo'lsa, shu progressiyaning dastlabki 6 ta hadi yig'indisini toping.

- A)  $36$  B)  $-42$  C)  $-36$  D)  $42$

12. To'g'ri to'rtburchakning bo'yi kvadratning tomonidan  $8$  m uzun, eni esa shu kvadrat tomonidan  $4$  m qisqa. Kvadrat tomonini  $x$  bilan belgilab, to'g'ri to'rtburchak perimetri va yuzi uchun ifoda tuzing.

- A)  $P = 4x + 2; S = (x + 8)(x - 4)$   
 B)  $P = 4x + 4; S = x^2 + 4x - 18$   
 C)  $P = 4x + 8; S = 4(x + 8)$   
 D)  $P = 4(x + 2); S = (x + 8)(x - 4)$

13.  $16^5 + 2^{15}$  yig'indi berilgan sonlardan qaysi biriga qoldiqsiz bo'linadi?

- A)  $9$  B)  $33$  C)  $29$  D)  $17$

14.  $\log_{x-1}(x+1) > 2$  tengsizlikni yeching.

- A)  $(2; 3)$   
 B)  $(2; 3) \cup (3; \infty)$   
 C)  $(-\infty; 0) \cup (3; \infty)$   
 D)  $(0; 1) \cup (2; 3)$

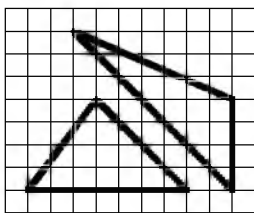
15. Radiusi  $r$  bo'lgan aylananing vatari aylana markazidan  $\frac{r\sqrt{3}}{2}$  uzoqlikda bo'lsa, bu vatar tortib turgan yoy uzunligini toping.

- A)  $\frac{\pi r}{2}$  B)  $\frac{\pi r}{6}$  C)  $\frac{\pi r}{4}$  D)  $\frac{\pi r}{3}$

16.  $\left| \frac{2x^5}{x^4 - 16} \right| = \frac{2x^5}{16 - x^4}$  tenglamaning barcha natural yechimlari yig'indisidan eng katta manfiy butun yechimi ayirmasini toping.

- A)  $3$  B)  $4$  C)  $1$  D)  $2$

17. Rasmda qanday uchburchaklar tasvirlangan?



- A) yuzalari har xil  
 B) tengdosh  
 C) perimetrlari bir xil  
 D) uchburchaklardan biri to'g'ri burchakli
18.  $\sqrt{x^2 + 2x + 1} - |x - 4| = 2$  tenglamaning  $[1; 3]$  kesmadagi ildizini toping.  
 A) bu oraliqda yechimi yo'q B) 2,(3) C) 1,5  
 D) 2,5
19. Muntazam o'nikkiburchakka tashqi chizilgan aylana radiusi  $\sqrt{2 + \sqrt{3}}$  ga teng bo'lsa, uning tomonini toping.  
 A) 2 B)  $\sqrt{3}$  C) 1 D)  $\sqrt{2 + \sqrt{3}}$
20. To'g'ri burchakli trapetsiyaga radiusi 5 ga teng aylana ichki chizilgan. Agar trapetsiyaning katta asosi 17 ga teng bo'lsa, aylana markazidan trapetsiyaning o'tkir burchagigacha bo'lgan masofani toping.  
 A) 9 B) 13 C) 12 D) 7
21.  $\sqrt{x^2 + 3x - 3} = 2x - 3$  tenglamani yeching.  
 A) 4 B) 5 C) 3 D) -4
22.  $f(x) = \sqrt{2}\sin x - 2x$ ,  $f'(x) = ?$   
 A)  $\sqrt{2}\cos x - 2$  B)  $-\cos x - 2$   
 C)  $-\sqrt{2}\cos^2 x - 2$  D)  $\cos x + 2$
23. Agar  $|\vec{AB}| = |\vec{AC}| = |\vec{AB} + \vec{AC}| = 4$  bo'lsa,  $|\vec{CB}|$  ning qiymatini toping.  
 A)  $4\sqrt{2}$  B)  $4\sqrt{3}$  C)  $2\sqrt{3}$  D) 4,5
24. Agar arifmetik progressiyada  $a_1 + a_2 + a_3 = 15$  va  $a_1 a_2 a_3 = 80$  bo'lsa, uning ayirmasini toping.  
 A) 4 B) 5 C) 2 D)  $\pm 3$
25.  $y = \log_{0,5} x$  funksiyaga teskari funksiyani toping.  
 A)  $x = \log_2 y$  B)  $x = \log_{0,5} y$  C)  $y = (0, 5)^x$   
 D)  $x = (0, 5)^y$

26. 
$$\begin{cases} \sin(x - y) = 2 \sin x \sin y, \\ x + y = \frac{\pi}{2} \end{cases}$$
 sistemani yeching.

- A)  $\left(-\frac{\pi}{8} + \pi k; \frac{5\pi}{8} - \pi k\right)$ ,  $k \in Z$   
 B)  $\left(\frac{\pi}{8} + \frac{\pi k}{2}; \frac{5\pi}{8} + \frac{\pi k}{2}\right)$ ,  $k \in Z$   
 C)  $\left(-\frac{\pi}{8} + \frac{\pi k}{2}; \frac{5\pi}{8} - \frac{\pi k}{2}\right)$ ,  $k \in Z$   
 D)  $\left(\frac{\pi}{8} + \pi k; \frac{5\pi}{8} + \pi k\right)$ ,  $k \in Z$
27. Agar  $xy + yz + zx = 16$  bo'lsa,  $x^2 + y^2 + z^2$  ifoda teng bo'lishi mumkin bo'lgan eng kichik qiymatni toping.  
 A) 48 B) 16 C) 32 D) 8
28. Zavodning 3 ta sexida 2740 nafar ishchi ishlaydi. Ikkinchi sexda birinchisiga nisbatan 140 ta ko'p ishchi, uchinchi sexda esa ikkinchisiga nisbatan 1,2 marta ko'p ishchi ishlaydi. Har bir sexda qanchadan ishchi ishlaydi?  
 A) 760; 900; 1080 B) 790; 900; 1050  
 C) 750; 900; 1090 D) 760; 980; 1000
29. Shar sirtining unga ichki chizilgan kub sirtiga nisbatini toping.  
 A)  $\frac{3\pi}{2}$  B)  $\frac{\pi}{6}$  C)  $\frac{\pi}{2}$  D)  $\frac{\pi}{4}$
30.  $\int_0^{\frac{\pi}{12}} \cos 2x dx$  ni hisoblang.  
 A)  $\frac{3}{4}$  B)  $\frac{1}{3}$  C)  $\frac{1}{2}$  D)  $\frac{1}{4}$
31. Dastur asosida boshqariladigan birinchi hisoblash mashinasini kim va qachon ixtiro qilgan?  
 A) 1930 yil, V. Bush B) 1941 yil, K. Suze  
 C) 1944 yil, G. Eyken D) 1907 yil, Li de Fores
32. Tashkil etuvchi barcha sodda mulohazalar rost bo'lganda quyidagilardan qaysi birining natijasi rost bo'ladi?  
 A)  $(A \vee \neg B) \wedge \neg(C \vee D)$   
 B)  $A \wedge \neg B \vee C \wedge \neg D$   
 C)  $A \vee B \wedge \neg C \vee \neg D$   
 D)  $\neg A \vee (B \vee C) \wedge \neg D$

33. Nomi S harfidan boshlanuvchi va faqat to'rtta belgidan iborat ixtiyoriy kengaytmali fayllar qanday belgilanadi?  
A) S\* \* \*. \* B) S????? C) S????.\* D) S\*.\*
34. MS Word 2003 dasturida uskunalar panelini sozlash bo'limi qaysi menyuda joylashgan?  
A) Файл(Fayl) B) Правка(Tahrir)  
C) Вид(Ko'rinish) D) Формат(Format)
35. Nuqtalar o'rniga kerakli iborani tanlang:  
Foydalanuvchi elektron pochta qutisini Internetga ulangan ... ocha oladi.  
A) faqat o'z kompyuterida  
B) faqat shu pochta ochilgan kompyuterda  
C) ixtiyoriy kompyuterda  
D) faqat server kompyuterda
36. Dastur lavhasida X qaysi qiymatni qabul qiladi?  
VAR i,j,X: intejer;  
BEGIN FOR i:=1 TO 2 DO;  
FOR j:=2 DOWNT0 1 DO X:=i+j; END.  
A) 3 B) 7 C) 4 D) 10

### FIZIKA

1. Tezligi  $1,9 \cdot 10^7$  m/s bo'lgan  $\alpha$ -zarra oltin atomi yadrosi yo'nalishida harakatlanib, yadroga qanday eng kichik masofagacha (m) yaqinlashishi mumkin?  $\alpha$ -zarraning massasi  $6,6 \cdot 10^{-27}$  kg, zaryadi  $1,3 \cdot 10^{-17}$  Kl.  
A)  $3,1 \cdot 10^{-14}$  B)  $4,9 \cdot 10^{-14}$  C)  $4 \cdot 10^{-14}$   
D)  $3,8 \cdot 10^{-14}$
2. Uzoq masofaga uchayotgan kosmik kemanding tezligi harakat boshidan 1 soat o'tgach 1000 km/s ga yetdi. Kemanding tezlanishini ( $m/s^2$ ) toping.  
A) 100 B) 1000 C) 278 D) 0,278
3. Yorug'lik suvda qanday tezlik (m/s) bilan tarqaladi?  $n_{suv}=1,33$   
A) 00000 B)  $2,25 \cdot 10^8$  C)  $3 \cdot 10^8$   
D)  $2,20 \cdot 10^8$
4. Tebranish konturida sig'imi 80 pF bo'lgan kondensator va induktivligi 20  $\mu H$  g'altak bor. Konturning xususiy tebranishlari davri ( $\mu s$ ) qanday?  
A) 0,45 B) 0,25 C) 0,50 D) 0,20

5. Garmonik tebranishlarining amplitudasi 5 sm, boshlang'ich fazasi  $\frac{3\pi}{2}$  ga teng. Tebranishlar soni minutiga 120 marta tebranadi. Garmonik tebranishlarning tenglamasini ko'rsating.

A)  $x = 5 \cos \left( 2\pi t + \frac{3\pi}{2} \right)$

B)  $x = 0,05 \sin 4\pi t$

C)  $x = 0,05 \cos \left( 4\pi t + \frac{3\pi}{2} \right)$

D)  $x = 5 \sin \left( 4\pi t + \frac{\pi}{2} \right)$

6. Temperaturaning pastki chegarasi absolyut shkala bo'yicha nimaga teng (K)?  
A) 0 B) -273 C) 273 D) -100

7. Ko'z akkomodatsiyasi nima?

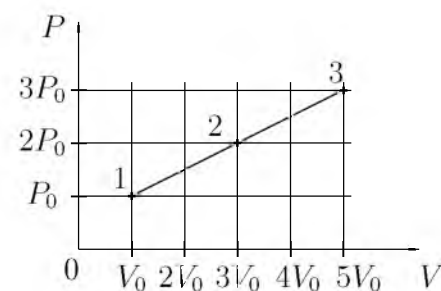
A) ko'z gavharining fokus masofasini kuzatilayotgan buyumgacha bo'lgan masofaga moslash qobiliyati

B) uzoqdan ko'rarlik

C) ko'rish burchagi

D) yaqindan ko'rarlik

8. Rasmda bir atomli bir mol ideal gaz ustida amalga oshgan jarayon tasvirlangan. Temperaturalar nisbati  $T_2/T_1$  ni aniqlang.



- A) 15 B) 6 C) 5 D) 3

9. Balandligi 210 m bo'lgan sharsharadan tushayotgan suvning pastdagi temperaturasi sharshara boshidagi temperaturasidan qancha ( $^{\circ}C$ ) ortiq? Suvning solishtirma issiqlik sig'imi  $4200 J/(kg \cdot K)$ . Mexanik energiya suvning isishi uchun sarf bo'ladi.  
A) 1,2 B) 0,5 C) 2 D) 1

10. Qarshiliklari  $5\text{ k}\Omega$ ,  $20\text{ k}\Omega$  va  $4\text{ k}\Omega$  ga teng bo'lgan rezistorlar o'zaro parallel ulanib, so'ngra elektr tarmog'iga ulandi. Agar ikkinchi rezistordagi tok kuchi  $4\text{ mA}$  ga teng bo'lgan bo'lsa, tarmoqdagi tok kuchini (mA) toping.  
A) 24 B) 36 C) 12 D) 40
11. Yerdan Oygacha bo'lgan masofa  $384\text{ ming km}$  bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?  
A) 1,4 B) 1,5 C) 1,3 D) 1,2
12. Induksiya vektorining moduli  $100\text{ mT}$  bo'lgan bir jinsli magnit maydonining kuch chiziqlariga  $30^\circ$  burchak ostida  $2\text{ km/s}$  tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2\text{ }\mu\text{C}$  ga teng.  
A) 0,2 B) 2 C) 4 D) 0,4
13.  $0,5\text{ g}$  vodorod va  $32\text{ g}$  kislorod aralashmasining bosimi  $93\text{ kPa}$ , harorat esa  $280\text{ K}$  bo'lgandagi zichligi ( $\text{kg/m}^3$ ) toping. Vodorod va kislorodning molyar massasi mos ravishda  $2$  va  $32\text{ g/mol}$ .  
A) 1,04 B) 0,5 C) 1,5 D) 2
14. Tebranish konturi induktivligi  $2\text{ }\mu\text{H}$  bo'lgan g'altak va sig'imi  $1800\text{ pF}$  bo'lgan kondensatordan iborat kontur qanday to'lqin uzunlikka (m) mo'ljallangan?  $c=3\cdot 10^8\text{ m/s}$   
A) 100 B) 110 C) 120 D) 130
15. Chaqmoq gaz razryadining qaysi turiga misol bo'ladi?  
A) uchqun razryad B) toj razryad  
C) miltillama razryad D) elektr yoy razryad
16. Qarshiligi  $5\text{ }\Omega$  bo'lgan o'tkazgichning ko'ndalang kesmidan  $1,5\text{ min}$  davomida  $45\text{ C}$  zaryad miqdori o'tdi. Shu o'tkazgichning uchlaridagi kuchlanishni (V) toping.  
A) 2 B) 1 C) 5 D) 2,5
17. O'q miltiqdan  $1000\text{ m/s}$  tezlik bilan uchib chiqdi. Bunda tepki ta'sirida miltiq  $2\text{ m/s}$  tezlik olsa, o'qning massasi miltiqning massasidan necha marta kichikligini aniqlang.  
A) 475 B) 450 C) 500 D) 600
18. Quvvati  $25\text{ W}$  va  $100\text{ W}$  bo'lgan 2 ta lampochka  $220\text{ V}$  kuchlanishda ishlashga muljallangan. Qaysi lampochkaning qarshiligi katta va necha marta?  
A)  $R_1 = 4R_2$  B)  $R_2 = 2R_1$  C)  $R_2 = 4R_1$   
D)  $R_1 = 2R_2$
19. Bir jinsli elektr maydonida  $\alpha$ -zarrachasi kuchlanganlik vektorining yo'nalishi bo'ylab ko'chgan bo'lsa uning potensial energiyasi qanday o'zgaradi?  
A) avval ortib so'ngra kamayadi  
B) o'zgarmaydi C) kamayadi D) ortqdi
20. Gorizontga nisbatan  $53^\circ$  burchak ostida  $v_0$  tezlik bilan otilgan jismning  $20\text{ m}$  balandlikdan erkin tushgan jism bilan uchish vaqtlari teng bo'lsa,  $v_0$  ni (m/s) toping.  $\cos 53^\circ = 0,6$   
A) 16,3 B) 19,2 C) 13,4 D) 12,5
21. Tovush havodan suvga o'tganda tovush to'lqinining uzunligi necha marta o'zgaradi? Tovushning suvdagi tezligi  $1480\text{ m/s}$ , havodagi tezligi  $340\text{ m/s}$ .  
A) 4,35 B) 435 C) 43,5 D) 0,435
22. Yadro nuklonlarga ajratib yuborildi. Bunda energiya yutiladimi yoki ajraladimi?  
A) yutilishi ham, ajralishi ham mumkin  
B) ajraladi  
C) yutiladi  
D) og'ir yadrolarda yutiladi, yengil yadrolarda ajraladi
23. Prujinaning  $4\text{ mm}$  cho'zish uchun  $0,02\text{ J}$  ish bajarish kerak. Shu prujinaning  $4\text{ sm}$  cho'zish uchun qancha ish (J) bajarish kerak?  
A) 8 B) 2 C) 0,8 D) 20
24. Oyning Yer atrofidagi orbita bo'ylab aylanishidagi tezlanishi nimaga teng ( $\text{m/s}^2$ )? Yer va Oy markazlari orasidagi masofa  $60$  Yer radiusiga teng.  $G_{Yer} = 10\text{ m/s}^2$  deb hisoblang.  
A)  $1/36$  B)  $1/3600$  C)  $1/720$  D)  $1/360$
25. Yer sirtidan qanday balandlikda (km) jismning massasi 4 marta kamayadi?  $R = 6400\text{ km}$   
A) o'zgarmaydi B) 12800 C) 6400  
D) 19200

26. Fotoning energiyasi  $4,4 \cdot 10^{-19}$  J bo'lgan yorug'lik to'lqin uzunligi  $3 \cdot 10^{-7}$  m. Shu muhitning absolut sindirish ko'rsatkichini aniqlang.  $h=6,63 \cdot 10^{-34}$  J·s  
A) 1,5 B) 2,4 C) 1,6 D) 1,3
27. Ma'lum tezlik bilan harakatlanadigan jismning kinetik energiyasi 50 MJ, impulsi 10 kJ·m/s bo'lsa, massasini (kg) toping.  
A) 1 B) 1,5 C) 0,5 D) 2
28. Solenoiddagi tok kuchi 1,5 A bo'lganda, undan 150 mWb magnit oqimi o'tsa, uning induktivligini (Hz) aniqlang.  
A) 1 B) 0,1 C) 0,5 D) 0,3
29. Massasi 8 kg bo'lgan snaryad diametri 100 mm bo'lgan to'p stvolidan 600 m/s tezlik bilan uchib chiqdi. Stvoldagi porox gazining o'rtacha bosimi 1 MPa. snaryadning stvoldagi harakat vaqtini (s) aniqlang.  
A) 0,55 B) 0,61 C) 0,7 D) 0,92
30.  $0,6c$  tezlik bilan harakatlanayotgan zarraning massasi tinchlikdagi massasiga qaraganda qanchaga ortgan? Zarraning tinchlikdagi massasi  $m_0$ .  
A)  $1,6m_0$  B)  $0,8m_0$  C)  $1,25m_0$  D)  $0,25m_0$
31. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 12-sekundda bosib o'tgan yo'li 4-sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
A)  $23/9$  B)  $23/7$  C) 9 D)  $23/5$
32. Marmar plitaning havodagi og'irligi 405 N. Uni suvda ushlab turish uchun qanday kuch (N) kerak? Marmarning zichligi  $2,7 \text{ g/sm}^3$ ,  $g=10 \text{ m/s}^2$   
A) 405 B) 555 C) 150 D) 255
33. Ballonda 20 mol gaz bo'lsa, undagi molekular sonini toping.  
A)  $12 \cdot 10^{25}$  B)  $1,2 \cdot 10^{25}$  C)  $12 \cdot 10^{24}$  D)  $1,2 \cdot 10^{24}$
34. 120 V ga mo'ljallangan 40 Vt li lampochka 220 V li tarmoqqa ulanganda normal yonishi uchun unga ketma-ket qilib necha metr  $3 \cdot 10^{-4}$  m diametrli nixrom simdan ulash kerak bo'ladi? Nixromning solishtirma qarshiligi  $1,1 \cdot 10^{-6} \text{ Om}\cdot\text{m}$ .  
A) 15,3 B) 10,6 C) 9,3 D) 19,3
35. Shaxta tubida barometr 82 sm.sim.ust. ni, yer sirtida 78 sm.sim.ust. ni ko'rsatayotgan bo'lsa, shaxtaning chuqurligini (m) aniqlang.  
A) 40 B) 480 C) 4,8 D) 48
36. Nima uchun izoxorik jarayonda gazning zichligi o'zgarmaydi?  
A) massa va hajm o'zgarmagani uchun  
B) bosim temperaturaga to'g'ri proporsionalligi uchun  
C) bosim o'zgargani uchun  
D) temperatura o'zgargani uchun

### INGLIZ TILI

- Choose the answer which correctly completes the sentence.  
Mark and Susan met during their holiday in Sweden. It was love at ... first sight.  
A) - B) a C) an D) the
- Choose the answer which correctly completes the sentence.  
She was lucky enough to get tickets for the first ... of the hit musical "Cats".  
A) performed B) to perform C) perform D) performance
- Choose the answer which correctly completes the sentence.  
I advise you to buy a Volkswagen . . . .  
Volkswagen cars are cheap, they last a long time.  
A) despite B) as C) even though D) because
- Choose the answer which correctly completes the sentence.  
You can't have good crops unless you ... the soil. It is usually poor without care and cultivation.  
A) cultivate B) will not cultivate C) don't cultivate D) will cultivate
- Choose the answer which correctly complete the sentence.  
Don't you remember ... the food back last time? It was terrible.  
A) sent B) send C) sending D) to send



6. Choose the answer which correctly complete the sentence.  
After the president of the company had made decision, his resignation ... announced yesterday on television.  
A) *has* B) *was* C) *-* D) *have been*
7. Choose the answer which correctly complete the sentence.  
Someone broke into their house ... they had left the window open.  
A) *because of* B) *because* C) *that* D) *so*
8. Choose the answer which correctly complete the sentence.  
I've got three new dresses: a red one and two black dresses. I think I'll wear ... red one.  
A) *-* B) *the* C) *a* D) *some*
9. Choose the answer which correctly completes the sentence.  
The possibility of losing his money never entered ... his mind.  
A) *to* B) *on* C) *-* D) *in*
10. Choose the answer which correctly complete the sentence.  
Staying in a hotel costs ... renting a room in a dormitory for a week.  
A) *twice as much as* B) *twice more than*  
C) *twice more as* D) *as much twice as*
11. Choose the answer which correctly completes the sentence.  
There was a conference in the Institute.  
A number of teachers ... there.  
A) *are sent* B) *be sent* C) *were sent*  
D) *is sent*
12. Choose the answer which correctly completes the sentence.  
I wish I ... there to see Dan's face when they told him the news.  
A) *had been* B) *were* C) *have been*  
D) *would have been*
13. Choose the answer which correctly completes the sentence.  
That film was released only two days ago, so you ... the film last week.  
A) *mustn't see* B) *needn't see*  
C) *couldn't see* D) *couldn't have seen*
14. Choose the answer which correctly completes the sentence.  
It has been snowing since morning and I'm afraid it ... by Friday.  
A) *won't stop* B) *won't have stopped*  
C) *doesn't stop* D) *will not be stopping*
15. Choose the answer which correctly completes the sentence.  
Even though a great deal of the lawn is open to the sun, there are ... of shade trees to make it comfortable.  
A) *none* B) *some* C) *plenty* D) *no*
16. Choose the answer which correctly completes the sentence.  
George's father gives him enough money to go to school, so he ... work.  
A) *didn't have to* B) *ought not to*  
C) *has to* D) *doesn't have to*
17. Choose the answer which correctly completes the sentence.  
I don't like cooking, and...  
A) *he doesn't neither* B) *either he doesn't*  
C) *he doesn't either* D) *he either doesn't*
18. Choose the answer which correctly completes the sentence.  
What were you writing when your computer ...?  
A) *was crashing* B) *had crashed* C) *crashed*  
D) *crash*
19. Choose the answer which correctly completes the sentence.  
She'll have the film ... in the city.  
A) *to develop* B) *developed* C) *developing*  
D) *develop*
20. Choose the answer which correctly completes the sentence.  
We invited Peter for dinner yesterday, and he came round ... we were eating.  
A) *as soon as* B) *till* C) *while* D) *during*
21. Choose the answer which correctly completes the sentence.  
The works of Picasso were quite ... during various periods of his artistic life.  
A) *differentiate* B) *differ* C) *different from*  
D) *different*

22. Choose the answer which correctly completes the sentence.

One day my mother discovered a bird in the living-room. It ... into the flat through an open window.

- A) *had flown*    B) *has flown*    C) *was flying*  
D) *flew*

23. Choose the answer which correctly completes the sentence.

We knew why Frank ... to Berlin several times.

- A) *was*    B) *will be*    C) *had been*  
D) *has been*

Read the text. Then choose the correct answer to question 24-26.

When the first cars hit British roads in the late 19th century, they had an unusual safety feature. Every "horseless carriage" was guided by a man walking in front waving a red flag to warn other road users of the vehicle's approach. These early precautions, known as the "red flag laws", seem laughable now. However, future generations may look at current safety measures in much the same way. In the US state of Nevada, the government has begun to draft a set of regulations that will allow self-driving vehicles on its roads. These cars will have technological advantages such as cameras that determine exactly where other cars are and how fast they are moving. Promoters of the self-driving cars believe they will save time and fuel, and reduce traffic jams. If these cars become a reality, there may be a dramatic decrease in human drivers on the roads. People who still want the pleasure of driving themselves will someday have to warn other road users that they are engaging in such a dangerous activity. People then might consider reintroducing the red flags.

24. The author of the passage thinks that ...

- A) *many cars will not be driven by humans when unmanned cars come into existence.*  
B) *current technology is insufficient to meet safety needs on today's roads.*  
C) *road users rely heavily on self-driving cars due to their technological advantages.*  
D) *precautions taken by the British were not as effective as those of the Nevada government.*

25. It can be understood from the passage that ...

- A) *promoters of the self-driving cars believe these cars will have several benefits.*  
B) *the technical features of self-driving cars will make them expensive at first.*  
C) *we need to build special roads for self-driving cars.*  
D) *the designs of self-driving cars will be more attractive than current ones.*

26. It is inferred in the passage that ...

- A) *a red flag was generally used to signal the approach of a pedestrian.*  
B) *cars were often used to carry equipment when they were first introduced to British roads in the 19th century.*  
C) *the Nevada government was inspired by the "red flag laws" while drafting regulations for self-driving cars.*  
D) *driving a car yourself may be considered dangerous in the future.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Although they were described as the (27)... designs in many years, there isn't anything very new about the latest line of shoes from Santorelli. As one of the most famous designers in Italy, Salvatore Santorelli is expected to do more than simply repeat the previous year's (28)... formula of "smart, but casual" sandals in a range of pastels.

- 27.

- A) *Italian first new*    B) *new first Italian*  
C) *first Italian new*    D) *first new Italian*

- 28.

- A) *successful*    B) *successfully*    C) *succession*  
D) *success*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

In 900AD the cities of the Mayan civilization were still prosperous, but a hundred years later they (29)... . A number of theories have been put (30)... to explain this. One theory is that the Mayan ruling class died out because rulers did not work and so became (31)..., and there was nobody to tell the farmers what to do.

29.

- A) *had abandoned*    B) *abandoned*  
 C) *had been abandoned*  
 D) *have been abandoned*

30.

- A) *down*    B) *at*    C) *through*    D) *forward*

31.

- A) *health*    B) *unhealthy*    C) *unhealth*  
 D) *healthy*

Read the text. Then choose the correct answer to question 32-33.

On the day of my first piano concert, I became more and more nervous. To help me calm down, my piano teacher told me to place several cabbages in the room where I practiced. I was so eager to get over my nerves that I was willing to try anything. For the next few hours, I played to an audience of cabbages. When the time of the concert came, I was still terribly nervous. My hands felt like ice.

When I finally walked across the stage, I looked out into the dark audience, but I couldn't see anyone. I tried to imagine that all the people sitting in the hall just as well might be cabbages.

As I sat down to play, my hands relaxed and I played all my pieces without a mistake. The concert was a success.

32. The pianist stopped feeling nervous. . .

- A) *as soon as the concert was over*  
 B) *because he had practiced a lot*  
 C) *when the audience began to applaud*  
 D) *when he found he couldn't see the audience*

33. On the day of the concert the teacher . . .

- A) *advised him to put cabbages in the room where he practiced*  
 B) *felt nearly as nervous as the pianist*  
 C) *couldn't think of a way helping the pianist to stay calm*  
 D) *advised him to eat a little cabbage*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Mars is larger than Earth*  
 B) *It takes longer for Mars to circle the Sun than it takes Earth*  
 C) *Mars has two moons*  
 D) *Martian soil is rocky*

35. Man-made canals were supposedly discovered by ...
- A) *Phobos*
  - B) *Viking I*
  - C) *Schiaparelli*
  - D) *Martian*
36. Mars has been nicknamed as ...
- A) *Martian*
  - B) *Deimos*
  - C) *Viking I*
  - D) *The Red Planet*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000033**

Toshkent – 2014

### MATEMATIKA (INFORMATIKA BILAN)

- Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.  
A) 30 B) 20 C) 10 D) 15
- Cheksiz kamayuvchi geometrik progressiyaning ikkinchi hadi beshinchi hadidan 8 marta katta. Agar bu geometrik progressiya hadlari yig'indisi 6 ga teng bo'lsa, uning birinchi hadini toping.  
A) 3 B) 2 C) 4 D) 6
- $\log_2(x-1) - \log_2(x+1) + \log_{\frac{x+1}{x-1}} 2 > 0$  tengsizlikni yeching.  
A)  $x > 3$  B)  $x > 4$  C)  $x < 3$  D)  $x > 6$
- $2012^{2011^{2010}}$  sonining oxirgi raqamini toping.  
A) 6 B) 2 C) 8 D) 4
- $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \dots \cdot \sin 45^\circ}{\cos 46^\circ \cdot \cos 47^\circ \cdot \dots \cdot \cos 89^\circ}$  ni hisoblang.  
A) 1 B)  $\frac{1}{2}$  C)  $\frac{\sqrt{2}}{2}$  D)  $\frac{\sqrt{3}}{2}$
- $ABC$  uchburchakda  $BH$  -balandlik,  $CM$  -mediana,  $MH=12$  bo'lsa,  $AB$  ni toping.  
A) 12 B) 24 C) 28 D) 20
- $\begin{cases} 2^{\frac{x-y}{2}} + 2^{\frac{y-x}{2}} = 2,5 \\ \lg(2x-y) + 1 = \lg(y+2x) + \lg 6 \end{cases}$  tenglamalar sistemasini yeching.  
A) (1; -1) va (1; 0)  
B)  $\left(\frac{2}{3}; -\frac{2}{3}\right)$  va  $\left(\frac{4}{3}; -\frac{4}{3}\right)$   
C)  $\left(\frac{1}{2}; -\frac{1}{2}\right)$  va  $\left(\frac{1}{4}; -\frac{1}{4}\right)$   
D) (4; 2)
- Teploxod ikki pristan oraligidagi masofani daryo oqimi bo'yicha 7 soat, oqimga qarshi 9 soatda o'tadi. Agar oqimning tezligi 2 km/soat bo'lsa, pristanlar orasidagi masofani (km) aniqlang.  
A) 130 B) 126 C) 120 D) 128
- Dastlabki  $n$  ta hadining yig'indisi  $S_n = 2n^2 + 3n$  rekurent formula bilan berilgan ketma-ketlikning o'ninchi hadini toping.  
A) 39 B) 41 C) 42 D) 27
- $f(x) = \frac{1}{\sin^2 x} + x^2$ ,  $F(x) = ?$   
A)  $-ctgx + \frac{x^3}{3} + c$  B)  $ctgx + \frac{2x^2}{3} + c$   
C)  $ctgx + 2x + c$  D)  $ctgx + 2x^2 + c$
- $\frac{a^3 - 2a^2 + 5a + 26}{a^3 - 5a^2 + 17a - 13}$  kasrni qisqartiring.  
A)  $\frac{a-2}{a+2}$  B)  $\frac{a+2}{a-1}$  C)  $\frac{a+2}{a-2}$  D)  $\frac{1-a}{a+2}$
- Muntazam yigirmaburchakning eng katta va eng kichik diagonallari orasidagi burchakni toping.  
A)  $72^\circ$  B)  $76^\circ$  C)  $80^\circ$  D)  $82^\circ$
- $y = \arcsin \frac{x-3}{2} - \lg(4-x)$  funksiyaning aniqlanish sohasini toping.  
A) [1; 5] B) (1; 4) C) [1; 4] D) [1; 4]
- $\sqrt[3]{x+2} + \sqrt[3]{x+3} + \sqrt[3]{x+4} = 0$  tenglama ildizlarining yig'indisini toping.  
A) 2 B) -3 C) 1 D) -5
- $y = \sqrt{16-x^2}$  funksiyaning grafigi bo'lgan egri chiziq uzunligini toping.  
A) aniqlab bo'lmaydi B)  $4\pi$  C)  $8\pi$  D)  $6\pi$
- $\sqrt[3]{0,5} + \sqrt[3]{4} - \sqrt[3]{13,5}$  ni hisoblang.  
A)  $-\sqrt[3]{2}$  B) 0 C)  $\sqrt[3]{5}$  D)  $-\sqrt[3]{5}$
- $\begin{cases} x^2 - y = 23 \\ x^2 y = 50 \end{cases}$  tenglamalar sistemasini yeching.  
A) (5; 2)(-5; 2) B) (4; 5)(-4; 5) C) (-2; 5)(-5; -2)  
D) (5; 4)(-5; 4)
- $\sqrt{x^2 + 2x + 1} - |x - 4| = 2$  tenglamaning [1; 3] kesmadagi ildizini toping.  
A) 2, (3) B) bu oraliqda yechimi yo'q C) 1, 5  
D) 2, 5
- $f(x) = \sin 2x + 4x$ ,  $f'(x) = ?$   
A)  $2\cos 2x + 4$  B)  $-\cos 2x + 4$   
C)  $\cos 2x + 4x$  D)  $\cos x + 4$
- $f(x) = \frac{1}{|x^2 + 2x + 1| + 2} + 1,5$  funksiyaning eng katta qiymatini toping.  
A) 2 B) 0,5 C) 1,5 D) 2,5

21. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $2\sqrt{3}$  sm bo'lsa, shu aylanaga ichki chizilgan kvadratning yuzini ( $\text{sm}^2$ ) hisoblang.  
A) 16 B) 18 C) 12 D) 20
22. 117, 177, 237 sonlarini  $A$  soniga bo'lganda mos ravishda 5, 9, 13 qoldiqlar chiqadi.  $A$  ning qabul qilishi mumkin bo'lgan qiymatlari yig'indisini toping.  
A) 98 B) 42 C) 31 D) 120
23. Agar  $|\vec{AB}| = |\vec{AC}| = |\vec{AB} + \vec{AC}| = 4$  bo'lsa,  $|\vec{CB}|$  ning qiymatini toping.  
A)  $4\sqrt{3}$  B) 4,5 C)  $4\sqrt{2}$  D)  $2\sqrt{3}$
24.  $\sqrt{x^2 - x - 12} + \sqrt{5x - x^2 - 4} + \text{tg} \frac{\pi}{2x - 4} = 1$  tenglamani yeching.  
A) 1 B) 3 C) 1; 3 D) 4
25. Tekislikdan  $h$  uzoqlikda joylashgan nuqtadan tekislikka o'tkazilgan va tekislik bilan  $30^\circ$  li burchak hosil qiladigan og'maning uzunligini toping.  
A)  $\sqrt{2}h$  B)  $2h$  C)  $1,5h$  D)  $\sqrt{3}h$
26.  $||x - 4| - 7| > 5$  tengsizlikning eng kichik musbat va eng katta manfiy butun yechimlari ayirmasini toping.  
A) 6 B) 12 C) -6 D) -12
27. Agar  $a^2 + b^2 = 1$  bo'lsa,  $a^6 + 3a^2b^2 + b^6$  ni toping.  
A) 1 B) 2 C)  $ab$  D)  $a + b$
28.  $\frac{2x - 5}{x + 3} > 3$  tengsizlikni yeching.  
A)  $(-\infty; -14) \cup (-3; \infty)$   
B)  $(-14; 3)$   
C)  $(-14; -3) \cup (-3; \infty)$   
D)  $(-14; -3)$
29. Yuzi  $120 \text{ sm}^2$ , diagonali esa 17 sm bo'lgan to'g'ri to'rtburchakning tomonlarini (sm) toping.  
A) 30; 4 B) 16; 12 C) 15; 8 D) 12; 10
30. Radiusi 5 ga teng bo'lgan doiradagi uzunligi 8 ga teng vatar doira markazidan qancha uzoqlikda bo'ladi?  
A) 3,6 B) 3 C) 4 D) 3,2
31. 63 kilobayt axborotda nechta belgi bor?  
A) 516096 ta B) 516098 ta C) 64512 ta D) 64500 ta
32. Tashkil etuvchi barcha sodda mulohazalar rost bo'lganda quyidagilardan qaysi birining natijasi rost bo'ladi?  
A)  $(A \vee \neg B) \wedge \neg(C \vee D)$   
B)  $A \wedge \neg B \vee C \wedge \neg D$   
C)  $A \vee B \wedge \neg C \vee \neg D$   
D)  $\neg A \vee (B \vee C) \wedge \neg D$
33. Tasvirli fayllarning kengaytmasi keltirilgan qatorni aniqlang.  
A) .bmp, .gif B) .com, .exe C) .bas, .pas D) .xls, .doc
34. MS Excel 2003 da berilgan shartni qanoatlantiruvchi satrlarni ajratib olish amali qanday ataladi?  
A) filtrlash B) tartiblash C) avtofiltr D) hisobga olish
35. Nuqtalar o'rniga kerakli iborani tanlang: Foydalanuvchi elektron pochta qutisini Internetga ulangan ... ocha oladi.  
A) faqat o'z kompyuterida  
B) faqat shu pochta ochilgan kompyuterda  
C) ixtiyoriy kompyuterda  
D) faqat server kompyuterda
36. Dastur lavhasida X qaysi qiymatni qabul qiladi?  
VAR i,j,X: integer;  
BEGIN FOR i:=1 TO 2 DO;  
FOR j:=2 DOWNTO 1 DO X:=i+j; END.  
A) 3 B) 7 C) 4 D) 10

## FIZIKA

1. Bosim 100 Pa, molekullari konsentratsiyasi  $10^{25} \text{ m}^{-3}$  bo'lganda gazning temperaturasini (K) toping.  
A) 500 B) 800 C) 650 D) 725
2. **Gaz aralashmasining umumiy bosimi bu aralashmani tashkil etuvchi gazlarning partial bosimlari yig'indisiga teng.** Ushbu qonun qaysi olim nomi bilan ataladi?  
A) Dalton B) Lambert C) Avogadro D) Lashmidt

3. Hidrostansiyaning quvvati 75,5 MW. Agar stansiyaning FIK i 75% bo'lsa va to'g'on suv sathini 10 m balandlikka ko'tarsa suvning sarflanishi ( $m^3/s$ ) nimaga teng?  
A) 850 B) 900 C) 1000 D) 800
4. Zarraning impulsi  $p$ , energiyasi  $E$  bo'lsa, uning tezligi qanday?  
A)  $v = c^2E/p$  B)  $v = E/2p$  C)  $v = c^2p/E$   
D)  $v = p^3/2E$
5. Osilgan prujinaga yuk 0,5 s davr bilan tebranmoqda. Agar yuk prujinadan olinsa, prujina qanchaga qisqaradi (sm)?  
A) 5,4 B) 6,3 C) 2,0 D) 39,7
6. Massasi 2000 kg bo'lgan avtomobilni 0,6  $m/s^2$  tezlanish bilan shatakka olib ketilayotganda trosning cho'zilishini (mm) toping. Trosning bikrlilik koeffitsiyenti 100 kN/m ga teng.  
A) 12 B) 0,12 C) 24 D) 0,24
7. Induksiya vektorining moduli 100 mT bo'lgan bir jinsli magnit maydonining kuch chiziqlariga  $30^\circ$  burchak ostida 2 km/s tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2 \mu C$  ga teng.  
A) 2 B) 0,2 C) 0,4 D) 4
8. Qarshiliklari  $R_1=20 \Omega$  va  $R_2=10 \Omega$  bo'lgan o'tkazgichlar o'zaro parallel ulangan holda elektr tarmog'iga ulandi. Tarmoqdagi tok kuchi 300 mA ga teng bo'lsa, birinchi o'tkazgichda 1 minut ichida qancha issiqlik miqdori (J) ajralib chiqadi?  
A) 12 B) 36 C) 24 D) 15
9. 220 V kuchlanishga mo'ljallangan 180 W quvvatli televizorga qo'yilgan eruvchan saqlagichga 1 A deb yozib qo'yilgan. Bu saqlagich kun bo'yi qancha kuchlanishga (V) bardosh beradi?  
A) 230 B) 240 C) 260,8 D) 268,8
10. Tutash idishlardan biriga suv ( $\rho_{suv}=1000 \text{ kg/m}^3$ ), ikkinchisiga kerosin ( $\rho_{kerosin}=800 \text{ kg/m}^3$ ) qo'yildi. Suv sathidan kerosin ustuni necha foiziga yuqori bo'ladi?  
A) 18,6 B) 25 C) 20 D) 50
11. 30 sm uzunlikdagi elastik prujinaga 100 g massali jism mahkamlangan va gorizontal tekislikda aylantirilmoqda. Bunda prujina 10 sm ga cho'zilgan. Jismning aylanish tezligi 2 m/s ga teng bo'lsa, prujina bikirligini (N/m) toping.  
A) 10 B) 20 C) 13 D) 17
12. Marmar plitaning havodagi og'irligi 405 N. Uni suvda ushlab turish uchun qanday kuch (N) kerak? Marmarning zichligi  $2,7 \text{ g/sm}^3$ ,  $g=10 \text{ m/s}^2$   
A) 555 B) 255 C) 150 D) 405
13. Yopiq idishga to'yingan bug' qamalgan bo'lib bosimi 10 kPa. Agar bosimni 2 marta oshirib, hajmini 2 marta kamaytirsak to'yingan suv bug'larining zichligi qanday o'zgaradi? Jarayon izotermik.  
A) 2 marta oshadi  
B) haroratning qandayligicha bog'liq  
C) 2 marta kamayadi  
D) o'zgarmaydi
14. Chaqmoq chaqgandan so'ng 6 s o'tgach momoqaldiroq gumburladi, yashin razradi kuzatuvchidan qanday masofada (km) bo'lgan?  
A) 56 B) 256 C) 2 D) 45
15. Markazga intilma tezlanish ...  
A) aylanish davri ortishi bilan ortadi  
B) aylanish davrining kvadratiga teskari proporsional  
C) aylanish davrida teskari proporsional  
D) aylanish davri bog'liq emas
16. Massasi 12 kg bo'lgan tinch turgan jismga 8 s davomida 6 N kuch ta'sir qilgan bo'lsa, jismning olgan tezlanishi  $a$ , shu vaqtda erishgan tezligi  $v_t$ , o'tgan yo'li  $S$  ni toping.  
A)  $a=0,5 \text{ m/s}^2$ ;  $v_t=4 \text{ m/s}$ ;  $S=16 \text{ m}$   
B)  $a=25 \text{ m/s}^2$ ;  $v_t=4 \text{ m/s}$ ;  $S=2 \text{ m}$   
C)  $a=4 \text{ m/s}^2$ ;  $v_t=0,5 \text{ m/s}$ ;  $S=2 \text{ m}$   
D)  $a=0,5 \text{ m/s}^2$ ;  $v_t=2 \text{ m/s}$ ;  $S=4 \text{ m}$
17. Buyum va tasvir orasidagi masofa 9 sm. Agar tasvir 2 marta kattalashgan bo'lsa, linzaning fokus masofasi (sm) qanday?  
A) 6 B) 2 C) 18 D) 4,5



18. Elementlari ketma-ket ulangan zanjirning o'zgaruvchan tokka nisbatan to'liq qarshiligi  $\sqrt{R^2 + (\omega L - 1/\omega C)^2}$  ga teng. Rezonans hodisasi kuzatilganda bu qarshilik nimaga teng bo'ladi?

A)  $R$

B)  $\sqrt{R^2 + (\omega C - 1/\omega L)^2}$

C)  $\sqrt{R^2 + (\omega L - 1/\omega C)^2} / 2$

D)  $\sqrt{R^2 + (\omega C + 1/\omega L)^2}$

19. Energiyasi  $3 \cdot 10^{-16}$  J bo'lgan nurlanish fotonining to'liq uzunligi (m) nimaga teng?  $c = 3 \cdot 10^8$  m/s,  $h = 6,6 \cdot 10^{-34}$  J·s

A)  $66 \cdot 10^{-10}$  B)  $6,6 \cdot 10^{-11}$  C)  $66 \cdot 10^{-12}$

D)  $6,6 \cdot 10^{-10}$

20. Izobarik jarayonda bir atomli gazga berilgan issiqlik miqdorining qancha qismi ichki energiyaning ortishiga va qancha qismi ish bajarishga sarf bo'ladi?

A)  $\frac{1}{3}; \frac{2}{3}$

B)  $\frac{1}{5}; \frac{4}{5}$

C)  $\frac{2}{3}; \frac{1}{3}$

D)  $\frac{3}{5}; \frac{2}{5}$

21. Quyida ifodalangan qonun qanday nomlanadi?

**Agar jism bir necha kuch ta'sirida harakatlanayotgan bo'lsa, har bir kuch boshqa kuchlar bilan birga yoki yakka o'zi ta'sir qilayotganidan qat'iy nazar jismga hamma vaqt bir xil tezlanish beradi.**

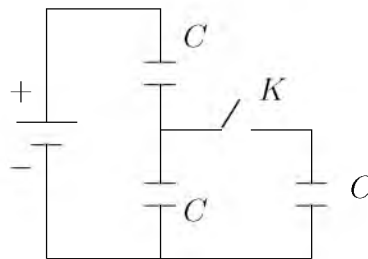
A) *Kuchlar ta'sirining mustaqillik qonuni*

B) *Impulsning saqlanish qonuni*

C) *Nyutonning II qonuni*

D) *Inersiya qonuni*

22. Quyidagi sxema bo'yicha  $K$  kalit ochiq paytidagi  $q$  zaryad kalit yopilgandan keyin nimaga teng bo'ladi? Ikkala holda ham kuchlanish o'zgarmas deb hisoblang.



A)  $3q$  B)  $4q$  C)  $4q/3$  D)  $3q/4$

23. Yadro bombasining portlashi nimadan iborat?

A) *og'ir vodorod yadrolarining sintez reaksiyasidan*

B) *yadrolar parchalanishining zanjirli reaksiyasidan*

C) *dinamitning portlashidan*

D) *poroxning portlashidan*

24. Uzunligi 100 m ko'ndalang kesim yuzi  $0,5 \text{ mm}^2$  bo'lgan aluminiy ( $\rho_{Al} = 0,028 \cdot 10^{-6} \text{ Om} \cdot \text{m}$ ) simning uchlaridagi kuchlanish 7 V. Shu simdan o'tayotgan tok kuchini (A) aniqlang.

A) 2 B) 1,25 C) 1,5 D) 1

25. 3 m/s boshlang'ich tezlik va  $4 \text{ m/s}^2$  tezlanish bilan harakatlanayotgan jismning 4-sekunddagi ko'chishining modulini (m) toping.

A) 15 B) 17 C) 14 D) 16

26. Qaytgan nurni  $20^\circ$  ga burish uchun ko'zguni qanchaga burish kerak?

A)  $5^\circ$  B)  $20^\circ$  C)  $10^\circ$  D)  $40^\circ$

27. Jismning impulsi  $8 \text{ kg} \cdot \text{m/s}$ , kinetik energiyasi esa 16 J. Jismning tezligi (m/s) va massasini (kg) toping.

A) 4; 2 B) 4; 4 C) 2; 4 D) 2; 2

28. Temperatura ortishi bilan yarimo'tkazgichning qarshiligi ...

A) *o'zgarmaydi*

B) *avval ortadi, keyin kamayadi* C) *ortadi*

D) *kamayadi*

29. Kuchlanganlik vektori gorizontol yo'nalgan, moduli  $1,73 \text{ kV/sm}$  ga teng bo'lgan bir jinsli elektr maydonida  $1 \text{ m}$  uzuilikdagi vazinsiz, cho'zilmas ipga elektr zaryadi  $1 \mu\text{C}$ , massasi  $10 \text{ g}$  metall sharcha osib qo'yilgan. Agar elektr maydoni keskin yo'qotilsa sharcha qanday maksimal kinetik energiyaga (mJ) ega bo'ladi?  
A) 50 B) 60 C) 40 D) 30
30. Atom holatidagi kislorod zarrachalarining  $138^\circ\text{C}$  dagi o'rtacha kvadratik tezliklarini (m/s) aniqlang.  $M_{\text{atom}}=16 \text{ g/mol}$ ,  $R=8,3 \frac{\text{J}}{\text{K} \cdot \text{mol}}$   
A) 540 B) 840 C) 800 D) 650
31. Teplovoz 1 vagonga  $6 \text{ m/s}^2$ , 2 vagonga  $4 \text{ m/s}^2$ , 3 vagonga  $2 \text{ m/s}^2$  tezlanish beradi. Bu uchala vagondan iborat sostavga teplovoz qanday tezlanish ( $\text{m/s}^2$ ) beradi?  
A) 11/12 B) 12/11 C) 11/15 D) 12/15
32. O'zgarimas tok manbaiga ulangan  $4 \mu\text{F}$  sig'imli kondensatorga parallel ulangan voltmetr  $6 \text{ V}$  kuchlanishni ko'rsatdi. Agar bu kondensatorga  $2 \mu\text{F}$  sig'imli ikkinchi kondensator ketma-ket ulansa, voltmetr qanday kuchlanishni (V) ko'rsatadi?  
A) 4 B) 3 C) 6 D) 2
33. Izotermik kengayganda ideal gaz  $20 \text{ J}$  ish bajaradi. Gazga qancha issiqlik miqdori (J) berilgan?  
A) issiqlik miqdori berilmaydi B) 50 C) 20 D) 30
34. Maydonining energiyasi  $2 \text{ J}$  bo'lishi uchun induktivligi  $1 \text{ H}$  bo'lgan drossel chulg'amidagi tok kuchi (A) qancha bo'lishi kerak?  
A) 1,5 B) 2 C) 3 D) 4
35. Malus qonuni ifodalovchi formulani ko'rsating.  
A)  $I = I_0 + I \cos \alpha$  B)  $I = I_0 \cos \alpha$   
C)  $I = I_0 \sin \alpha$  D)  $I = I_0 \cos^2 \alpha$
36. Tebranish konturining induktivligi  $0,01 \mu\text{H}$ , sig'imi  $400 \text{ pF}$ . Konturdagi xususiy tebranishlar davri (ns) qanday?  
A) 6,28 B) 2,00 C) 4,00 D) 12,56
1. Choose the answer which correctly completes the sentence.  
I would go out more often if I ... to work so much.  
A) *don't have* B) *hadn't* C) *didn't have*  
D) *wouldn't have*
2. Choose the answer which correctly completes the sentence.  
How about ... out for a meal tonight?  
A) *went* B) *to go* C) *going* D) *go*
3. Choose the answer which correctly completes the sentence.  
Had we known that you were there, we ... you a letter.  
A) *would have written* B) *would had written*  
C) *write* D) *would write*
4. Choose the answer which correctly completes the sentence.  
It has been snowing since morning and I'm afraid it ... by Friday.  
A) *doesn't stop* B) *won't have stopped*  
C) *won't stop* D) *will not be stopping*
5. Choose the answer which correctly complete the sentence.  
Neil Armstrong was the first man on ... Moon.  
A) *a* B) *an* C) *-* D) *the*
6. Choose the answer which correctly complete the sentence.  
We have just heard on TV that, hurricane Jefferey ... hit the Caribbean, causing widespread damage in Puerto Rico.  
A) *-* B) *has* C) *was* D) *have*
7. Choose the answer which correctly completes the sentence.  
The price for that painting was very reasonable; I would gladly have paid ... he asked.  
A) *as three-times than* B) *three times more*  
C) *three times more than*  
D) *three times as much as*
8. Choose the answer which correctly completes the sentence.  
If we lived in the country, we ... a lot of animals.  
A) *will have* B) *had got* C) *would have*  
D) *had*

9. Choose the answer which correctly complete the sentence.  
The man was made ... all the questions in court.  
A) *to answer* B) *answering* C) *answer*  
D) *answered*
10. Choose the answer which correctly completes the sentence.  
These scissors, owing to Mother's warning ... kept out of the children's reach.  
A) *was* B) *is* C) *being* D) *are*
11. Choose the answer which correctly completes the sentence.  
Mark and Susan met during their holiday in Sweden. It was love at ... first sight.  
A) *a* B) *-* C) *an* D) *the*
12. Choose the answer which correctly completes the sentence.  
There is the student ... book you found.  
A) *which* B) *whose* C) *who* D) *whom*
13. Choose the answer which correctly completes the sentence.  
We had invited a hundred guests, none of ... he knew.  
A) *whose* B) *which* C) *that* D) *whom*
14. Choose the answer which correctly completes the sentence.  
I apologize for telling a lie, but I was trying to protect you ... the truth. Sometimes the truth hurts.  
A) *to* B) *for* C) *on* D) *from*
15. Choose the answer which correctly complete the sentence.  
Most students in Britain ... pay at least part of their university fees.  
A) *may* B) *have to* C) *can* D) *ought*
16. Choose the answer which correctly completes the sentence.  
This newspaper has a long ... of attacking corruption and mismanagement.  
A) *tradition* B) *traditionally*  
C) *traditionalism* D) *traditional*
17. Choose the answer which correctly completes the sentence.  
Restaurants in the city have increased their prices by ... 50 per cent over the last year as rents have risen.  
A) *as few as* B) *as little as* C) *as much as*  
D) *as many as*
18. Choose the answer which correctly completes the sentence.  
"She said she had met my friend two weeks before". "... she?"  
A) *Did* B) *Hadn't* C) *Has* D) *Didn't*
19. Choose the answer which correctly completes the sentence.  
They asked me, "Where has she gone?"  
I wonder where ... .  
A) *she has gone* B) *she had gone*  
C) *had she gone* D) *has she gone*
20. Choose the answer which correctly completes the sentence.  
Most of the forest ... cut down and the trees remaining are now under threat.  
A) *had been* B) *has been* C) *were*  
D) *have been*
21. Choose the answer which correctly completes the sentence.  
Our new office building will be located downtown ... the corner of Euclid Avenue and East Ninth Street.  
A) *to* B) *on* C) *in* D) *of*
22. Choose the answer which correctly completes the sentence.  
A telephone recorder tells callers what time ... , so you needn't go specially to find out the time.  
A) *start the movie* B) *the movie starts*  
C) *does the movie start* D) *starts the movie*

23. Choose the answer which correctly completes the sentence.

It is usually ... lava but gas that kills people during volcanic eruptions.

- A) no B) not C) neither D) not only

Read the text. Then choose the correct answer to question 24-26.

In the past, before technology was used to monitor the weather accurately, people looked at the skies, watched how animals and plants behaved, and relied on signs and superstitions to forecast the weather. Indeed, some people still believe that, when cows lie down or a cat sneezes, it is going to rain. Nowadays, scientists who study the weather, called meteorologists, use many different methods to make their forecasts. Satellites monitor our weather and send information to computers at special processing stations. On the ground, weather stations all over the world record wind speeds and directions, temperature, clouds and air pressure.

24. It is clear from the passage that reasonably accurate weather forecasting ...
- A) *is of little importance to most people in the world.*  
 B) *is now available worldwide.*  
 C) *does not require much technological assistance.*  
 D) *is just one stage in an effort to control the climate.*
25. As is pointed out in the passage, before the coming of technology, ...
- A) *people weren't really interested in weather conditions.*  
 B) *several methods were used in an effort to forecast the weather.*  
 C) *the only way to learn about the weather was through the behaviour of plants and animals.*  
 D) *the methods used to forecast the weather are all now regarded as completely useless.*

26. According to the passage, it is now possible, with the aid of technology, to forecast the weather, but ...

- A) *it is still a very complex process.*  
 B) *much relevant material is never processed.*  
 C) *long-term forecasts are still far from accurate.*  
 D) *changing wind speeds can affect predictions.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Johannes Brahms is a German composer, pianist, and conductor. His works (27) ... four symphonies, songs and concertos for piano and for violin. He (28) ... and conducted his own works.

- 27.
- A) *includes* B) *include* C) *will include*  
 D) *are included*
- 28.
- A) *recognized* B) *attempted* C) *designed*  
 D) *performed*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

A forest is a thickly wooded area. Forests have a wide (29)... of plants and animals living among the trees. Forests that like cooler climates (30)... largely in the northern hemisphere, far north of the equator. Forest floors are shady places and it can be hard (31)... plants to grow.

- 29.
- A) *vary* B) *various* C) *variety*  
 D) *variable*
- 30.
- A) *find* B) *are found* C) *found*  
 D) *were found*

31.

- A) *for* B) *from* C) *of* D) *by*

Read the text. Then choose the correct answer to question 32-33

One chilly autumn morning in 1945, five thousand shoppers crowded the pavements outside Gimbels Department Store in New York City. The day before, Gimbels had taken out a full-page newspaper advertisement in the *New York Times*, announcing the sale of the first ballpoint pens in the United States. Within six hours, Gimbels had sold its entire stock of ten thousand ballpoints at \$12.50 each—approximately \$130 at today's prices.

In fact this “new” pen was not new after all, and was just the latest development in a long search for the best way to deliver ink to paper. In 1884 Lewis Waterman had patented the fountain pen, giving him the sole rights to manufacture it. This marked a significant leap forward in writing technology, but fountain pens soon became notorious for leaking. In 1888, a leather tanner named John Loud devised and patented the first “rolling-pointed marker pen” for marking leather. Loud's design contained a reservoir of ink in a cartridge and a rotating ball point that was constantly bathed on one side with ink.

Loud's pen was never manufactured, however, and over the next five decades, 350 additional patents were issued for similar ball-type pens, though none advanced beyond the design stage. Each had their own faults, but the major difficulty was the ink: if the ink was thin, the pens leaked, and if it was too thick, they clogged. Depending on the climate or air temperature, sometimes the pens would do both. Almost fifty years later, Ladislav and Georg Biro, two Hungarian brothers, **came up with** a solution to this problem. In 1935 Ladislav Biro was working as a journalist, editing a small newspaper. He became frustrated by the amount of time he wasted filling fountain pens with ink and cleaning up ink smudges. Ladislav and Georg set about making models of new pen designs and creating better inks to use in them. Ladislav observed the ink in newspaper printing dried rapidly, leaving the paper dry and smudge-free. He was determined to construct a pen using the same type of ink. However, the thicker ink would not flow from a regular pen nib so he had to develop a new type of point. Biro came up with the idea of fitting his

pen with a tiny ball bearing in its tip. As the pen moved along the paper, the ball bearing rotated and picked up ink from the ink cartridge which it delivered to the paper.

32. The problem with the ballpoint pens invented between 1888 and 1935 was that ...
- A) *they were affected by weather conditions*  
 B) *they cost a great deal of money to manufacture*  
 C) *they could not write on ordinary paper*  
 D) *the technology to manufacture them did not exist*
33. What does “**came up with**” in bold mean?
- A) *to suggest* B) *to move towards*  
 C) *to get rid of* D) *to reject*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deimos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?
- A) *Mars has two moons*
  - B) *It takes longer for Mars to circle the Sun than it takes Earth*
  - C) *Mars is larger than Earth*
  - D) *Martian soil is rocky*
35. Man-made canals were supposedly discovered by ...
- A) *Phobos*
  - B) *Schiaparelli*
  - C) *Martian*
  - D) *Viking I*
36. Mars has been nicknamed as ...
- A) *Deimos*
  - B) *Viking I*
  - C) *The Red Planet*
  - D) *Martian*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

## REPITISION TEST TOPSHIRUVCHILAR UCHUN

# SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000034**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1.  $|\log_{2013} x - 2| + |\log_{2013} x - 4| < 4$  tengsizlikni yeching.  
A)  $\{2013; 2013^5\}$   
B)  $(2013; 2013^5)$   
C)  $\emptyset$   
D)  $\{2013\}$
2.  $y = \sqrt{16 - x^2}$  funksiyaning grafigi bo'lgan egri chiziq uzunligini toping.  
A)  $8\pi$  B)  $4\pi$  C)  $6\pi$  D) *aniqlab bo'lmaydi*
3.  $\vec{a}(1; -1)$  va  $\vec{b}(-2; m)$  vektorlar kollinear.  $m$  ning nimaga tengligini toping.  
A) 2 B) -2 C) 1 D) -3
4. Uchburchak tomonlari 5, 6, 7 sm. Uning yuzasini ( $\text{sm}^2$ ) toping.  
A)  $5\sqrt{5}$  B) 8 C)  $6\sqrt{6}$  D) 6
5. Agar  $ABC$  o'tkirburchakli uchburchakda  $AB=0,7$ ;  $BC=0,9$ ;  $\sin B=0,8$  bo'lsa, uchinchi tomonning kvadratini toping.  
A) 0,544 B) 0,541 C) 0,543 D) 0,519
6.  $f(x) = \frac{1}{|x^2 + 2x + 1| + 2} + 1,5$  funksiyaning eng katta qiymatini toping.  
A) 0,5 B) 1,5 C) 2 D) 2,5
7.  $f(x) = x^2 + x - 1$  funksiya uchun  $f'(x) = 0$  bo'lsa,  $x$  ning qiymatini toping.  
A)  $-\frac{2}{3}$  B)  $\frac{1}{3}$  C)  $-\frac{3}{4}$  D)  $-\frac{1}{2}$
8. To'rtburchakli muntazam prizmagacha ichki chizilgan silindr yon sirtining prizma yon sirtiga nisbatini toping.  
A)  $\frac{\pi}{2}$  B) 4 C) 2 D)  $\frac{\pi}{4}$
9.  $2^{x+4} + 3 \cdot 2^{x-2} \geq 67$  tengsizlikni yeching.  
A)  $[3; \infty)$   
B)  $(-\infty; 2)$   
C)  $[2; \infty)$   
D)  $[4; \infty)$
10. Sotuvchi kilosi 1500 so'mdan 100 kg olma sotib oldi. 20 kg maydaroq olmalarni sotuvchi 1750 so'mdan, qolganlarini 2000 so'mdan sotdi. Bu tijoratda sotuvchi necha foiz foyda qilgan?  
A) 27 B) 25 C) 30 D) 35
11. Yuza 120  $\text{sm}^2$ , diagonali esa 17 sm bo'lgan to'g'ri to'rtburchakning tomonlarini ( $\text{sm}$ ) toping.  
A) 16; 12 B) 30; 4 C) 12; 10 D) 15; 8
12.  $\sqrt{x^2 + 11} - \sqrt{x^2 - 9} = 2$  tenglamani yeching. ( $x \in R$ )  
A) 3 B) -5; 5 C) -3 D) 5; 3
13.  $y = 2\cos^2 \frac{x}{2} - \text{tg}x \cdot \text{ctg}x$  funksiyaning qiymatlari to'plamini toping.  
A)  $[1; 3]$  B)  $[0; 3]$  C)  $(-1; 0) \cup (0; 1)$   
D)  $(1; 2) \cup (2; 3)$
14. Hosila uchun qaysi munosabatlar o'rinli?  
1)  $(\ln \sin x)' = \text{ctg}x$ ;  
2)  $\left(\cos \frac{1}{x}\right)' = -\frac{1}{x^2} \sin \frac{1}{x}$ ;  
3)  $(\log_4 5x)' = \frac{1}{5x \ln 4}$ ;  
4)  $(2^{\sqrt{x}})' = \frac{2^{\sqrt{x}} \ln 2}{2\sqrt{x}}$   
A) 3, 4 B) 1, 4 C) 1, 2 D) 1, 3
15.  $\left(\frac{1}{a} + \frac{1}{b} - \frac{2c}{ab}\right)(a + b + 2c)$  ifodani  $\frac{1}{a^2} + \frac{1}{b^2} + \frac{2}{ab} - \frac{4c^2}{a^2 b^2}$  soddalashtiring va uning son qiymatini toping.  $a=7,4$ ;  $b = \frac{5}{37}$ .  
A)  $\frac{1}{2}$  B)  $\frac{4}{5}$  C) 0 D) 1
16.  $x, y, z$  - butun sonlar bo'lib,  $\begin{cases} \frac{xy}{x-y} = -6 \\ \frac{yz}{y-z} = -\frac{15}{2} \\ \frac{xz}{x-z} = -\frac{10}{3} \end{cases}$  bo'lsa,  $x - y - z = ?$   
A) -6 B) 10 C) -8 D) 6
17. Ikkita doira radiuslari 1:2 nisbatda. Katta doira aylanasining uzunligi  $8\pi$ . Kichik doira yuzini toping.  
A)  $8\pi$  B)  $2\pi$  C)  $4\pi$  D)  $\pi$



18. To'g'ri burchakli  $ABC$  uchburchakda  $\angle A = 30^\circ$  bo'lib,  $AB=6$  sm li gipotenuzasini diametri qilib, doira chizildi. Hosil bo'lgan eng kichik segmentning yuzini toping.
- A)  $18\pi$  B)  $\frac{6\pi - 9\sqrt{3}}{4}$  C)  $36\pi$   
 D)  $\frac{12\pi - 9\sqrt{3}}{4}$
19. Tekislikdan  $h$  uzoqlikda joylashgan nuqtadan tekislikka o'tkazilgan va tekislik bilan  $30^\circ$  li burchak hosil qiladigan og'maning uzunligini toping.
- A)  $\sqrt{2}h$  B)  $2h$  C)  $1,5h$  D)  $\sqrt{3}h$
20.  $\left( \sqrt{m(1-m)} + \frac{\sqrt{m^3}}{\sqrt{1-m}} : \left( \frac{1}{1+\sqrt{m}} + \frac{\sqrt{m}}{1-m} \right) \right) : \sqrt{m(1-m)}$  ifodani soddalashtiring. ( $m \in (0; 1)$ )
- A)  $1-m$  B)  $\frac{1}{m}$  C)  $1+m$  D)  $1$
21.  $||x-4| - 7| > 5$  tengsizlikning eng kichik musbat va eng katta manfiy butun yechimlari ayirmasini toping.
- A)  $-12$  B)  $12$  C)  $-6$  D)  $6$
22.  $m$  dan katta bo'lmagan juft natural sonlarning yig'indisi  $x$ ,  $m$  dan katta bo'lmagan, lekin 10 dan katta bo'lgan juft sonlarning yig'indisi  $y$  hamda  $x+y=810$  bo'lsa,  $m$  ning barcha qiymatlari yig'indisini toping.
- A)  $83$  B)  $210$  C)  $420$  D)  $81$
23.  $\sqrt[3]{x^2} - 3\sqrt[3]{x} - 4 = 0$  tenglamaning katta va kichik ildizlari ayirmasini toping.
- A)  $68$  B)  $60$  C)  $65$  D)  $63$
24.  $\sqrt[3]{x+2} + \sqrt[3]{x+3} + \sqrt[3]{x+4} = 0$  tenglama ildizlarining yig'indisini toping.
- A)  $2$  B)  $-3$  C)  $1$  D)  $-5$
25.  $f(x) = \cos x + e^x$ ,  $F(x) = ?$
- A)  $-\cos x + e^x + c$  B)  $-\sin x + e^x + c$   
 C)  $\sin x + e^x + c$  D)  $\sin x - \frac{1}{x}e^x + c$
26. Kubga tashqi chizilgan sharning hajmi  $\frac{32}{3}\pi$  ga teng. Kubning diagonaliga tegishli bo'lmagan uchlaridan diagonalgacha bo'lgan masofani toping.
- A)  $\frac{4\sqrt{2}}{9}$   
 B)  $\frac{4\sqrt{2}}{\sqrt{3}}$   
 C)  $\frac{3\sqrt{3}}{8}$   
 D)  $\frac{3\sqrt{2}}{4}$
27.  $\sin^6\alpha + \cos^6\alpha + \frac{3}{4}\sin^2 2\alpha$  ni hisoblang.
- A)  $\cos^2\alpha$  B)  $-1$  C)  $1$  D)  $\sin^2\alpha$
28.  $x(x+1)(x-1)(x+2) = 24$  tenglamani yeching.
- A)  $x_1 = x_2 = 1$  B)  $x_1 = -1; x_2 = -2$   
 C)  $x_1 = 0; x_2 = 1$  D)  $x_1 = -3; x_2 = 2$
29.  $\frac{1}{2} + \frac{1}{24} + \frac{1}{48} + \frac{1}{80} + \frac{1}{120} + \frac{1}{168}$  ni hisoblang.
- A)  $\frac{33}{56}$  B)  $\frac{125}{333}$  C)  $\frac{15}{28}$  D)  $\frac{33}{76}$
30. Basseyn ikkita quvur bilan 7,5 soatda to'ldiriladi. Birinchi quvurning yolg'iz o'zi basseynni ikkinchi quvurning yolg'iz o'zi to'ldirganidan 8 soat tezroq to'ldiradi. Birinchi quvurning alohida o'zi basseynni necha soatda to'ldira oladi?
- A)  $16$  B)  $15$  C)  $15,5$  D)  $12$
31. 63 kilobayt axborotda nechta belgi bor?
- A)  $516096$  ta B)  $516098$  ta C)  $64512$  ta  
 D)  $64500$  ta
32. Agar  $A = \text{rost}$ ,  $B = \text{yolg'on}$ ,  $C = 5$ ,  $D = 6$  bo'lsa, quyidagilardan qaysi birining natijasi yolg'on bo'ladi?
- A)  $A \vee B \wedge (C = D)$   
 B)  $A \wedge B \vee (C > D)$   
 C)  $\neg A \vee B \vee (C < D)$   
 D)  $A \wedge \neg B \vee (C < D)$

33. Windows yo'lboshlovchisini ishga tushirish uchun Пуск menyusidagi qaysi bo'lim tanlanadi?  
A) Программы B) Документы C) Найти  
D) Настройка
34. Ma'lumotlar ombori undagi axborot shakliga ko'ra qanday turlarga ajratiladi?  
A) hujjatli va faktografik  
B) relyatsion va to'rtli C) matnli va grafik  
D) raqamli va analog
35. Kompyuter ekranida aks etgan holatni rasmga olish uchun qaysi klavishlardan foydalaniladi?  
A) Shift + Delete B) Ctrl + Alt + Delete  
C) Print Screen / Sys Rq D) Ctrl + F12
36. Paskalda quyidagi ifoda  $a=5$ ,  $b=15$ ,  $c=2$  bo'lsa qanday natija beradi?  
( $a+b \div c * 4$ ) mod 5 div 3  
A) 4 B) 1 C) 3 D) 2

### FIZIKA

1. Molekulalari konsentratsiyasi  $2 \cdot 10^{24} \text{ m}^{-3}$  ga teng bo'lgan idishdagi gazning bosimi  $3 \cdot 10^4 \text{ N/m}^2$  ga teng. Bitta molekulaning o'rtacha kinetik energiyasini (J) toping.  
A)  $2,75 \cdot 10^{-20}$  B)  $2,5 \cdot 10^{-20}$  C)  $3 \cdot 10^{-21}$   
D)  $2,25 \cdot 10^{-20}$
2. Og'irligi 100 N bo'lgan jismning zichligi  $500 \text{ kg/m}^3$  bo'lgan suyuqlikdagi og'irligi 60 N. Boshqa bir suyuqlikdagi og'irligi esa 80 N ga teng. Ikkinchi suyuqlikning zichligini ( $\text{kg/m}^3$ ) toping.  
A) 150 B) 125 C) 250 D) 1000
3. Massasi 8 kg bo'lgan snaryad diametri 100 mm bo'lgan to'p stvolidan 600 m/s tezlik bilan uchib chiqdi. Stvoldagi porox gazining o'rtacha bosimi 1 MPa. snaryadning stvoldagi harakat vaqtini (s) aniqlang.  
A) 0,61 B) 0,92 C) 0,55 D) 0,7
4.  $N = N_0 \cdot 2^{-t/T}$   
Radioaktiv parchalanish qonunida  $N$  nimani bildiradi?  
A) radioaktiv parchalanmagan yadrolar sonini  
B) majburiy parchalangan yadrolar sonini  
C) radioaktiv parchalangan yadrolar sonini  
D) tabiiy parchalangan yadrolar sonini

5. Berilgan inersial sanoq sistemasida jism massasining uning harakat tezligiga bog'liqligi qanday ifodalanadi?

$$A) m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$B) \Delta m = \frac{\Delta E}{c^2}$$

$$C) m = \rho V$$

$$D) m = \frac{2E_k}{v^2}$$

6. Ikki sharchaga bir xil  $2 \cdot 10^{-8} \text{ Kl}$  zaryad berilgan zaryadlar vakuumda  $10^{-3} \text{ N}$  kuch bilan ta'sirlashmoqda. Ular orasidagi masofani (sm) toping.  
A)  $\sqrt{6}$  B) 6 C) 12 D) 10
7. Chang'ichi  $0,2 \text{ m/s}^2$  tezlanish bilan harakatlanib, uzunligi 50 m bo'lgan qiyalikni 10 s da o'tdi. Uning qiyalik boshidagi tezligi (m/s) qanday bo'lgan?  
A) 3 B) 2 C) 4 D) 5
8. Gaz boshlangich 6 l hajmdan 4 l gacha izotermik siqilgan. Bunda uning bosimi  $2 \cdot 10^5 \text{ N/m}^2$  ga ortgan. Gazning boshlang'ich bosimi ( $\text{N/m}^2$ ) qanday?  
A)  $20 \cdot 10^5$  B)  $2 \cdot 10^5$  C)  $4 \cdot 10^5$  D)  $4 \cdot 10^6$
9. 200 V kuchlanishgacha zaryadlanib tok manbaidan ajratilgan  $10 \mu\text{F}$  sig'imli kondensator qoplamalari orasidan dielektrik singdiruvchanligi  $\epsilon=2,5$  bo'lgan dielektrikni tortib olish uchun qancha ish (J) bajarish kerak?  
A) 1,25 B) 0,3 C) 3 D) 5
10. Agar shishadan tayyorlangan qavariq linzaning fokus masofasi shu linzaning egrilik radiusiga teng bo'lsa, shishaning sindirish ko'rsatkichi nimaga teng?  
A) 2 B) 1,2 C) 1,5 D) 3
11. Foton energiyasi 3 marta oshsa uning to'liq impulsi va to'liq uzunligi necha marta ortadi?  
A) 1,5 va  $1/3$  marta B) 3 va  $1/3$  marta  
C) 3 va 1,5 marta D) 3 va 3 marta

12. 20 g massali o'q 600 m/s tezlik bilan devorga kelib urildi. Agar devorning 4 sm gacha kirib borgan bo'lsa, devor qarshilik kuchi bajargan ishini (kJ) toping. O'qning oxirgi tezligi nolga teng.  
A) 3,6 B) 72 C) 36 D) 7,2
13. 2,5 Tl induksiyali bir jinsli magnit maydon o'tkazgichdagi tok kuchi 0,5 A bo'lganda induksiya vektoriga  $30^\circ$  burchak ostida joylashgan 50 sm uzunlikdagi o'tkazgichga qanday kuch (N) bilan ta'sir qiladi?  
A) 0,3 B) 0,33 C) 0,31 D) 0,35
14. 5 kg massali yuk qiya tekislikdan 20 N kuch ta'sirida ko'tarildi. Qiya tekislikning uzunligi 10 m, balandligi 3 m. Qiya tekislikning foydali ish koeffitsienti (%) nimaga teng?  
A) 50 B) 75 C) 60 D) 90
15. Ma'lum tezlik bilan harakatlanadigan jismning kinetik energiyasi 50 MJ, impulsi 10 kJ·m/s bo'lsa, massasini (kg) toping.  
A) 1 B) 2 C) 0,5 D) 1,5
16. Birinchi o'tkazgichning uzunligi 2 m, ko'ndalang kesim yuzasi  $2 \text{ mm}^2$ , ikkinchi o'tkazgichning uzunligi 4 m, ko'ndalang kesim yuzasi  $1 \text{ mm}^2$ . Bu o'tkazgichlarning qarshiliklari  $R_1$  va  $R_2$  qanday munosabatda bo'ladi?  
A)  $R_2 = 2R_1$  B)  $R_2 = 4R_1$  C)  $R_1 = 4R_2$   
D)  $R_1 = R_2$
17. Tebranish konturining induktivligi  $0,01 \mu\text{H}$ , sig'imi 400 pF. Konturdagi xususiy tebranishlar davri (ns) qanday?  
A) 12,56 B) 2,00 C) 6,28 D) 4,00
18. Jism radiusi 2 m bo'lgan aylana bo'ylab 180 rad/min burchak tezlik bilan harakatlanmoqda. Agar uning massasi 6 kg bo'lsa, unga ta'sir qilayotgan markazga intilma kuchni (N) aniqlang.  
A) 27 B) 64 C) 108 D) 36
19. Chastotasi 5 MGs bo'lgan to'lqin suvga tushganida qanday chastotada (MGs) bo'ladi?  
A) 5 B) 6 C) 4 D) 3
20. 220 V kuchlanishli elektr tarmoqqa ulangan elektr lampochkadan 1 A tok o'tmoqda. Shu lampochkani 110 V kuchlanishli elektr tarmoqqa ulansa, undan qancha tok kuchi (A) o'tadi?  
A) 1 B) 0,5 C) 2 D) 3
21. Yuqoriga  $a$  tezlanish bilan ko'tarilayotgan havo sharidan  $t$  sekunddan so'ng bir buyum tushib ketdi. Bu buyum qancha vaqtda yerga tushadi?  
A)  $\frac{t}{g}(2a + \sqrt{a^2 - ga})$   
B)  $\frac{t}{g}(2a + \sqrt{a^2 + ga})$   
C)  $\frac{t}{g}(a + \sqrt{a^2 + ga})$   
D)  $\frac{t}{g}(a - \sqrt{a^2 + ga})$
22. Quyida ifodalangan qonun qanday nomlanadi?  
**Agar jism bir necha kuch ta'sirida harakatlanayotgan bo'lsa, har bir kuch boshqa kuchlar bilan birga yoki yakka o'zi ta'sir qilayotganidan qat'iy nazar jismga hamma vaqt bir xil tezlanish beradi.**  
A) Nyutonning II qonuni  
B) Inersiya qonuni  
C) Impulsning saqlanish qonuni  
D) Kuchlar ta'sirining mustaqillik qonuni
23. Elementlari ketma-ket ulangan zanjirning o'zgaruvchan tokka nisbatan to'liq qarshiligi  $\sqrt{R^2 + (\omega L - 1/\omega C)^2}$  ga teng. Bu zanjirning doimiy tokka nisbatan qarshiligi qanday?  
A)  $R$   
B)  $\sqrt{R^2 + (\omega C + 1/\omega L)^2}$   
C)  $\infty$   
D) 0
24. Agar elastik muhitda tarqalayotgan to'lqin muhit zarralari 140 marta tebranguncha, 70 m masofani bosib o'tsa, bu to'lqinning uzunligi (m) qancha?  
A) 2 B) 1 C) 0,5 D) 20
25. Yopiq idishga to'yingan bug' qamalgan bo'lib bosimi 10 kPa. Agar bosimni 2 marta oshirib, hajmini 2 marta kamaytirsak to'yingan suv bug'larining zichligi qanday o'zgaradi? Jarayon izotermik.  
A) o'zgarmaydi  
B) haroratning qandayligicha bog'liq  
C) 2 marta kamayadi  
D) 2 marta oshadi

26. Yerdan  $h$  balandlikda  $v$  tezlik bilan gorizontaal otilgan jism  $L_1$  masofaga tushsa yerdan  $4h$  balandlikda  $2v$  tezlik bilan gorizontaal otilgan jism necha  $L_2$  masofaga borib tushadi?  
A) 3 B) 2 C) 4 D) 1
27. Suyuqlikning idish devoriga bosim kuchi  $F$  idish tubiga bo'lgan bosim kuchiga teng bo'lishi uchun  $R$  radiusli silindrik idishga qanday balandlik  $H$  gacha suv qiyish kerak?  
A)  $R = H$  B)  $R = 4H$  C)  $R = H/2$   
D)  $R = 2H$
28. Metall o'tkazgichni qizdirsak, uning solishtirma elektr qarshiligi qanday o'zgaradi?  
A) kamayadi B) o'zgarmaydi  
C) avval ortib so'ngra kamayadi D) ortadi
29. Nima uchun izoxorik jarayonda gazning zichligi o'zgarmaydi?  
A) bosim o'zgargani uchun  
B) massa va hajm o'zgarmagani uchun  
C) temperatura o'zgargani uchun  
D) bosim temperaturaga to'g'ri proporsionalligi uchun
30. Qanday sharoitda sochuvchi linzaning optik kuchi musbat bo'la oladi?  $n_1$  - atrof muhitning optik zichligi,  $n_2$  - linza yasalgan moddaning optik zichligi.  
A)  $n_1 > n_2$   
B)  $n_1 = n_2$   
C)  $n_1 < n_2$   
D) sochuvchi linzaning optik zichligi musbat bo'la olmaydi
31. Ichki qarshiligi  $0,5 \Omega$  bo'lgan tok manbaiga  $3 \Omega$ li tashqi qarshilik ulanganda, tok manbayi qisqichlaridagi kuchlanish  $6 \text{ V}$  bo'lgan. Manbaning to'la quvvatini ( $W$ ) aniqlang.  
A) 14 B) 18 C) 6 D) 12
32. Bikrligi  $250 \text{ N/m}$  bo'lgan prujinaga bog'lab qo'yilganda  $16 \text{ s}$  ichida  $20$  marta tebradigan yukning massasini ( $\text{kg}$ ) toping.  $\pi^2=10$   
A) 1,6 B) 4 C) 16 D) 0,4
33.  $40 \text{ l } 10^\circ\text{C}$  li suvga  $20 \text{ l } 40^\circ\text{C}$  li suv aralastirildi. Aralashmaning haroratini ( $^\circ\text{C}$ ) toping.  
A) 22 B) 24 C) 20 D) 28
34.  $25 \text{ kg}$  toshko'mir batamom yonganda qancha issiqlik ( $J$ ) ajralib chiqadi?  $q=2,7 \cdot 10^7 \text{ J/kg}$   
A)  $6,5 \cdot 10^8$  B)  $6 \cdot 10^8$  C)  $5 \cdot 10^8$  D)  $6,75 \cdot 10^8$
35. Massasi  $11 \text{ t}$  bo'lgan trolleybus  $36 \text{ km/soat}$  tezlik bilan harakatlanmoqda. Agar kuchlanish  $550 \text{ V}$  va FIK  $80\%$  bo'lsa, dvigatel chulg'amidagi tok kuchini ( $A$ ) toping. Harakatlanishga qarshilik koeffitsiyenti  $0,02$  ga teng.  
A) 50 B) 25 C) 45 D) 35
36. Maydonining energiyasi  $2 \text{ J}$  bo'lishi uchun induktivligi  $1 \text{ H}$  bo'lgan drossel chulg'amidagi tok kuchi ( $A$ ) qancha bo'lishi kerak?  
A) 2 B) 4 C) 3 D) 1,5

### INGLIZ TILI

- Choose the answer which correctly complete the sentence.  
They were tired because they ... hard all morning.  
A) *had been studying* B) *studied*  
C) *had studied* D) *were studying*
- Choose the answer which correctly completes the sentence.  
I didn't see Diana at the party, so she ... have been there.  
A) *can't* B) *shouldn't* C) *oughtn't*  
D) *mustn't*
- Choose the answer which correctly complete the sentence.  
Jack left his family at ... early age to get a job in town.  
A) *an* B) *-* C) *a* D) *the*
- Choose the answer which correctly completes the sentence.  
She'll cook something delicious ... someone calls on her this evening.  
A) *in case* B) *in order* C) *because of*  
D) *so as*
- Choose the answer which correctly completes the sentence.  
The receptionist put me ... to the manager's secretary.  
A) *off* B) *through* C) *forward* D) *with*

6. Choose the answer which correctly complete the sentence.  
This car is the ... model and much better than the previous one.  
A) *latest* B) *last* C) *later* D) *latter*
7. Choose the answer which correctly completes the sentence.  
Even though a great deal of the lawn is open to the sun, there are ... of shade trees to make it comfortable.  
A) *none* B) *some* C) *plenty* D) *no*
8. Choose the answer which correctly complete the sentence.  
These library books are overdue so I ... pay a fine when I return them.  
A) *need* B) *can* C) *have to* D) *may*
9. Choose the answer which correctly complete the sentence.  
Helen is ... a busy person that she never feels bored.  
A) *as* B) *so* C) *such* D) *so as*
10. Choose the answer which correctly completes the sentence.  
Once he was skiing too fast down a mountain, when he crashed into ... tree.  
A) *a* B) *the* C) *-* D) *an*
11. Choose the answer which correctly completes the sentence.  
There was a conference in the Institute.  
A number of teachers ... there.  
A) *is sent* B) *are sent* C) *were sent*  
D) *be sent*
12. Choose the answer which correctly completes the sentence.  
"What time shall we arrive in Prague?" she asked.  
She asked what time ... arrive in Prague.  
A) *shall we* B) *would they* C) *they would*  
D) *we shall*
13. Choose the answer which correctly complete the sentence.  
- Hello. Can I speak to Mr. James, please?  
- I'm sorry. He isn't ... at the moment. Can I take a message?  
A) *inside* B) *away* C) *in* D) *out*
14. Choose the answer which correctly completes the sentence.  
Gustav Eiffel designed the Eiffel Tower ... he was a bridge builder.  
A) *then* B) *where* C) *what* D) *while*
15. Choose the answer which correctly completes the sentence.  
I'm starting a new job next week. I'm quite ... about it.  
A) *excitedly* B) *excited* C) *excite*  
D) *exciting*
16. Choose the answer which correctly completes the sentence.  
I daren't ... my boss for a rise just now.  
A) *to ask* B) *be asking* C) *asking* D) *ask*
17. Choose the answer which correctly completes the sentence.  
I wish I ... everything to you yesterday.  
A) *could have explained* B) *could explain*  
C) *have explained* D) *explained*
18. Choose the answer which correctly completes the sentence.  
It was strange at first, but I ... playing the bagpipes now.  
A) *use to* B) *used to* C) *would*  
D) *am used to*
19. Choose the answer which correctly completes the sentence.  
Your friend can borrow my ... camera for the weekend.  
A) *fathers-in-law* B) *father-in-law's*  
C) *father-in-law* D) *father's-in-law*
20. Choose the answer which correctly completes the sentence.  
The cause of car accident ... at present.  
A) *are being investigated* B) *is investigated*  
C) *is being investigated*  
D) *have been investigated*
21. Choose the answer which correctly completes the sentence.  
Most rocks contain several minerals, but limestone contains only one and...  
A) *so is marble* B) *so marble does*  
C) *marble is so* D) *so does marble*

22. Choose the answer which correctly complete the sentence.

While Dan was washing up the dishes the girls ... the kitchen.

- A) *was cleaned* B) *were cleaning*  
C) *cleaned* D) *were cleaned*

23. Choose the answer which correctly complete the sentence.

Nora, you look awfully tired. What ... all day?

- A) *have you done* B) *have you been doing*  
C) *are you doing* D) *do you do*

Read the text. Then choose the correct answer to question 24-26.

One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.

24. The passage tells us that the shrew ...

- A) *has a very short life span.*  
B) *is similar to a mouse in appearance*  
C) *is in the habit of eating every two hours.*  
D) *lives in dense forests.*

25. The passage states that shrews ...

- A) *eat each other when they can't find any food.*  
B) *eat rarely but in large amounts at a time.*  
C) *are the smallest living mammals.*  
D) *are found in huge numbers in Australia.*

26. From what is stated in the passage, we can infer that a shrewish woman is someone who ...

- A) *is noticeably smaller than the average.*  
B) *is very fond of velvet and fur.*  
C) *has tiny eyes and ears.*  
D) *easily gets annoyed.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Most whales are huge (27)... The largest whales are called blue whales. They can grow to 30 meter in length and can weigh 135,000 kilogram. Blue whales are (28)... larger than elephant and larger than any of the now extinct dinosaur. The heart of an adult blue whale is about the size of a compact car.

- 27.

- A) *creators* B) *create* C) *creatures*  
D) *creative*

- 28.

- A) *no* B) *some* C) *very* D) *much*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

In 900AD the cities of the Mayan civilization were still prosperous, but a hundred years later they (29)... A number of theories have been put (30)... to explain this. One theory is that the Mayan ruling class died out because rulers did not work and so became (31)..., and there was nobody to tell the formers what to do.

- 29.

- A) *abandoned* B) *have been abandoned*  
C) *had abandoned* D) *had been abandoned*

- 30.

- A) *forward* B) *through* C) *down* D) *at*

31.

- A) *healthy*   B) *health*   C) *unhealth*  
D) *unhealthy*

Read the text. Then choose the correct answer to question 32-33.

Lieutenant Zachary Mayo, a 20-year old sailor in the US navy woke up and couldn't get back to sleep because of hot and stuffy air. He got off his bunk quietly so as not to wake up his shipmates. He put his blue overalls on and left the cabin and went onto the deck of a huge aircraft carrier. It was two o'clock on a Friday morning. He breathed in fresh air and looked up at the stars in the sky. And then without thinking he leaned out too far and lost his footing. Before he knew it, he was in the water, watching the huge ship disappearing into the night. Nobody had seen him fall, and for nearly 2 days not one of the crew realized he was missing.

Mayo survived because at training camp two years before he had been taught how to make clothes into life jackets, so he took off his overalls and tied the arms and legs. Then he waved his "life jacket" over his head and filled it with air so that he could stay afloat.

32. Zachary Mayo left his cabin because ...

- A) *he wanted to admire the stars in the sky*  
B) *somebody woke him up*  
C) *he wanted to get some fresh air*  
D) *he suffered from insomnia*

33. How did Z. Mayo appear in the water?

- A) *to test his overalls if he could stay afloat*  
B) *lost his balance when he leaned out*  
C) *he wanted to have a swim*  
D) *his shipmates pushed him into the water*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *It takes longer for Mars to circle the Sun than it takes Earth*  
B) *Mars has two moons*  
C) *Martian soil is rocky*  
D) *Mars is larger than Earth*

35. Man-made canals were supposedly discovered by ...

- A) *Viking I*   B) *Martian*   C) *Phobos*  
D) *Schiaparelli*

36. Mars has been nicknamed as ...

- A) *Deimos*
- B) *Viking I*
- C) *The Red Planet*
- D) *Martian*



O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000035**

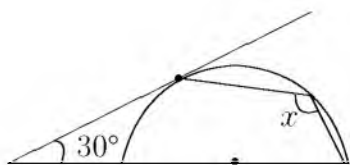
Toshkent – 2014

### MATEMATIKA (INFORMATIKA BILAN)

1. Sotuvchi kilosi 1500 soʻmdan 100 kg olma sotib oldi. 20 kg maydaroq olmalarni sotuvchi 1750 soʻmdan, qolganlarini 2000 soʻmdan sotdi. Bu tijoratda sotuvchi necha foiz foyda qilgan?  
A) 25 B) 35 C) 30 D) 27

2.  $ax = by = cz = 6$  va  $x + y + z = 36$  ekani maʼlum boʻlsa,  $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$  ni toping.  
A) 9 B) 5 C) 6 D) 12

3. Shaklda berilganlardan  $x$  ni toping.



- A)  $80^\circ$  B)  $120^\circ$  C)  $135^\circ$  D)  $105^\circ$

4.  $2012^{2011^{2010}}$  sonining oxirgi raqamini toping.  
A) 6 B) 8 C) 2 D) 4

5.  $\frac{712^2 - 289}{695}$  ni hisoblang.  
A) 695 B) 729 C) 765 D) 725

6.  $0,25 < \frac{y^2 - 0,25y + 1}{1 + y^2} < \frac{15}{16}$  tengsizlikning tub sonlardan iborat yechimlari nechta?  
A) 3 B) 2 C) 5 D) 4

7.  $\sqrt{5x-1} + \frac{6}{\sqrt{5x-1}} = \sqrt{5x+15}$  tenglamaning katta ildizi  $m$  va ildizlarining soni  $n$  boʻlsa,  $m + n$  ni toping.  
A) 6 B) 3 C) 4 D) 8

8. Agar arifmetik progressiyada  $S_{13} = 52$  boʻlsa,  $a_7$  ni toping.  
A) 4 B) 8 C) 5 D) 3

9.  $f\left(\frac{3x-1}{x+2}\right) = \frac{x+1}{x-1}$  boʻlsa,  $f(x)$  ni toping.  
A)  $\frac{3x-1}{x+2}$  B)  $\frac{x+4}{3x-2}$  C)  $\frac{2x+1}{3-x}$   
D)  $\frac{x+1}{x-1}$

10.  $2^{x+4} + 3 \cdot 2^{x-2} \geq 67$  tengsizlikni yeching.

- A)  $(-\infty; 2)$   
B)  $[3; \infty)$   
C)  $[4; \infty)$   
D)  $[2; \infty)$

11. Balandligi asosining diametriga teng silindrning yon sirti  $16\pi$  ga teng. Silindr asosining diametrini toping.

- A) 1 B) 8 C) 2 D) 4

12.  $\sin x = \cos 2x$  tenglamani yeching.

- A)  $\frac{\pi}{6} + \frac{2\pi k}{3}, k \in Z$   
B)  $\frac{\pi}{6} + \frac{\pi k}{3}, k \in Z$   
C)  $\frac{2\pi}{3} + \frac{\pi k}{3}, k \in Z$   
D)  $\frac{\pi}{3} + \frac{2\pi k}{3}, k \in Z$

13.  $\int_0^2 (x^2 + 1) dx$  ni hisoblang.

- A)  $4\frac{5}{6}$  B)  $4\frac{4}{5}$  C)  $4\frac{2}{3}$  D)  $4\frac{3}{4}$

14. Cheksiz kamayuvchi ishorasi almashinuvchi geometrik progressiyada ketma-ket kelgan uchta hadning yigʻindisi -21 ga, koʻpaytmasi 729 ga teng boʻlsa, shu sonlarni toping.

- A) -3; 9; -27 B) 27; -9; 3 C) -27; 9; -3  
D) -28; 14; -7

15. Kubning sirti  $294 \text{ sm}^2$  ga teng. Uning barcha qirralari yigʻindisini (sm) toping.

- A) 147 B) 98 C) 84 D) 117

16. Toʻgʻri burchakli trapetsiyaning diagonalini uning yon tomoniga teng. Agar bu trapetsiyaning balandligi 2 ga, yon tomoni esa 4 ga teng boʻlsa, uning oʻrta chizigʻi uzunligini toping.

- A)  $6\sqrt{2}$  B)  $3\sqrt{3}$  C)  $3\sqrt{2}$  D)  $5\sqrt{3}$

17.  $XOY$  uchburchakda  $\angle XOY = 90^\circ$ .  $M$  va  $N$  nuqtalar mos ravishda  $OX$  va  $OY$  tomonlarning oʻrtalari. Agar  $XN=19$  va  $YM=22$  boʻlsa,  $XY$  ni toping.

- A) 26 B) 28 C) 14 D) 13

18. Aylananing uzunligi shu aylananing  $40^\circ$  li yoyi uzunligidan necha foiz ko'p?  
A) 900 B) 700 C) 800 D) 600
19.  $x, y$  butun sonlar uchun  $-6 \leq x \leq 8$ ,  
 $-9 \leq y \leq 12$  va  $x + y \neq 0$  bo'lsa,  $\frac{x-y}{x+y}$  ning eng katta qiymatini toping.  
A) 17 B) 19 C) 32 D) 24
20.  $\left( \sqrt{m(1-m)} + \frac{\sqrt{m^3}}{\sqrt{1-m}} : \left( \frac{1}{1+\sqrt{m}} + \frac{\sqrt{m}}{1-m} \right) \right) :$   
 $\sqrt{m(1-m)}$  ifodani soddalashtiring.  
( $m \in (0; 1)$ )  
A) 1 B)  $1-m$  C)  $1+m$  D)  $\frac{1}{m}$
21.  $\vec{a}(1; -2; 2)$  va  $\vec{b}(2; -2; -1)$  vektorlar berilgan bo'lsa,  $2\vec{a}^2 - 4(\vec{a}\vec{b}) + 5\vec{b}^2$  ifodaning qiymatni toping.  
A) 46 B) 45 C) 44 D) 47
22. Agar  $ABC$  o'tkirburchakli uchburchakda  $AB=0,7$ ;  $BC=0,9$ ;  $\sin B=0,8$  bo'lsa, uchinchi tomonning kvadratini toping.  
A) 0,519 B) 0,543 C) 0,541 D) 0,544
23.  $a > 2$  da  $||x+1| - 2| = a$  tenglama nechta yechimga ega?  
A) 2 B) 3 C) *ildizga ega emas* D) 4
24. Umumiy bahosi 225 dinor bo'lgan ikki xil qimmatbaho mo'ynali teri xalqaro bozorda 40% foydasi bilan sotildi. Agar birinchi xil teridan 25%, ikkinchisidan 50% foyda qilingan bo'lsa, har bir terining bahosi necha dinor bo'lgan?  
A) 80; 145 B) 200; 25 C) 100; 125 D) 90; 135
25.  $|\log_{2013} x - 2| + |\log_{2013} x - 4| < 4$  tengsizlikni yeching.  
A)  $\{2013; 2013^5\}$   
B)  $(2013; 2013^5)$   
C)  $\emptyset$   
D)  $\{2013\}$
26.  $f(x) = x^2 + x - 1$  funksiya uchun  $f'(x) = 0$  bo'lsa,  $x$  ning qiymatini toping.  
A)  $-\frac{3}{4}$  B)  $-\frac{2}{3}$  C)  $-\frac{1}{2}$  D)  $\frac{1}{3}$
27. A nuqta ikki yoqli to'g'ri burchakning yoqlaridan 6 va 8 ga teng uzoqlikda yotsa, shu nuqtadan ikki yoqli burchakning qirrasigacha bo'lgan masofani toping.  
A) 10 B) 8 C) 9 D) 12
28. Qirralari 6 ga teng bo'lgan kubga ichki chizilgan sharning hajmini toping.  
A)  $108\pi$  B)  $36\pi$  C)  $27\pi$  D)  $72\pi$
29.  $x(x+1)(x-1)(x+2) = 24$  tenglamani yeching.  
A)  $x_1 = -1; x_2 = -2$  B)  $x_1 = x_2 = 1$   
C)  $x_1 = -3; x_2 = 2$  D)  $x_1 = 0; x_2 = 1$
30. Muntazam ko'pburchakning tomoni  $a$  ga, unga tashqi chizilgan aylana radiusi esa  $R$  ga teng bo'lsa, ichki chizilgan aylana radiusini toping.  
A)  $\frac{2aR}{\sqrt{4R^2 + a^2}}$   
B)  $\frac{2aR}{\sqrt{4R^2 - a^2}}$   
C)  $\sqrt{R^2 - \frac{a^2}{4}}$   
D)  $\sqrt{R^2 + \frac{a^2}{4}}$
31. Kodlashning Morze usuli qanday usulga misol bo'ladi?  
A) *Notekis kodlash usulu*  
B) *Tekis kodlash usuli*  
C) *Tartib raqamlari yordamida kodlash usuli*  
D) *Alifboni surish usuli*
32. Hisoblang va o'tkazishni bajaring:  
 $27_{10} + 111_2 \rightarrow x_2$   
A)  $100010_2$  B)  $100011_2$  C)  $100110_2$   
D)  $100111_2$
33. Windows yo'l boshlovchisini ishga tushirish uchun Пуск menyusidagi qaysi bo'lim tanlanadi?  
A) *Программы* B) *Документы* C) *Найти*  
D) *Настройка*
34. Ma'lumotlar ombori undagi axborot shakliga ko'ra qanday turlarga ajratiladi?  
A) *hujjatli va faktografik*  
B) *relyatsion va to'rli* C) *matnli va grafik*  
D) *raqamli va analog*

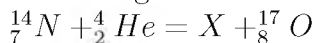
35. Kompyuter ekranida aks etgan holatni rasimga olish uchun qaysi klavishlardan foydalaniladi?  
 A) *Shift + Delete* B) *Ctrl + Alt + Delete*  
 C) *Print Screen / Sys Rq* D) *Ctrl + F12*
36. Paskal dasturi lavhasidagi write protsedurasi necha marta bajariladi?  
 for i:=1 to 3 do for j:=0 to 3 do write (i+j);  
 A) 1 marta B) 3 marta C) 12 marta  
 D) 9 marta

### FIZIKA

1. Yukni qiyligi  $30^\circ$  bo'lgan qiya tekislik bo'ylab 100 m masofaga tortib chiqarishda 20 kJ ish bajarilgan bo'lsa, qiya tekislikni FIKi (%) qanday?  
 A) 55 B) 75 C) 25 D) 50
2. Quvvatning SI dagi o'lchov birligini belgilang.  
 A) *Paskal* B) *Vatt* C) *Volt* D) *Nyuton*
3. Alfa zarra ( $m=6,65 \cdot 10^{-27}$  kg) elektr maydonida  $6,4 \cdot 10^{11}$  m/s<sup>2</sup> tezlanish bilan harakatlanishi uchun, elektr maydon kuchlanganligi qanday bo'lishi (kV/m) kerak?  
 A) 13,3 B) 4,26 C) 26,6 D) 7,87
4. Agar ionlagichning ishlashini o'zgartirmay turib plastinkalar yaqinlashtirilsa, to'yinish tokining kuchi qanday o'zgaradi?  
 A) *ortishi ham, kamayishi ham mumkin*  
 B) *o'zgarmaydi*  
 C) *kamayadi*  
 D) *ortadi*
5. Qarshiligi  $0,5 \omega$  bo'lgan o'tkazgichdan yasalgan yopiq kontur bilan chegaralangan sirtidan o'tuvchi magnit oqimi 0,2 mVb dan 1 mVb gacha tekis ortdi. O'tkazgichning kesimidan qancha zaryad (mKl) o'tgan?  
 A) 2,4 B) 3,2 C) 1,8 D) 1,6
6. Ichki yonuv dvigatelining nechanchi taktida ish bajariladi?  
 A) *ikkinchi* B) *uchinchi* C) *birinchi*  
 D) *to'rtinchi*
7. Marmar plitaning havodagi og'irligi 405 N. Uni suvda ushlab turish uchun qanday kuch (N) kerak? Marmarning zichligi  $2,7 \text{ g/sm}^3$ ,  $g=10 \text{ m/s}^2$   
 A) 150 B) 255 C) 405 D) 555

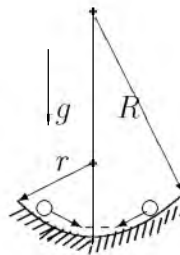
8. Agar prujinani 0,01 m siqish uchun 10 N kuch kerak bo'lsa 0,08 m ga siqish uchun ketgan kuchning ishini (J) toping.  
 A) 6,4 B) 0,8 C) 3,2 D) 1,6
9. Yerdan  $h$  balandlikda  $v$  tezlik bilan gorizontal otilgan jism  $L_1$  masofaga tushsa yerdan  $4h$  balandlikda  $2v$  tezlik bilan gorizontal otilgan jism necha  $L_2$  masofaga borib tushadi?  
 A) 1 B) 3 C) 2 D) 4
10. Suyuqlikning idish devoriga bosim kuchi  $F$  idish tubiga bo'lgan bosim kuchiga teng bo'lishi uchun  $R$  radiusli silindrik idishga qanday balandlik  $H$  gacha suv qiyish kerak?  
 A)  $R = H$  B)  $R = 4H$  C)  $R = H/2$   
 D)  $R = 2H$
11. O'zgarmas tok manbaiga avval  $9 \Omega$  qarshilik so'ngra  $4 \Omega$  qarshilik ulandi. Har ikkala holda birday vaqt ichida qarshiliklarda bir xil miqdorda issiqlik ajraladi. Manbaning ichki qarshiligini ( $\Omega$ ) aniqlang.  
 A)  $\sqrt{6}$  B) 3 C) 36 D) 6
12. Botiq ko'zgi yordamida hosil qilingan tasvir predmetning o'zidan 2 marta katta, tasvir va predmet orasidagi masofa 18 sm, ko'zguning egrilik radiusini (sm) toping.  
 A) 24 B) 12 C) 0,24 D) 8
13. Massasi 60 kg bo'lgan sirk artisti tortib qo'yilgan to'rga 10 m balandlikdan sakramoqda. Agar to'r 1 m egilsa, artist qanday o'rtacha kuch (N) bilan bosadi?  
 A)  $12 \cdot 10^3$  B)  $1,2 \cdot 10^4$  C)  $0,6 \cdot 10^3$   
 D)  $6,6 \cdot 10^3$
14. Chastotasi 5 MGs bo'lgan to'lqin suvga tushganida qanday chastotada (MGs) bo'ladi?  
 A) 6 B) 3 C) 5 D) 4
15. Sig'imi 20 l bo'lgan ballondagi 2 kg massali havoning  $-13^\circ\text{C}$  haroratdagi bosimi (MPa) qancha? Havoning molyar massasi 29 g/mol.  
 A) 7 B) 10 C) 74,5 D) 7,45
16.  $16^\circ\text{C}$  temperaturada  $4 \text{ m}^3$  havoda 40 g suv bug'i bor. Nisbiy namlikni (%) toping.  
 $\rho_{16^\circ\text{C}}=13,6 \text{ g/m}^3$   
 A) 85 B) 34 C) 74 D) 21

17. Quyidagi yadro reaksiyasida qanday  $X$  zarra hosil bo'lgan?



- A) vodorod yadrosi    B) proton  
C) geliy yadrosi    D) neytron
18. Konturdagi induktivlikni 2 marta kamaytirsak, sig'imi esa 8 marta orttirsak, unda erkin tebranish chastotasi qanday o'zgaradi?  
A) 4 marta ortadi    B) 4 marta kamayadi  
C) 2 marta kamayadi    D) 2 marta ortadi
19. 2 jism  $t$  vaqt oralig'i bilan, bir xil  $v_0$  boshlang'ich tezlik bilan yuqoriga vertikal tik otildi. 2-jism 1-jismga nisbatan qanday tezlik bilan harakatlanadi?  
A)  $v_0 - gt$     B)  $gt - v_0$     C)  $v_0/g + t$     D)  $gt$
20. Qarshiliklari  $5\text{ k}\Omega$ ,  $20\text{ k}\Omega$  va  $4\text{ k}\Omega$  ga teng bo'lgan rezistorlar o'zaro parallel ulanib, so'ngra elektr tarmog'iga ulandi. Agar ikkinchi rezistordagi tok kuchi  $4\text{ mA}$  ga teng bo'lgan bo'lsa, tarmoqdagi tok kuchini (mA) toping.  
A) 12    B) 36    C) 24    D) 40
21. Issiqlik mashinasi sovutgichining harorati  $200\text{ K}$  ga, isitgichiniki esa  $400\text{ K}$  ga teng. Agar isitgichning harorati 2 marta ortsa, uning maksimal FIK necha foizga o'zgaradi?  
A) 25% ga ortadi    B) 50% ga kamayadi  
C) 25% ga kamayadi    D) 50% ga ortadi
22. Ishlab chiqarilgan o'zgaruvchan elektr toki kuchlanishining ta'sir qiymati  $220\text{ V}$  ga teng bo'lsa, uning maksimal qiymatini (V) toping.  
A) 330    B) 310    C) 320    D) 300

23. Sharcha nov ichida tebrama sirg'anmoqda. Novni bir yoni  $r$  egrilikka, ikkinchi yoni  $R$  egrilikka ega. Sharchani tebranish davrini aniqlang.



- A)  $\pi\sqrt{\frac{r+R}{g}}$   
B)  $2\pi\sqrt{\frac{rR}{g}}$   
C)  $2\pi\sqrt{\frac{r^2+R^2}{g}}$   
D)  $\frac{\pi}{\sqrt{g}}(\sqrt{r} + \sqrt{R})$
24. Yorug'likka nisbatan shaffof moddadan yasalgan va qavariqlik radiusi  $40\text{ sm}$  bo'lgan bir tomonlama qavariq linzaning optik kuchi  $+2\text{ dptr}$ . Linza tayyorlangan moddaning sindirish ko'rsatkichi qanday?  
A) 1,13    B) 1,5    C) 1,8    D) 1,3
25. Ballonda  $20\text{ mol}$  gaz bo'lsa, undagi molekularlar sonini toping.  
A)  $1,2 \cdot 10^{24}$     B)  $1,2 \cdot 10^{25}$     C)  $12 \cdot 10^{25}$   
D)  $12 \cdot 10^{24}$
26. Yerni radiusi  $6380\text{ km}$  bo'lgan shar deb hisoblab,  $1\text{ kg}$  massali jism vaznining jismni qutbdan ekvatorga ko'chirilgandagi o'zgarishini (N) aniqlang.  
A) 0,34    B) -0,26    C) -0,034    D) -0,043
27. Elektr choynagi  $220\text{ V}$  kuchlanishga ulangan holda  $3,2\text{ A}$  tok iste'mol qilib  $1\text{ l}$  suvni  $12\text{ minutda}$  qaynatdi. Suvning boshlang'ich harorati  $20^\circ\text{C}$  bo'lsa, FIKni (%) toping.  
$$c_{suv} = 4200 \frac{\text{J}}{\text{kg} \cdot ^\circ\text{C}}$$
  
A) 71    B) 84    C) 66    D) 98
28. Energiyasi  $6 \cdot 10^{-19}\text{ J}$  ga teng bo'lgan fotonning impulsi ( $\text{kg} \cdot \text{m/s}$ ) qancha?  $c = 3 \cdot 10^8\text{ m/s}$   
A)  $0,2 \cdot 10^{-27}$     B)  $2 \cdot 10^{-28}$     C)  $0,2 \cdot 10^{-28}$   
D)  $2 \cdot 10^{-27}$

29. Tebranish konturi sig'imi 400 pF bo'lgan kondensatordan va induktivligi 10 mGn bo'lgan g'altakdan iborat. Kuchlanish amplitudasi 500 V bo'lsa, tok kuchi (mA) amplitudasini toping.  
A) 0,01 B) 100 C) 10 D) 0,1
30. Eynshteynning massa bilan energiyaning o'zaro bog'liqlik qonunini ifodalaydigan mashhur formulasini ko'rsating.  
A)  $E_k = \frac{mv^2}{2}$   
B)  $E = IUt$   
C)  $E = mc^2$   
D)  $E = mgh$
31. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 10- sekundda bosib o'tgan yo'li 5- sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
A) 4 B) 19/5 C) 19/7 D) 19/9
32. Qarshiligi 5  $\Omega$  bo'lgan o'tkazgichning ko'ndalang kesmidan 1,5 min davomida 45 C zaryad miqdori o'tdi. Shu o'tkazgichning uchlaridagi kuchlanishni (V) toping.  
A) 2,5 B) 2 C) 5 D) 1
33. Loshmida sonini belgilang.  
A)  $2,3 \cdot 10^{25} m^{-1}$  B)  $2,3 \cdot 10^{25} m^{-3}$   
C)  $2,7 \cdot 10^{25} m^{-1}$  D)  $2,7 \cdot 10^{25} m^{-3}$
34. Jismning impulsi 8 kg·m/s, kinetik energiyasi esa 16 J. Jismning tezligi (m/s) va massasini (kg) toping.  
A) 4; 4 B) 2; 2 C) 4; 2 D) 2; 4
35. 100 V va 50 V kuchlanishgacha zaryadlangan 2  $\mu F$  va 0,5  $\mu F$  sig'imli kondensatorlarni bir xil ishorali qoplamalari bilan o'zaro ulanganda issiqlikka aylangan elektr energiyasi miqdorini (J) aniqlang.  
A)  $0,5 \cdot 10^{-4}$  B)  $25 \cdot 10^{-4}$  C)  $2,5 \cdot 10^{-4}$   
D)  $5 \cdot 10^{-4}$
36. Markazga intilma tezlanish ...  
A) aylanish davri bog'liq emas  
B) aylanish davrida teskari proporsional  
C) aylanish davrining kvadratiga teskari proporsional  
D) aylanish davri ortishi bilan ortadi

## INGLIZ TILI

1. Choose the answer which correctly completes the sentence.  
You should contact ... Mr. Abdullayev and clear up all the details.  
A) - B) for C) with D) to
2. Choose the answer which correctly completes the sentence.  
We'd like to get our photo ... by a professional photographer.  
A) taken B) to take C) took D) taking
3. Choose the answer which correctly completes the sentence.  
If we lived in the country, we ... a lot of animals.  
A) had got B) will have C) had  
D) would have
4. Choose the answer which correctly complete the sentence.  
There was a long line in front of the theatre. We ... wait almost an hour to buy our tickets.  
A) had to B) must C) need D) were able
5. Choose the answer which correctly completes the sentence.  
People use the ski slopes at their own risk, and we cannot be held responsible for any ... injuries.  
A) results B) resulting C) result  
D) being result
6. Choose the answer which correctly completes the sentence.  
There was a conference in the Institute. A number of teachers ... there.  
A) are sent B) is sent C) were sent  
D) be sent
7. Choose the answer which correctly completes the sentence.  
She was lucky enough to get tickets for the first ... of the hit musical "Cats".  
A) to perform B) perform C) performance  
D) performed

8. Choose the answer which correctly completes the sentence.  
Without opening the letter she knew ... it would contain.  
A) *when* B) *what* C) *that* D) *which*
9. Choose the answer which correctly completes the sentence.  
That is not ... Stephen Frazer that I went to school with.  
A) *these* B) *the* C) *a* D) *-*
10. Choose the answer which correctly complete the sentence.  
The announcement says that ... who has lost his credit card must declare about it immediately.  
A) *someone* B) *nobody* C) *some*  
D) *anyone*
11. Choose the answer which correctly complete the sentence.  
I am fond of ... for walks in bad weather.  
A) *have gone* B) *going* C) *went* D) *to go*
12. Choose the answer which correctly completes the sentence.  
A football match lasts ... 90 minutes.  
A) *for* B) *until* C) *as soon as* D) *while*
13. Choose the answer which correctly completes the sentence.  
You can't go on holiday without ... money.  
A) *many* B) *no* C) *any* D) *some*
14. Choose the answer which correctly complete the sentence.  
As usual, he woke up late and had ... big breakfast.  
A) *-* B) *an* C) *the* D) *a*
15. Choose the answer which correctly completes the sentence.  
That theatre ... to close down soon.  
A) *thinks* B) *thought* C) *is thought*  
D) *is thinking*
16. Choose the answer which correctly complete the sentence.  
On Saturday, we ... in this house for a year.  
A) *will have been living* B) *live*  
C) *are living* D) *will be living*
17. Choose the answer which correctly completes the sentence.  
The last ice age ... have ended over 10,000 years ago, but from a historical point of view it was a relatively recent event.  
A) *was to* B) *could* C) *may* D) *should*
18. Choose the answer which correctly completes the sentence.  
The play was a great success. I wish you ... it together with us.  
A) *had seen* B) *will see* C) *were seen*  
D) *saw*
19. Choose the answer which correctly complete the sentence.  
The peace talks are likely ... several weeks.  
A) *lasted* B) *last* C) *lasting* D) *to last*
20. Choose the answer which correctly completes the sentence.  
He's talked about it many times. Any ... discussion is useless.  
A) *far* B) *further* C) *farthest* D) *furthest*
21. Choose the answer which correctly completes the sentence.  
They asked me, "Where has she gone?"  
I wonder where ...  
A) *she has gone* B) *has she gone*  
C) *had she gone* D) *she had gone*
22. Choose the answer which correctly completes the sentence.  
We had to walk home in the rain because Jimmy ... his car keys.  
A) *had lost* B) *was losing* C) *has lost*  
D) *lost*

23. Choose the answer which correctly complete the sentence.

I hate you ... about your duties.

- A) *forget* B) *forgot* C) *to have forgotten*  
D) *to forget*

Read the text. Then choose the correct answer to question 24-26.

When the first cars hit British roads in the late 19th century, they had an unusual safety feature. Every "horseless carriage" was guided by a man walking in front waving a red flag to warn other road users of the vehicle's approach. These early precautions, known as the "red flag laws", seem laughable now. However, future generations may look at current safety measures in much the same way. In the US state of Nevada, the government has begun to draft a set of regulations that will allow self-driving vehicles on its roads. These cars will have technological advantages such as cameras that determine exactly where other cars are and how fast they are moving. Promoters of the self-driving cars believe they will save time and fuel, and reduce traffic jams. If these cars become a reality, there may be a dramatic decrease in human drivers on the roads. People who still want the pleasure of driving themselves will someday have to warn other road users that they are engaging in such a dangerous activity. People then might consider reintroducing the red flags.

24. The author of the passage thinks that ...

- A) *precautions taken by the British were not as effective as those of the Nevada government.*  
B) *current technology is insufficient to meet safety needs on today's roads.*  
C) *many cars will not be driven by humans when unmanned cars come into existence.*  
D) *road users rely heavily on self-driving cars due to their technological advantages.*

25. It can be understood from the passage that ...

- A) *the designs of self-driving cars will be more attractive than current ones.*  
B) *we need to build special roads for self-driving cars.*  
C) *promoters of the self-driving cars believe these cars will have several benefits.*  
D) *the technical features of self-driving cars will make them expensive at first.*

26. It is inferred in the passage that ...

- A) *a red flag was generally used to signal the approach of a pedestrian.*  
B) *the Nevada government was inspired by the "red flag laws" while drafting regulations for self-driving cars.*  
C) *driving a car yourself may be considered dangerous in the future.*  
D) *cars were often used to carry equipment when they were first introduced to British roads in the 19th century.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Most whales are huge (27)... The largest whales are called blue whales. They can grow to 30 meter in length and can weigh 135,000 kilogram. Blue whales are (28)... larger than elephant and larger than any of the now extinct dinosaur. The heart of an adult blue whale is about the size of a compact car.

- 27.

- A) *create* B) *creatures* C) *creative*  
D) *creators*

- 28.

- A) *no* B) *much* C) *very* D) *some*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

A forest is a thickly wooded area. Forests have a wide (29)... of plants and animals living among the trees. Forests that like cooler climates (30)... largely in the northern hemisphere, far north of the equator. Forest floors are shady places and it can be hard (31)... plants to grow.

- 29.

- A) *variety* B) *various* C) *variable*  
D) *vary*

- 30.

- A) *found* B) *are found* C) *were found*  
D) *find*



31.

- A) *of*   B) *for*   C) *by*   D) *from*

Read the text. Then choose the correct answer to question 32-33.

On the day of my first piano concert, I became more and more nervous. To help me calm down, my piano teacher told me to place several cabbages in the room where I practiced. I was so eager to get over my nerves that I was willing to try anything. For the next few hours, I played to an audience of cabbages. When the time of the concert came, I was still terribly nervous. My hands felt like ice.

When I finally walked across the stage, I looked out into the dark audience, but I couldn't see anyone. I tried to imagine that all the people sitting in the hall just as well might be cabbages.

As I sat down to play, my hands relaxed and I played all my pieces without a mistake. The concert was a success.

32. The pianist stopped feeling nervous. . .

- A) *because he had practiced a lot*  
 B) *as soon as the concert was over*  
 C) *when the audience began to applaud*  
 D) *when he found he couldn't see the audience*

33. On the day of the concert the teacher . . .

- A) *advised him to eat a little cabbage*  
 B) *couldn't think of a way helping the pianist to stay calm*  
 C) *felt nearly as nervous as the pianist*  
 D) *advised him to put cabbages in the room where he practiced*

Read the text. Then choose the correct answer to question 34-36.

In 1971 the Great Persian Empire celebrated the 1500 th anniversary of its founding.

Its founder was Cyrus the Great, who proclaimed himself the King of the Kings. His son Cambyses succeeded his throne, conquering Egypt and expanding the empire.

Darius I followed Cambyses and was probably the most famous of this long line of kings. Under his rule, the empire stretched as far as India.

Governors were placed in charge of the provinces. Extensive systems of roads and waterways improved communication throughout the kingdom. He was one of a few ancient rulers who permitted his subjects to worship as they wished. The magnificent city of Persepolis, founded under his direction in 518 B.C. was a ceremonial center.

34. Who is considered the creator of the Persian Empire?

- A) *Combyses*   B) *Cyrus*   C) *Darius I*  
 D) *Persepolis*

35. Who was the predecessor of Cambyses?

- A) *Egypt*   B) *Cyrus*   C) *Persepolis*  
 D) *Darius I*

36. Who were responsible for the provinces?

- A) *the King*   B) *the governors*  
 C) *the Egyptians*   D) *the subjects*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

**REPITISION TEST TOPSHIRUVCHILAR UCHUN**

## **SAVOLLAR KITOBI**

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### **ABITURIYENT DIQQATIGA!**

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### **FANLAR:**

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000036**

Toshkent – 2014

### MATEMATIKA (INFORMATIKA BILAN)

1. Silindrga muntazam uchburchakli prizma ichki chizilgan, prizмага esa silindr ichki chizilgan bo'lsa, katta silindr hajmi kichik silindr hajmidan necha marta katta bo'ladi?

A) 6 B) 4 C) 3 D) 2

2.  $\vec{a}(1; -1)$  va  $\vec{b}(-2; m)$  vektorlar kollinear.  $m$  ning nimaga tengligini toping.

A) -2 B) 2 C) 1 D) -3

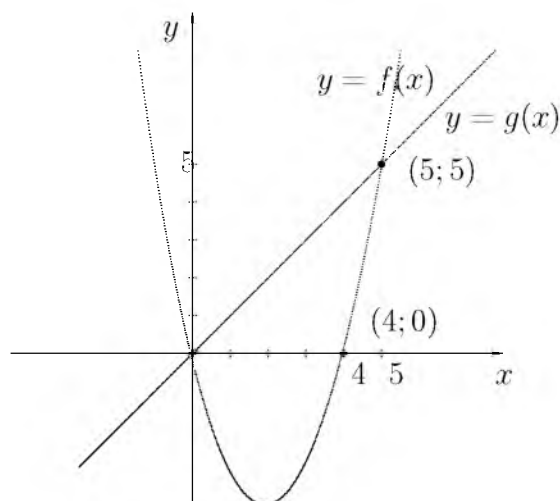
3.  $A$  nuqta ikki yoqli to'g'ri burchakning yoqlaridan 6 va 8 ga teng uzoqlikda yotsa, shu nuqtadan ikki yoqli burchakning qirrasigacha bo'lgan masofani toping.

A) 12 B) 9 C) 8 D) 10

4. Barcha ikki xonali sonlar ko'paytmasidan tashkil topgan ko'paytmada 7 sonining eng katta darajasini aniqlang.

A) 16 B) 14 C) 15 D) 13

5. Quyidagi chizmaga asoslanib  $\frac{f(8)}{g(8)}$  ning qiymatini toping.



A) 2 B) 4 C) -4 D) 3

6. Aylananing uzunligi shu aylananing  $40^\circ$  li yoyi uzunligidan necha foiz ko'p?

A) 600 B) 800 C) 900 D) 700

7.  $f(x) = \frac{1}{2}\sin 2x + x$ ,  $f'(x) = ?$

A)  $\frac{1}{2}\cos x + 1$  B)  $2\cos 2x + 1$  C)  $\cos 2x + 1$   
D)  $\cos 2x$

8.  $\sin^6 \alpha + \cos^6 \alpha + \frac{3}{4}\sin^2 2\alpha$  ni hisoblang.

A) 1 B) -1 C)  $\sin^2 \alpha$  D)  $\cos^2 \alpha$

9. Agar uch xonali sondan 6 ni ayirsak, ayirma 7 ga bo'linadi, 7 ni ayirsak, ayirma 8 ga bo'linadi, 8 ni ayirsak, ayirma 9 ga bo'linadi. Bu sonni toping.

A) 503 B) 143 C) 936 D) 167

10.  $5^{200}$  sonini 24 ga bo'lganda qoladigan qoldiqni aniqlang.

A) 3 B) 15 C) 23 D) 1

11. To'g'ri burchakli trapetsiyaning bitta burchagi  $60^\circ$ , katta asosi 12 sm ga teng. Agar trapetsiyaning kichik diagonali katta asosiga teng bo'lsa, diagonallar o'rtalarini tutashtiruvchi kesma uzunligini (sm) toping.

A) 3 B) 8 C) 4 D) 5

12. Uchta butun son tashkil etgan arifmetik progressiyada birinchi hadi 1 ga teng. Agar ikkinchi hadga 3 qo'shilsa, uchinchi kvadratga ko'tarilsa, geometrik progressiya hosil bo'ladi. Uchinchi sonni toping.

A) 6 B) 8 C) 7 D) 9

13.  $\frac{6^6 \cdot 2^3 - 3^6}{6^6 + 6^3 \cdot 3^3 + 3^6}$  ni hisoblang.

A) 7 B) 3 C) 11 D) 9

14.  $|x| - |x - 2| = 2$  tenglamani yeching.

A)  $[2; \infty)$  B)  $\{-2\}$  C)  $(2; \infty)$  D)  $\{2\}$

15.  $\sqrt{x - 3 - 2\sqrt{x - 4}} + \sqrt{x - 4\sqrt{x - 4}} = 1$  tenglamaning ildizlarini toping.

A)  $[6; 9]$  B)  $[5; 8]$  C)  $[3; 4]$  D)  $[6; 8]$

16. Muntazam sakkizburchakka tashqi chizilgan aylana radiusi  $\sqrt{2} + \sqrt{2}$  ga teng bo'lsa, uning tomonini toping.

A)  $\sqrt{2}$

B)  $\frac{\sqrt{2} + \sqrt{2}}{2}$

C)  $\sqrt{2 - \sqrt{2}}$

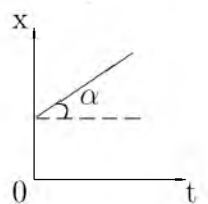
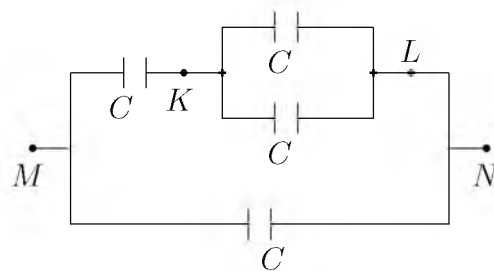
D) 1

17. Uchburchakli piramidaning yon yoqlari asos tekisligi bilan  $60^\circ$  li burchak tashkil etadi. Agar piramida asosining yuzi 40 ga teng bo'lsa, piramidaning to'la sirtini toping.  
A) 72 B) 128 C) 120 D) 80
18. To'g'ri burchakli  $ABC$  uchburchakda  $\angle A = 30^\circ$  bo'lib,  $AB=6$  sm li gipotenuzasini diametri qilib, doira chizildi. Hosil bo'lgan eng kichik segmentning yuzini toping.  
A)  $\frac{12\pi - 9\sqrt{3}}{4}$  B)  $36\pi$  C)  $18\pi$   
D)  $\frac{6\pi - 9\sqrt{3}}{4}$
19. Talaba besh yilda 31 ta imtihon topshirdi. U har keyingi yilda oldingi yildagiga qaraganda ko'p imtihon topshirgan. Beshinchi kursda birinchi kursdagidan 3 marta ko'p imtihon topshirgan bo'lsa, to'rtinchi kursda nechta imtihon topshirgan?  
A) 9 B) 8 C) 7 D) 6
20.  $\sqrt[10]{(15^{10} - 10^{10}) : (3^{10} - 2^{10})}$  ni hisoblang.  
A) 25 B) 5 C) 8 D) 9
21.  $3ax - 6x^2 - 8 + x^3$  ko'phad to'la kub bo'ladigan barcha  $a$  larni toping.  
A) 4 B) -4 C) -2 D) 2
22.  $x^2 + y^2 + 8x - 2y - 8 = 0$  aylana va  $x + y = 4$  to'g'ri chiziqning kesishish nuqtalarini toping.  
A) (0; 4), (-1; 5) B) (3; 2), (5; -1)  
C) (4; 9), (-5; 1) D) (2; 1), (-2; 1)
23.  $y = x^2 - 4x - 1$  funksiyaga ( $x \leq 2$ ) teskari funksiyani ko'rsating.  
A)  $y = 2 - \sqrt{x+5}$  B)  $y = 5 - \sqrt{2-x}$   
C)  $y = 2 - \sqrt{x-5}$  D)  $y = 2 + \sqrt{x+5}$
24.  $a > 2$  da  $||x+1| - 2| = a$  tenglama nechta yechimga ega?  
A) 2 B) ildizga ega emas C) 3 D) 4
25.  $2^{x^2-16} \leq 1$  tengsizlikni yeching.  
A) [-4; 4] B) (-2; 2) C) (0; 2)  
D) [0; 4)
26.  $|x+1| = |x-1|$  tenglamaning ildizlarini toping.  
A) -1; 0 B)  $\emptyset$  C) -1; 1 D) 0
27.  $ABC$  uchburchakda  $BH$  -balandlik,  $CM$  - mediana,  $MH=12$  bo'lsa,  $AB$  ni toping.  
A) 20 B) 12 C) 24 D) 28
28. Agar to'g'ri to'rtburchak kichik tomoni  $a = 10\sqrt{2}$  bo'lsa, uning ixtiyoriy burchagidan katta tomonga o'tgan bissektrisasi uzunligi qancha?  
A) 15 B) 20 C) 30 D) 10
29.  $y = \frac{2}{\sqrt[4]{2x+5}}$  funksiyaning boshlang'ich funksiyasini toping.  
A)  $\frac{4}{3}\sqrt[4]{2x+5} + c$   
B)  $\frac{8}{3}\sqrt[4]{(2x+5)^3} + c$   
C)  $-\frac{4}{3}\sqrt[4]{(2x+5)^3} + c$   
D)  $\frac{4}{3}\sqrt[4]{(2x+5)^3} + c$
30.  $\begin{cases} 2x - 1 > x, \\ x^2 - 7x + 6 > 0, \\ 2^x < 128 \end{cases}$  tengsizliklar sistemasini yeching.  
A)  $(-\infty; 6) \cup (7; \infty)$   
B)  $(7; \infty)$   
C)  $(6; 7)$   
D)  $(-\infty; 6)$
31. Agar kitobdagi axborot hajmi 7 Kbayt bo'lsa, uni nechta "Axborot" so'zi bilan almashtirish mumkin?  
A) 1024 B) 2048 C) 2000 D) 14336
32. Hisoblang va o'tkazishni bajaring:  
 $27_{10} + 111_2 \rightarrow x_2$   
A)  $100010_2$  B)  $100011_2$  C)  $100110_2$   
D)  $100111_2$
33. Tasvirli fayllarning kengaytmasi keltirilgan qatorni aniqlang.  
A) .bmp, .gif B) .com, .exe C) .bas, .pas  
D) .xls, .doc
34. MS Excelning A5:C12 katakchalar blokida nechta katakcha bor?  
A) 22 ta B) 18 ta C) 21 ta D) 24 ta

35. Tashkil etish texnologiyasiga ko'ra web-sahifalar necha va qanday turga bo'linadi?
- A) 2 turga: *statik, dinamik*  
 B) 3 turga: *statik, dinamik, interaktiv*  
 C) 4 turga: *statik, dinamik, interaktiv, input type*  
 D) 2 turga: *input type va interaktiv*
36. Paskalda quyidagi ifoda  $a=5$ ,  $b=15$ ,  $c=2$  bo'lsa qanday natija beradi?  
 $(a+b \text{ div } c * 4) \text{ mod } 5 \text{ div } 3$
- A) 4    B) 1    C) 3    D) 2

### FIZIKA

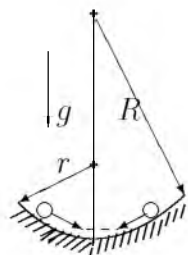
1. Momaqaldir oq ovozi chaqmoq chaqnagandan 8 sekund keyin eshitildi. Chaqmoq kuzatuvchidan qancha masofada (km) chaqnagan? Tovush tezligi 343 m/s.
- A) 2,7    B) 2700    C) 2744    D) 20
2. 25 kg toshko'mir batamom yonganda qancha issiqlik (J) ajralib chiqadi?  $q=2,7 \cdot 10^7$  J/kg
- A)  $6,75 \cdot 10^8$     B)  $6 \cdot 10^8$     C)  $6,5 \cdot 10^8$     D)  $5 \cdot 10^8$
3. Temir bo'lagining suvdagi og'irligi 9,8 N, zichligi  $7800 \text{ kg/m}^3$  bo'lsa, temir bo'lagining hajmini ( $\text{sm}^3$ ) toping.
- A) 14,7    B) 125    C) 1,47    D) 147
4. Havoda massasi 2 kg bo'lgan,  $7,5 \text{ m/s}^2$  tezlanish bilan tushayotgan jismga ta'sir qiluvchi havoni qarshilik kuchinini (N) toping.
- A) 7,5    B) 8    C) 2,5    D) 5
5. Tebranish konturida sig'imi 80 pF bo'lgan kondensator va induktivligi  $20 \mu\text{H}$  g'altak bor. Konturning xususiy tebranishlari davri ( $\mu\text{s}$ ) qanday?
- A) 0,45    B) 0,20    C) 0,50    D) 0,25
6. Tezligi 10 m/s, massasi 10 kg bo'lgan granata ikki bo'lakka ajraldi. Katta bo'lakning tezligi 25 m/s bo'lib granataning harakat yo'nalishida, kichik bo'lakning tezligi 12,5 m/s bo'lib qarama-qarshi yo'nalishda harakatlansa, bo'laklarning massalarini (kg) toping.
- A) 9 va 1    B) 8 va 2    C) 6 va 4    D) 7 va 3
7. Qanday sharoitda sochuvchi linzaning optik kuchi musbat bo'la oladi?  $n_1$  - atrof muhitning optik zichligi,  $n_2$  - linza yasalgan moddaning optik zichligi.
- A) *sochuvchi linzaning optik zichligi musbat bo'la olmaydi*  
 B)  $n_1 > n_2$   
 C)  $n_1 < n_2$   
 D)  $n_1 = n_2$
8. 0,5 g vodorod va 32 g kislorod aralashmasining bosimi 93 kPa, harorat esa 280 K bo'lgandagi zichligi ( $\text{kg/m}^3$ ) toping. Vodorod va kislorodning molyar massasi mos ravishda 2 va 32 g/mol.
- A) 2    B) 1,04    C) 0,5    D) 1,5
9. Kon elektrovozi poyezdni  $0,1 \text{ m/s}^2$  tezlanish bilan tortib bormoqda. Poyezdning massasi 60 t. Harakatga qarshilik kuchi 4120 N. Tortish kuchini (kN) toping.
- A) 12    B) 10,12    C) 11    D) 11,12
10. Ballonda  $15^\circ\text{C}$  haroratli gaz bor. Agar gazning  $\eta=40\%$  i chiqib ketib, bosimi 1,7 marta kamaygan bo'lsa, harorati ( $^\circ\text{C}$ ) qancha kamaygan bo'ladi?
- A) 10,1    B) 5,65    C) 7,52    D) 5,04
11. Shaxta tubida barometr 82 sm.sim.ust. ni, yer sirtida 78 sm.sim.ust. ni ko'rsatayotgan bo'lsa, shaxtaning chuqurligini (m) aniqlang.
- A) 48    B) 480    C) 4,8    D) 40
12. 18 V kuchlanish tarmog'iga qarshiligi  $40 \Omega$  va  $50 \Omega$  ga teng bo'lgan rezistorlar ketma-ket ulandi. Ikkinchi rezistorning uchlaridagi potentsiallar farqini (V) toping.
- A) 9    B) 8    C) 10    D) 12
13. Harorati  $20^\circ\text{C}$  va bosimi 100 kPa bo'lgan  $1,45 \text{ m}^3$  havo suyuq holatga keltirildi. Agar suyuq havoning zichligi  $860 \text{ kg/m}^3$  bo'lsa, u qanday hajmni (l) egallaydi. Havoning molyar massasi 29 g/mol.
- A) 1,5    B) 2    C) 4    D) 3

14. Induksiya vektorining moduli 100 mT bo'lgan bir jinsli magnit maydonining kuch chiziqlariga  $30^\circ$  burchak ostida 2 km/s tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2 \mu\text{C}$  ga teng.  
A) 0,2 B) 0,4 C) 4 D) 2
15. Massa 70 kg bo'lgan odam trapetsiya shaklidagi taxtani o'rtasida o'tiribdi. Taxta uzunligi 8 m bo'lgan 2 ta arqonlarga osilgan. Tebranish vaqtida odam muvozanat vaziyatdan 6 m/s tezlik bilan o'tadi. Shu momentda har bir arqonning taranchlik kuchi (N) qanday?  
A) 600 B) 400 C) 450 D) 500
16. Atom holatidagi kislorod zarrachalarining  $138^\circ\text{C}$  dagi o'rtacha kvadratik tezliklarini (m/s) aniqlang.  $M_{\text{atom}}=16 \text{ g/mol}$ ,  $R=8,3 \frac{\text{J}}{\text{K} \cdot \text{mol}}$   
A) 800 B) 650 C) 840 D) 540
17. Silindrik idishga bir xil massali suv ( $\rho_{\text{suv}}=1 \cdot 10^3 \text{ kg/m}^3$ ) va simob ( $\rho_{\text{sim}}=13,6 \cdot 10^3 \text{ kg/m}^3$ ) qo'yildi. Idishdagi suyuqliklar ustunining umumiy balandligi 143 sm. Idish tubiga bo'lgan bosim qancha (kPa)?  
A) 14,6 B) 15,4 C) 26 D) 10
18. Mashina birinchi 10 minutda 500 m yo'l bosdi. U shu tezlik bilan 0,5 soatda qancha yo'l (m) o'tadi?  
A) 166,6 B) 3000 C) 1500 D) 1667
19. Berilgan grafikdan foydalanib,  $\alpha=23^\circ$  bo'lganda jism tezligini (m/s) toping.  $\sin 23^\circ=0,39$ ;  $\cos 23^\circ=0,92$
- 
- A) 0,39 B) 0,4245 C) 0,92 D) 2,36
20. Yashil shisha orqali qizil harflarga qaralsa, ular qanday rangda ko'rinadi?  
A) qizil B) qora C) yashil D) jigarrang
21. Induktivligi 0,2 H bo'lgan g'altakdan 10 A tok o'tmoqda. G'altak ichidagi magnit maydon energiyasini (J) aniqlang.  
A) 10 B) 0,1 C) 100 D) 1
22. Agar ionlagichning ishlashini o'zgartirmay turib plastinkalar yaqinlashtirilsa, to'yinish tokining kuchi qanday o'zgaradi?  
A) o'zgarmaydi  
B) ortadi  
C) ortishi ham, kamayishi ham mumkin  
D) kamayadi
23. Massasi 11 t bo'lgan trolleybus 36 km/soat tezlik bilan harakatlanmoqda. Agar kuchlanish 550 V va FIK 80% bo'lsa, dvigatel chulg'amidagi tok kuchini (A) toping. Harakatlanishga qarshilik koeffitsiyenti 0,02 ga teng.  
A) 45 B) 25 C) 35 D) 50
24. Gaz boshlangich 6 l hajmdan 4 l gacha izotermik siqilgan. Bunda uning bosimi  $2 \cdot 10^5 \text{ N/m}^2$  ga ortgan. Gazning boshlang'ich bosimi ( $\text{N/m}^2$ ) qanday?  
A)  $20 \cdot 10^5$  B)  $4 \cdot 10^6$  C)  $2 \cdot 10^5$  D)  $4 \cdot 10^5$
25. Rasmdagi har bir kondensatorning sig'imi C ga teng. M va N nuqtalar orasidagi potentsiallar farqi 120 V bo'lsa, K va L nuqtalar orasidagi potentsiallar farqini (V) toping.
- 
- A) 60 B) 40 C) 20 D) 30
26. Hidrostansiyaning quvvati 75,5 MW. Agar stansiyaning FIK i 75% bo'lsa va to'g'on suv sathini 10 m balandlikka ko'tarsa suvning sarflanishi ( $\text{m}^3/\text{s}$ ) nimaga teng?  
A) 900 B) 1000 C) 850 D) 800
27. Ikki kosmik kema  $v_1 = v_2=0,75c$  tezlik bilan qarama-qarshi yo'nalishda harakatlanmoqda. Birining 2-siga nisbatan tezligi qanday?  
A)  $0,86c$  B)  $c$  C)  $0,9c$  D)  $0,96c$
28. Mikroskop linzalarining fokus masofalari mos ravishda 1,5 sm va 2,5 sm, linzalar orasidagi masofa 30 sm. Bunday mikroskop obyektini necha marta kattalashtirib ko'rsatadi?  
A) 200 B) 300 C) 100 D) 400

29. Natriy sariq nurlarining havodagi to'liq uzunligi  $589 \mu\text{m}$ . Shu nurning shishadagi to'liq uzunligini (m) toping. Shishaning sindirish ko'rsatkichi 1,56 ga teng.

- A)  $34 \cdot 10^{-7}$  B)  $3,78 \cdot 10^{-7}$  C)  $3,9 \cdot 10^{-7}$   
D)  $5 \cdot 10^{-7}$

30. Sharcha nov ichida kuchsiz tebranmoqda. Novning bir yoni  $r$  egrilikka, ikkinchi yoni  $R$  egrilikka ega. Tebranishlarning chap va o'ng tomondagi amplitudalari nisbatini aniqlang.



- A)  $\sqrt{\frac{r}{R}}$  B)  $\frac{r^2}{R^2}$  C)  $\frac{r}{R}$  D)  $\frac{R-r}{R+r}$

31. Nyutonning ikkinchi qonunini impuls yordamida ifodalangan formulasini belgilang.

- A)  $F = m \frac{v}{t}$  B)  $F \cdot t = \Delta p$  C)  $F = ma$   
D)  $F = \frac{dp}{dt}$

32. Bir jinsli elektr maydonida  $\alpha$ -zarrachasi kuchlanganlik vektorining yo'nalishi bo'ylab ko'chgan bo'lsa uning potensial energiyasi qanday o'zgaradi?

- A) ortqdi B) o'zgarmaydi C) kamayadi  
D) avval ortib so'ngra kamayadi

33. 500 W quvvatli elektroplitka kuchlanish 127 V li sanoat tarmog'iga ( $\nu=50 \text{ Hz}$ ) ulangan. Plitka zanjirida tok kuchining (A) vaqtga bog'lanish tenglamasini ko'rsating. Kuchlanish sinus qonuniga ko'ra o'zgaradi deb hisoblang.

- A)  $I = 4 \sin 100\pi t$  B)  $I = 5,6 \sin 50t$   
C)  $I = 5,6 \sin 100\pi t$  D)  $I = 127 \sin 100\pi t$

34. Ichki qarshiligi  $0,5 \Omega$  bo'lgan tok manbaiga  $3 \Omega$ li tashqi qarshilik ulanganda, tok manbayi qisqichlaridagi kuchlanish 6 V bo'lgan. Manbaning to'la quvvatini (W) aniqlang.

- A) 6 B) 14 C) 18 D) 12

35. Ko'ndalang kesim yuzasi  $20 \text{ mm}^2$ , tok tashuvchi elektronlarining konsentrasiyasi  $2 \cdot 10^{22} \text{ sm}^{-3}$  va tartibli harakat tezligi  $0,01 \text{ mm/s}$  ga teng bo'lgan o'tkazgichning ko'ndalang kesimi orqali 5 minutda o'tgan elektronlar sonini toping.

- A)  $4 \cdot 10^{21}$  B)  $2,2 \cdot 10^{21}$  C)  $2 \cdot 10^{20}$   
D)  $1,2 \cdot 10^{21}$

36. Kislorod atomining massasi uning yadrosi massasidan necha marta katta?

- A)  $\approx 1840$  B)  $\approx 1$  C)  $\approx 10^5$   
D)  $\approx 16 \cdot 1840$

## INGLIZ TILI

1. Choose the answer which correctly completes the sentence.

Heavy rains burst Whitton Dam two days ago. The flooded houses are still ...

- A) evacuate B) evacuated C) evacuating  
D) being evacuated

2. Choose the answer which correctly completes the sentence.

Neither David nor Jane ... to University.

- A) go B) are going C) going D) goes

3. Choose the answer which correctly complete the sentence.

You shouldn't get offended. You ... Nick. He didn't mean to hurt you.

- A) *mustn't understand*  
B) *must misunderstand*  
C) *must be understanding*  
D) *must have misunderstood*

4. Choose the answer which correctly completes the sentence.

She noticed him ... away from the house.

- A) was running B) to run C) run D) ran

5. Choose the answer which correctly completes the sentence.

The class got ... when the professor entered.

- A) quietly B) quieting C) quitness  
D) quiet

6. Choose the answer which correctly complete the sentence.

They were tired because they ... hard all morning.

- A) had studied B) studied  
C) had been studying D) were studying

7. Choose the answer which correctly completes the sentence.  
Let's go to Mirabella's tonight ... you haven't been there before.  
A) *if* B) *when* C) *unless* D) *until*
8. Choose the answer which correctly completes the sentence.  
Alice is not very happy at her present job as a nurse. She wishes she ... to a nursing school.  
A) *didn't do* B) *hadn't gone* C) *had gone*  
D) *went*
9. Choose the answer which correctly completes the sentence.  
Dan's goldfish died when he was away on holiday. His sister forgot ... them.  
A) *to feed* B) *to be fed* C) *feeding*  
D) *being fed*
10. Choose the answer which correctly completes the sentence.  
I met Caty ... chance when I was shopping in town.  
A) *by* B) *with* C) *for* D) *in*
11. Choose the answer which correctly complete the sentence.  
The announcement says that ... who has lost his credit card must declare about it immediately.  
A) *nobody* B) *anyone* C) *some*  
D) *someone*
12. Choose the answer which correctly completes the sentence.  
You should have got ... the bus. That was your stop!  
A) *on* B) *into* C) *off* D) *out of*
13. Choose the answer which correctly completes the sentence.  
Now when he's back to his home town it feels ... to be working in his old school.  
A) *stranger* B) *strangeness* C) *strange*  
D) *strangely*
14. Choose the answer which correctly completes the sentence.  
The extent of Christina's knowledge on various complex subjects ... us.  
A) *surprises* B) *to surprise* C) *surprising*  
D) *surprise*
15. Choose the answer which correctly completes the sentence.  
You can't have good crops unless you ... the soil. It is usually poor without care and cultivation.  
A) *cultivate* B) *will cultivate*  
C) *don't cultivate* D) *will not cultivate*
16. Choose the answer which correctly complete the sentence.  
Helen is ... a busy person that she never feels bored.  
A) *so* B) *so as* C) *such* D) *as*
17. Choose the answer which correctly completes the sentence.  
Most of the forest ... cut down and the trees remaining are now under threat.  
A) *have been* B) *were* C) *has been*  
D) *had been*
18. Choose the answer which correctly completes the sentence.  
On Sunday she went shopping at ... Macy's and bought an expensive overcoat.  
A) - B) *a* C) *the* D) *an*
19. Choose the answer which correctly completes the sentence.  
He's always found her to be ... friendly.  
A) *exceptional* B) *exceptionally*  
C) *excepted* D) *except*
20. Choose the answer which correctly completes the sentence.  
The beekeeper has observed ... at the approach of a thunderstorm.  
A) *bees enraging that* B) *enraging the bees*  
C) *that bees become enraged*  
D) *become enraged the bees*
21. Choose the answer which correctly completes the sentence.  
I would go out more often if I ... to work so much.  
A) *didn't have* B) *don't have*  
C) *wouldn't have* D) *hadn't*
22. Choose the answer which correctly complete the sentence.  
We usually have ... breakfast at 8 o'clock.  
A) *an* B) *the* C) *a* D) -



23. Choose the answer which correctly completes the sentence.

I am afraid there are ... vacancies in the company at present.

- A) none B) neither C) no D) not

Read the text. Then choose the correct answer to question 24-26.

In the past, before technology was used to monitor the weather accurately, people looked at the skies, watched how animals and plants behaved, and relied on signs and superstitions to forecast the weather. Indeed, some people still believe that, when cows lie down or a cat sneezes, it is going to rain. Nowadays, scientists who study the weather, called meteorologists, use many different methods to make their forecasts. Satellites monitor our weather and send information to computers at special processing stations. On the ground, weather stations all over the world record wind speeds and directions, temperature, clouds and air pressure.

24. It is clear from the passage that reasonably accurate weather forecasting ...
- A) *is just one stage in an effort to control the climate.*  
 B) *does not require much technological assistance.*  
 C) *is of little importance to most people in the world.*  
 D) *is now available worldwide.*
25. As is pointed out in the passage, before the coming of technology, ...
- A) *the methods used to forecast the weather are all now regarded as completely useless.*  
 B) *several methods were used in an effort to forecast the weather.*  
 C) *the only way to learn about the weather was through the behaviour of plants and animals.*  
 D) *people weren't really interested in weather conditions.*

26. According to the passage, it is now possible, with the aid of technology, to forecast the weather, but ...

- A) *changing wind speeds can affect predictions.*  
 B) *long-term forecasts are still far from accurate.*  
 C) *much relevant material is never processed.*  
 D) *it is still a very complex process.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Andrew Murphy former (27)... director of Delco Electronics, has pleaded "Not Guilty" to charges that he stole £ 5 million from the company. He claims not to know where the money went. He has suggested (28)... an accountant took the money. Investigators consider it unlikely that anyone else in the company could have committed the crime.

- 27.
- A) *managing* B) *manage* C) *managed*  
 D) *to manage*
- 28.
- A) *where* B) *who* C) *what* D) *that*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

A forest is a thickly wooded area. Forests have a wide (29)... of plants and animals living among the trees. Forests that like cooler climates (30)... largely in the northern hemisphere, far north of the equator. Forest floors are shady places and it can be hard (31)... plants to grow.

- 29.
- A) *vary* B) *various* C) *variety*  
 D) *variable*
- 30.
- A) *found* B) *were found* C) *are found*  
 D) *find*

31.

- A) *from* B) *for* C) *of* D) *by*

Read the text. Then choose the correct answer to question 32-33

One chilly autumn morning in 1945, five thousand shoppers crowded the pavements outside Gimbels Department Store in New York City. The day before, Gimbels had taken out a full-page newspaper advertisement in the *New York Times*, announcing the sale of the first ballpoint pens in the United States. Within six hours, Gimbels had sold its entire stock of ten thousand ballpoints at \$12.50 each—approximately \$130 at today's prices.

In fact this “new” pen was not new after all, and was just the latest development in a long search for the best way to deliver ink to paper. In 1884 Lewis Waterman had patented the fountain pen, giving him the sole rights to manufacture it. This marked a significant leap forward in writing technology, but fountain pens soon became notorious for leaking. In 1888, a leather tanner named John Loud devised and patented the first “rolling-pointed marker pen” for marking leather. Loud's design contained a reservoir of ink in a cartridge and a rotating ball point that was constantly bathed on one side with ink.

Loud's pen was never manufactured, however, and over the next five decades, 350 additional patents were issued for similar ball-type pens, though none advanced beyond the design stage. Each had their own faults, but the major difficulty was the ink: if the ink was thin, the pens leaked, and if it was too thick, they clogged. Depending on the climate or air temperature, sometimes the pens would do both. Almost fifty years later, Ladislav and Georg Biro, two Hungarian brothers, **came up with** a solution to this problem. In 1935 Ladislav Biro was working as a journalist, editing a small newspaper. He became frustrated by the amount of time he wasted filling fountain pens with ink and cleaning up ink smudges. Ladislav and Georg set about making models of new pen designs and creating better inks to use in them. Ladislav observed the ink in newspaper printing dried rapidly, leaving the paper dry and smudge-free. He was determined to construct a pen using the same type of ink. However, the thicker ink would not flow from a regular pen nib so he had to develop a new type of point. Biro came up with the idea of fitting his

pen with a tiny ball bearing in its tip. As the pen moved along the paper, the ball bearing rotated and picked up ink from the ink cartridge which it delivered to the paper.

32. The problem with the ballpoint pens invented between 1888 and 1935 was that ...
- A) *they cost a great deal of money to manufacture*  
 B) *they could not write on ordinary paper*  
 C) *they were affected by weather conditions*  
 D) *the technology to manufacture them did not exist*
33. What does “**came up with**” in bold mean?
- A) *to get rid of* B) *to move towards*  
 C) *to reject* D) *to suggest*

Read the text. Then choose the correct answer to question 34-36.

In 1971 the Great Persian Empire celebrated the 1500 th anniversary of its founding.

Its founder was Cyrus the Great, who proclaimed himself the King of the Kings. His son Cambyses succeeded his throne, conquering Egypt and expanding the empire.

Darius I followed Cambyses and was probably the most famous of this long line of kings. Under his rule, the empire stretched as far as India.

Governors were placed in charge of the provinces. Extensive systems of roads and waterways improved communication throughout the kingdom. He was one of a few ancient rulers who permitted his subjects to worship as they wished. The magnificent city of Persepolis, founded under his direction in 518 B.C. was a ceremonial center.

34. Who is considered the creator of the Persian Empire?
- A) *Cyrus* B) *Darius I* C) *Persepolis*  
 D) *Combyses*
35. Who was the predecessor of Cambyses?
- A) *Persepolis* B) *Egypt* C) *Darius I*  
 D) *Cyrus*
36. Who were responsible for the provinces?
- A) *the governors* B) *the subjects*  
 C) *the Egyptians* D) *the King*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000037**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1. Teng yonli uchburchakning uchidagi tashqi burchagi  $120^\circ$  ga teng bo'lsa, asosidagi burchak sinusini toping.  
A)  $\frac{1}{2}$  B)  $\frac{\sqrt{2}}{2}$  C)  $\frac{\sqrt{3}}{2}$  D) 1
2.  $\sin x = \cos 2x$  tenglamani yeching.  
A)  $\frac{\pi}{6} + \frac{2\pi k}{3}, k \in Z$   
B)  $\frac{2\pi}{3} + \frac{\pi k}{3}, k \in Z$   
C)  $\frac{\pi}{3} + \frac{2\pi k}{3}, k \in Z$   
D)  $\frac{\pi}{6} + \frac{\pi k}{3}, k \in Z$
3. To'g'ri to'rtburchakning bo'yi kvadratning tomonidan 8 m uzun, eni esa shu kvadrat tomonidan 4 m qisqa. Kvadrat tomonini  $x$  bilan belgilab, to'g'ri to'rtburchak perimetri va yuzi uchun ifoda tuzing.  
A)  $P = 4(x + 2); S = (x + 8)(x - 4)$   
B)  $P = 4x + 8; S = 4(x + 8)$   
C)  $P = 4x + 4; S = x^2 + 4x - 18$   
D)  $P = 4x + 2; S = (x + 8)(x - 4)$
4. To'rtburchakli muntazam prizmagacha ichki chizilgan silindr yon sirtining prizma yon sirtiga nisbatini toping.  
A)  $\frac{\pi}{2}$  B) 4 C)  $\frac{\pi}{4}$  D) 2
5.  $ABC$  uchburchak berilgan.  $AB$  to'g'ri chiziqqa parallel tekislik bu uchburchakning  $AC$  tomonini  $A_1$  nuqtada,  $BC$  tomonini  $B_1$  nuqtada kesib o'tadi.  $AB=15$  sm,  $AA_1 : AC = 2 : 3$  bo'lsa,  $A_1B_1$  kesma uzunligini (sm) toping.  
A) 3 B) 4 C) 2 D) 5
6.  $7 \cdot 5^2$  va  $3^2 \cdot 5 \cdot 7$  sonlari uchun EKUK ni toping.  
A) 3150 B) 1500 C) 315 D) 1575
7.  $4x - 5\sqrt{x-1} - 3 = 0$  tenglama ildizlarining ko'paytmasini toping.  
A)  $2\frac{16}{17}$  B) 4 C)  $\frac{17}{8}$  D)  $3\frac{1}{4}$
8.  $f(x) = \cos 2x + e^x, f'(x) = ?$   
A)  $-\sin x + e^x$  B)  $-2\sin 2x + e^x$   
C)  $-\sin 2x + e^x$  D)  $\sin 2x + e^x$
9. 3; 5; 9; 17; 33; 65; ... ketma-ketlikning dastlabki  $n$  ta hadining yig'indisini toping.  
A)  $2^n + n - 2$  B)  $(2 + 2^{n-1}) \cdot n$   
C)  $2^{n+1} + n - 2$  D)  $2n$
10.  $\sqrt{4\sqrt{2} + 2\sqrt{6}}$  ifodani soddalashtiring.  
A)  $\sqrt{18}$   
B)  $\sqrt[4]{18} + \sqrt[4]{2}$   
C)  $\sqrt{18} + \sqrt{2}$   
D)  $\sqrt[4]{18} - \sqrt[4]{2}$
11.  $y = \arcsin \frac{x-3}{2} - \lg(4-x)$  funksiyaning aniqlanish sohasini toping.  
A) [1; 5] B) [1; 4] C) (1; 4) D) [1; 4]
12. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $2\sqrt{3}$  sm bo'lsa, shu aylanaga ichki chizilgan kvadratning yuzini ( $\text{sm}^2$ ) hisoblang.  
A) 18 B) 12 C) 20 D) 16
13. Ikkita doira radiuslari 1:2 nisbatda. Katta doira aylanasining uzunligi  $8\pi$ . Kichik doira yuzini toping.  
A)  $2\pi$  B)  $\pi$  C)  $4\pi$  D)  $8\pi$
14. Uchburchakli piramidaning asosi tomonlari 4; 4 va 2 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha yon yoqlari asos tekisligi bilan  $60^\circ$  li burchak tashki etadi. Piramidaning hajmini toping.  
A)  $2\sqrt{3}$  B) 6 C)  $\sqrt{3}$  D) 3
15. Uchta butun son tashkil etgan arifmetik progressiyada birinchi hadi 1 ga teng. Agar ikkinchi hadga 3 qo'shilsa, uchinchi kvadratga ko'tarilsa, geometrik progressiya hosil bo'ladi. Uchinchi sonni toping.  
A) 8 B) 7 C) 6 D) 9
16.  $\frac{712^2 - 289}{695}$  ni hisoblang.  
A) 725 B) 695 C) 765 D) 729
17. Agar  $a^3 + a - 2 = 0$  bo'lsa,  $\frac{a^4 + a^3 + a^2 + 9}{a^5 + a^2 + a + 6}$  ifodaning qiymatini toping.  
A)  $\frac{4}{3}$  B)  $\frac{12}{11}$  C) 1 D) -2

18. Xo'jayin bir kishini bir yilga yollab, unga 12 so'm pul va bir chakmon bermoqchi bo'libdi, lekin ishchi 7 oy ishlagandan keyin xo'jayin unga 5 so'm pul va bir chakmon beribdi. Chakmon necha so'm bo'lgan.  
A) 4,8 B) 5,2 C) 5,5 D) 5
19.  $y = x^2 - 4x - 1$  funksiyaga ( $x \leq 2$ ) teskari funksiyani ko'rsating.  
A)  $y = 5 - \sqrt{2-x}$  B)  $y = 2 - \sqrt{x-5}$   
C)  $y = 2 - \sqrt{x+5}$  D)  $y = 2 + \sqrt{x+5}$
20. Radiuslari 2 va 3 ga teng bo'lgan aylanalar bir-biriga tashqi ravishda urinadi. Ularning ikkalasi uchinchi aylanaga ichki ravishda urinsa va markazlari bitta to'g'ri chiziqda yotsa, tashqi aylananing ichki aylanalardan bo'sh qolgan sohasi yuzini toping.  
A)  $6\pi$  B)  $9\pi$  C)  $4\pi$  D)  $12\pi$
21.  $f(x) = 8x^3 - 6x^2 + 7$  funksiyaning  $M(1; 0)$  nuqtadan o'tuvchi boshlang'ich funksiyasini toping.  
A)  $2x^4 - 2x^3 + 7x - 7$  B)  $4x^4 - 2x^3 + 7x - 9$   
C)  $4x^4 - 2x^3 + 7x - 6$  D)  $4x^4 - 2x^3 + 7x - 7$
22.  $ABC$  uchburchak uchlaridan  $\alpha$ -tekislikkacha bo'lgan masofalar mos ravishda 3,75; 9 va  $2\frac{1}{4}$  ga teng bo'lsa, uchburchakning og'irlik markazidan  $\alpha$ -tekislikkacha bo'lgan masofani toping.  
A) 5 B) 6 C) 4 D) 4,75
23. 
$$\begin{cases} \frac{x+3}{3-x} < 2, \\ x^3 < 16x, \\ 4 \geq x^2 \end{cases}$$
 tengsizliklar sistemasini yeching.  
A) (3; 5) B) [2; 3] C) (4; 6] D) (0; 1)
24.  $x^2 + \frac{16}{x^2} + (x - \frac{4}{x}) - 28 = 0$  tenglamaning ildizlari yig'indisini toping.  
A) 0 B) -1 C) 4 D) 1
25. 2 ta parallel to'g'ri chiziqni uchinchi to'g'ri chiziq kesib o'tganda hosil bo'lgan ichki bir tomonli burchaklar  $\frac{7}{13}$  nisbatda. Ulardan kattasini toping.  
A)  $63^\circ$  B)  $117^\circ$  C)  $113^\circ$  D)  $120^\circ$
26.  $\sqrt{x^2 + 2x + 1} - |x - 4| = 2$  tenglamaning [1; 3] kesmadagi ildizini toping.  
A) 2,5 B) 2,(3) C) bu oraliqda yechimi yo'q D) 1,5
27.  $2^{x^2-16} \leq 1$  tengsizlikni yeching.  
A) [0; 4) B) (-2; 2) C) (0; 2) D) [-4; 4]
28.  $x, y, z$  - butun sonlar bo'lib, 
$$\begin{cases} \frac{xy}{y-x} = -\frac{15}{2} \\ \frac{yz}{z-y} = \frac{21}{4} \\ \frac{xz}{z-x} = \frac{35}{2} \end{cases}$$
 bo'lsa,  $x + y - z = ?$   
A) 15 B) 4 C) 1 D) 9
29.  $ax = by = cz = 6$  va  $x + y + z = 36$  ekani ma'lum bo'lsa,  $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$  ni toping.  
A) 5 B) 6 C) 9 D) 12
30.  $f(x+5) = x \cdot f(x) + 4$  bo'lsa,  $f(10)$  ni toping.  
A) 23 B) 25 C) 24 D) 30
31. Dastur asosida boshqariladigan birinchi hisoblash mashinasini kim va qachon ixtiro qilgan?  
A) 1930 yil, V.Bush B) 1941 yil, K.Suze  
C) 1944 yil, G.Eyken D) 1907 yil, Li de Fores
32. Sakkizlik sanoq sistemasidan ikkilik sanoq sistemasiga o'tkazishni bajaring:  $567_8 \rightarrow x_2$   
A) 10110101<sub>2</sub> B) 101110111<sub>2</sub> C) 1111101<sub>2</sub>  
D) 11101110<sub>2</sub>
33. Faylning xususiy nomi nechta belgidan iborat bo'lishi mumkin?  
A) 1 tadan 8 tagacha  
B) 1 tadan 64 tagacha  
C) operatsion sistema va dasturga bog'liq  
D) 1 tadan 255 tagacha
34. Ma'lumotlar ombori undagi axborot shakliga ko'ra qanday turlarga ajratiladi?  
A) hujjatli va faktografik  
B) relyatsion va to'rli C) matnli va grafik  
D) raqamli va analog
35. Axborot uzatish jarayonida quyidagi qismlardan qaysi biri bo'lishi shart?  
1) Axborot qabul qiluvchi 2) Axborot manbai  
3) Axborot uzatish vositasi  
A) 1, 2, 3 B) 1 C) 1, 2 D) 1, 3

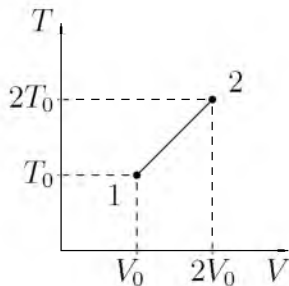
36. Paskal dasturi lavhasidagi write protsedurasi necha marta bajariladi?  
for i:=1 to 3 do for j:=0 to 3 do write (i+j);  
A) 1 marta B) 3 marta C) 12 marta  
D) 9 marta

### FIZIKA

- Induktivligi 0,4 H bo'lgan o'tkazgichning induktiv qarshiligi ( $\Omega$ ) tok chastotasi 50 Hz bo'lganda qanday?  
A) 113 B) 20 C) 126 D) 200
- Massasi 10 kg va uzunligi 40 sm bo'lgan tayoqning uchlariga massalari 40 va 10 kg bo'lgan yuklar osilgan. Tayoq muvozanatda turishi uchun uning birinchi uchidan qanday masofada (sm) tayanch qo'yish lozim?  
A) 9 B) 11 C) 10 D) 12
- Harorati  $-73^{\circ}\text{C}$  bo'lgan gaz molekullari ilgari harakat kinetik energiyasini 3 marta ortirish uchun gazni qanday haroratgacha ( $^{\circ}\text{C}$ ) qizdirish kerak?  
A) 219 B) 327 C) 200 D) 600
- Radiusi 5 sm bo'lgan aylana shaklidagi yassi g'altak 40 ta o'ramga ega. G'altak orqali o'tayotgan tok kuchi 60 mA ga teng bo'lsa, g'altakning magnit momenti necha  $\text{A} \cdot \text{sm}^2$  ga teng bo'ladi?  
A) 240 B) 125,6 C) 188,4 D) 120
- Shishadan fokus masofasi 20 sm bo'lgan qavariq linza tayyorlandi. Linzaning egrilik radiuslari teng. Shishaning nur sindirish ko'rsatkichi 1,5 ga teng bo'lsa egrilik radiusini (sm) toping.  
A) 22 B) 24 C) 25 D) 20
- $27^{\circ}\text{C}$  temperaturada yopiq idishdagi gazning bosimi 150 kPa edi.  $-13^{\circ}\text{C}$  da bosim (kPa) qanday bo'ladi?  
A) 130 B) 72 C) 65 D) 100
- Yerdan Oygacha bo'lgan masofa 384 ming km bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?  
A) 1,2 B) 1,3 C) 1,4 D) 1,5
- Jism  $h$  balandlikdan erkin tushmoqda. Balandlikning oxirgi  $3/4$  qismidagi o'rtacha tezligi, boshlang'ich  $1/4$  qismidagi o'rtacha tezligidan necha marta farq qiladi?  
A) 9 marta katta B) 8 marta katta  
C) 3 marta katta D) 6 marta kichik
- Temperatura ortishi bilan yarimo'tkazgichning qarshiligi ...  
A) o'zgarmaydi B) kamayadi  
C) avval ortadi, keyin kamayadi D) ortadi
- 4 g vodoroddagi modda miqdorini (mol) toping.  
A) 3 B) 4 C) 2 D) 1
- Yuqoriga tik yo'nalishda 40 m/s tezlik bilan otilgan jismning 4 s dan keyingi tezligini (m/s) toping.  
A) 0 B) 30 C) 20 D) 10
- Prujinali mayatnikning harakat tenglamasini belgilang.  
A)  $mx^2 = -kx$  B)  $mgh = -kx$   
C)  $\frac{mv^2}{2} = mgh$  D)  $m\frac{d^2x}{dt^2} = -kx$
- Elektr choynagi 220 V kuchlanishga ulangan holda 3,2 A tok iste'mol qilib 1 l suvni 12 minutda qaynatdi. Suvning boshlang'ich harorati  $20^{\circ}\text{C}$  bo'lsa, FIKni (%) toping.  
 $c_{suv} = 4200 \frac{\text{J}}{\text{kg} \cdot ^{\circ}\text{C}}$   
A) 98 B) 66 C) 71 D) 84
- O'q miltiqdan 1000 m/s tezlik bilan uchib chiqdi. Bunda tepki ta'sirida miltiq 2 m/s tezlik olsa, o'qning massasi miltiqning massasidan necha marta kichikligini aniqlang.  
A) 475 B) 450 C) 600 D) 500
- Massasi 50 kg bo'lgan bola Oy sirtida turibdi deylik. U Oyga qanday kuch (N) bilan tortiladi?  $g = 1,6 \text{ m/s}^2$   
A) 16 B) 80 C) 50 D) 500
- Gorizontal ravishda aylanayotgan disk ustida, disk o'qidan 1 m masofada 1 m/s chiziqli tezlik bilan aylanayotgan jism ishqalanish koeffitsiyenti qanday bo'lganda joyidan qo'zg'ala boshlaydi?  
A) 0,1 B) 0,2 C) 0,01 D) 0,05
- Silindrik idishga bir xil massali suv ( $\rho_{suv} = 1 \cdot 10^3 \text{ kg/m}^3$ ) va simob ( $\rho_{sim} = 13,6 \cdot 10^3 \text{ kg/m}^3$ ) qo'yildi. Idishdagi suyuqliklar ustunining umumiy balandligi 143 sm. Idish tubiga bo'lgan bosim qancha (kPa)?  
A) 26 B) 15,4 C) 10 D) 14,6

18. O'zgarmas kuchlanish manbaiga ulangan  $2R$  qarshilikka qanday qarshilik ketma-ket ulansa, uning quvvati 2,25 marta kamayadi?  
A) 2,25R B) 2,5R C) 0,5R D) 2R
19. Elektropoyezdning uchinchi vagoni oldida turgan kuzatuvchi harakat boshlagan vagonning 5 s davomida o'tganini, poyezdning oxiri o'tguncha esa 20 s vaqt o'tganini aniqlagan bo'lsa, poyezdning vagonlari soni nechta? (Poyezd harakati tekis tezlanuvchan.)  
A) 16 B) 18 C) 14 D) 15
20. Bir jinsli magnit maydon induksiyasi 2 marta ortsa, bu maydonga joylashgan o'tkazgichdagi tok kuchi qanday o'zgaradi?  
A) 2 marta kamayadi B) o'zgarmaydi  
C) 4 marta ortadi D) 2 marta ortadi
21. Agar qavariq linza yordamida buyumning haqiqiy, teskari kichiklashgan tasviri hosil qilinayotgan bo'lsa, buyum qayerda joylashgan?  
A) fokus masofa bilan ikkilangan fokus masofa orasida  
B) ikkilangan fokus masofadan uzoqda  
C) fokus nuqta va optik markaz orasida  
D) ikkilangan fokus masofada
22. Og'irligi 750 N bo'lgan odamni ko'tarib tura oladigan 50 sm qalinlikdagi yassi muzning yuzasi eng kamida qancha ( $m^2$ ) bo'lishi mumkin?  
A) 1 B) 1,75 C) 1,25 D) 1,53
23. Energiyasi  $6 \cdot 10^{-19}$  J ga teng bo'lgan fotonning impulsi ( $kg \cdot m/s$ ) qancha?  $c=3 \cdot 10^8$  m/s  
A)  $2 \cdot 10^{-27}$  B)  $2 \cdot 10^{-28}$  C)  $0,2 \cdot 10^{-27}$   
D)  $0,2 \cdot 10^{-28}$
24. Agar zaryadlarning har birining miqdorini 3 barobar kamaytirib, oralaridagi masofani 3 marta oshirsak ularning bir-biriga ta'siri qanday o'zgaradi?  
A) 27 marta kamayadi B) 9 marta oshadi  
C) 81 marta kamayadi D) o'zgarmaydi
25. Dengizdagi to'lqin do'ngliklari orasidagi masofa 5 m. Katerning to'lqinga qarshi harakatiga 1 s da kater korpusiga 4 marta to'lqin urildi. To'lqin bilan bitta yo'nalishda harakatlanganda 2 marta urildi. Agar kater tezligi to'lqin tezligidan katta bo'lsa kater (m/s) va to'lqin (m/s) tezligini toping.  
A) 10; 5 B) 15; 5 C) 25; 5 D) 20; 10
26. Massasi 15 kg bo'lgan chanani bola  $45^\circ$  yo'nalishdagi kuch bilan tortib bormoqda. Qor bilan chana orasidagi ishqalanish koeffitsienti 0,02 ga teng bo'lsa, chana tekis harakat qilishi uchun bola qanday kuch (N) bilan tortish kerak?  
A) 4,2 B) 3 C) 2,1 D) 4,0
27. Ikki sharchaga bir xil  $2 \cdot 10^{-8}$  Kl zaryad berilgan zaryadlar vakuumda  $10^{-3}$  N kuch bilan ta'sirlashmoqda. Ular orasidagi masofani (sm) toping.  
A)  $\sqrt{6}$  B) 12 C) 6 D) 10
28. Qarshiliklari 3 k $\Omega$ , 12 k $\Omega$  va 4 k $\Omega$  ga teng bo'lgan rezistorlar o'zaro parallel ulanib, so'ngra elektr tarmog'iga ulandi. Agar ikkinchi rezistordagi tok kuchi 4 mA ga teng bo'lgan bo'lsa, tarmoqdagi tok kuchini (mA) toping.  
A) 24 B) 36 C) 32 D) 12
29. Vakuumda elektr tokining qanday ta'sirlari namoyon bo'ladi?  
A) kimyoviy B) barcha ta'sirlari C) issiqlik  
D) magnit
30. Ma'lum tezlik bilan harakatlanadigan jismning kinetik energiyasi 50 MJ, impulsi 10 kJ·m/s bo'lsa, massasini (kg) toping.  
A) 1,5 B) 1 C) 2 D) 0,5

31. Rasmda bir atomli ideal gaz 1 holatdan ikkinchi holatga o'tish jarayonida temperaturasini hajmga bog'lanishini grafigi tasvirlangan. Bu jarayonda gazning ichki energiyasi 45 kJ ga ortgan bo'lsa, gaz jami qancha issiqliq (kJ) qabul qilgan?



- A) 75 B) 45 C) 0 D) 90
32. Kislorod atomining massasi uning yadrosi massasidan necha marta katta?  
A)  $\approx 1$  B)  $\approx 10^5$  C)  $\approx 1840$   
D)  $\approx 16 \cdot 1840$
33. Elektron geliy atomini ionlashi uchun kamida qanday tezlikka (m/s) ega bo'lishi kerak? Geliy atomining ionizatsiya energiyasi 24,5 eV. Elektron massasi  $9,1 \cdot 10^{-31}$  kg.  
A)  $3,6 \cdot 10^6$  B)  $2,0 \cdot 10^6$  C)  $29,4 \cdot 10^6$   
D)  $2,93 \cdot 10^6$
34. Sig'imi 20 l bo'lgan ballondagi 2 kg massali havoninng  $-13^\circ\text{C}$  haroratdagi bosimi (MPa) qancha? Havoning molyar massasi 29 g/mol.  
A) 7 B) 10 C) 74,5 D) 7,45
35. Qanday jarayonda gazga berilgan issiqlikning hammasi mexanik ishga aylanadi?  
A) izotermik B) izobarik C) adiabatik  
D) izoxorik
36. Tebranish konturi induktivligi  $2 \mu\text{Gn}$  bo'lgan g'altak va sig'imi 1800 pF bo'lgan kondensatordan iborat kontur qanday to'lqin uzunlikka (m) mo'ljallangan?  $c=3 \cdot 10^8$  m/s  
A) 130 B) 110 C) 100 D) 120

### INGLIZ TILI

1. Choose the answer which correctly completes the sentence.  
That theatre ... to close down soon.  
A) is thought B) thinks C) is thinking  
D) thought

2. Choose the answer which correctly completes the sentence.  
English weather, ... is always bad, is the subject of many conversations.  
A) what B) which C) where D) when
3. Choose the answer which correctly completes the sentence.  
Alf ... as a waiter for ten years, then he opened his own company.  
A) has been working B) has worked  
C) worked D) works
4. Choose the answer which correctly completes the sentence.  
Most of the forest ... cut down and the trees remaining are now under threat.  
A) were B) has been C) have been  
D) had been
5. Choose the answer which correctly complete the sentence.  
They have promised to lend me a tennis racket so I ... take mine.  
A) daren't B) can't C) don't have to  
D) mustn't
6. Choose the answer which correctly completes the sentence.  
They closed down the factory because it ... money for years.  
A) was losing B) had been losing C) lost  
D) has lost
7. Choose the answer which correctly completes the sentence.  
Recently there has been an outbreak of the flu, and doctors don't know...  
A) that is the cause B) is what the cause  
C) the cause is what D) what the cause is
8. Choose the answer which correctly completes the sentence.  
What were you writing when your computer ...?  
A) was crashing B) crash C) crashed  
D) had crashed
9. Choose the answer which correctly completes the sentence.  
I need proper shoes to go hiking in the mountains, ... the ground is rough and hard.  
A) as B) although C) when D) despite



10. Choose the answer which correctly completes the sentence.  
"She said she had met my friend two weeks before". "... she?"  
A) *Didn't* B) *Has* C) *Did* D) *Hadn't*
11. Choose the answer which correctly completes the sentence.  
His document needs ... from the school principal.  
A) *signed* B) *to sign* C) *signing*  
D) *to be signing*
12. Choose the answer which correctly completes the sentence.  
The price for that painting was very reasonable; I would gladly have paid ... he asked.  
A) *three times as much as*  
B) *three times more than*  
C) *three times more* D) *as three-times than*
13. Choose the answer which correctly completes the sentence.  
The red car isn't as expensive as the white one, but the black one is ... expensive of all.  
A) *most* B) *less* C) *the least* D) *more*
14. Choose the answer which correctly completes the sentence.  
I apologize for telling a lie, but I was trying to protect you ... the truth. Sometimes the truth hurts.  
A) *from* B) *to* C) *on* D) *for*
15. Choose the answer which correctly completes the sentence.  
The faster you drive, ... dangerous it is.  
A) *more* B) *the most* C) *most*  
D) *the more*
16. Choose the answer which correctly completes the sentence.  
Because nobody admitted breaking the window the ... class was kept in after school.  
A) *all* B) *every* C) *each* D) *whole*
17. Choose the answer which correctly completes the sentence.  
Had she found the right buyer, she ... the house.  
A) *would have sold* B) *would sell*  
C) *will sell* D) *sold*
18. Choose the answer which correctly completes the sentence.  
My parents want me ... a musician.  
A) *to become* B) *that I became*  
C) *to have become* D) *become*
19. Choose the answer which correctly completes the sentence.  
Bob had asked me to keep the news a secret, I ... anybody.  
A) *wouldn't have told* B) *would tell*  
C) *wouldn't tell* D) *hadn't told*
20. Choose the answer which correctly complete the sentence.  
The secretary said that she ... a reservation for me at the hotel.  
A) *will make* B) *had made* C) *has made*  
D) *made*
21. Choose the answer which correctly complete the sentence.  
Most students in Britain ... pay at least part of their university fees.  
A) *have to* B) *can* C) *may* D) *ought*
22. Choose the answer which correctly complete the sentence.  
It looks like rain. Have ... look at the sky.  
A) *a* B) *-* C) *the* D) *an*
23. Choose the answer which correctly completes the sentence.  
It was a chance in ... million that my cousin and I should run into each other in London.  
A) *-* B) *an* C) *the* D) *a*
- Read the text. Then choose the correct answer to question 24-26.
- In the past, before technology was used to monitor the weather accurately, people looked at the skies, watched how animals and plants behaved, and relied on signs and superstitions to forecast the weather. Indeed, some people still believe that, when cows lie down or a cat sneezes, it is going to rain. Nowadays, scientists who study the weather, called meteorologists, use many different methods to make their forecasts. Satellites monitor our weather and send information to computers at special processing stations. On the ground, weather stations all over the world record wind speeds and directions, temperature, clouds and air pressure.

24. It is clear from the passage that reasonably accurate weather forecasting ...
- A) *is now available worldwide.*
  - B) *is just one stage in an effort to control the climate.*
  - C) *is of little importance to most people in the world.*
  - D) *does not require much technological assistance.*

25. As is pointed out in the passage, before the coming of technology, ...
- A) *several methods were used in an effort to forecast the weather.*
  - B) *the only way to learn about the weather was through the behaviour of plants and animals.*
  - C) *the methods used to forecast the weather are all now regarded as completely useless.*
  - D) *people weren't really interested in weather conditions.*

26. According to the passage, it is now possible, with the aid of technology, to forecast the weather, but ...
- A) *long-term forecasts are still far from accurate.*
  - B) *changing wind speeds can affect predictions.*
  - C) *much relevant material is never processed.*
  - D) *it is still a very complex process.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Many famous people did not enjoy (27)... success in their early lives. Walt Disney, who was the creator of Mickey Mouse and the founder of his own movie production company, once was fired by a newspaper editor because he had (28)... good ideas.

- 27.
- A) *imitate*
  - B) *immediacy*
  - C) *immediately*
  - D) *immediate*

- 28.
- A) *no*
  - B) *any*
  - C) *none*
  - D) *nothing*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

One of the earliest methods of home heating, the fireplace continues (29) ... popular today. Ancient fireplaces were usually central pits in the house that also served as stoves, light sources, and (30) ... from wild animals. Modern fireplaces are sometimes valued more (31) ... their appearance than their actual heating capacities.

- 29.
- A) *was*
  - B) *been*
  - C) *to be*
  - D) *is*

- 30.
- A) *challenge*
  - B) *protection*
  - C) *comfort*
  - D) *benefit*

- 31.
- A) *at*
  - B) *for*
  - C) *after*
  - D) *on*

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *Hydro-electric dam projects on the Yangtze river.*
  - B) *The breeding of small river dolphins.*
  - C) *The danger of two breeds of dolphins disappearing.*
  - D) *The danger of hunting for the Brazilian population.*

33. What does the number 10 in the text refer to?

- A) *The percentage of Amazonian dolphins which die out every year.*
- B) *Groups of biologist who are trying to repopulate dolphins.*
- C) *The percentage of living Yangtze river dolphins.*
- D) *Governmental organizations which fight the pollution of rivers.*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Mars has two moons*
- B) *Martian soil is rocky*
- C) *Mars is larger than Earth*
- D) *It takes longer for Mars to circle the Sun than it takes Earth*

35. Man-made canals were supposedly discovered by ...

- A) *Schiaparelli*
- B) *Phobos*
- C) *Martian*
- D) *Viking I*

36. Mars has been nicknamed as ...

- A) *Martian*
- B) *Viking I*
- C) *The Red Planet*
- D) *Deimos*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000038**

Toshkent – 2014

### MATEMATIKA (INFORMATIKA BILAN)

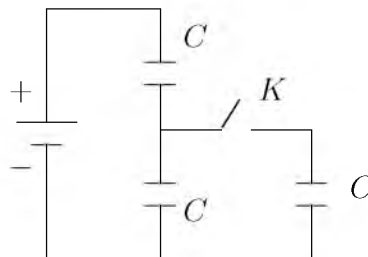
1.  $\sqrt{2^{1,5}\sqrt{5^3\sqrt{2^{1,5}\sqrt{5^3}\dots}}}$  ifodaning qiymatini toping.  
A) 10 B) 14 C) 17 D) 12
2. Rombning balandligi 12 ga va diagonallaridan biri 15 ga teng bo'lsa, uning yuzini hisoblang.  
A) 100 B) 125 C) 150 D) 180
3. Umumiy bahosi 225 dinor bo'lgan ikki xil qimmatbaho mo'ynali teri xalqaro bozorda 40% foydasi bilan sotildi. Agar birinchi xil teridan 25%, ikkinchisidan 50% foyda qilingan bo'lsa, har bir terining bahosi necha dinor bo'lgan?  
A) 100; 125 B) 200; 25 C) 80; 145 D) 90; 135
4.  $f(x+5) = x \cdot f(x) + 4$  bo'lsa,  $f(10)$  ni toping.  
A) 30 B) 24 C) 25 D) 23
5. Oltiburchakli muntazam prizma eng katta diagonal kesimining yuzi  $Q$ , prizmaning qarama-qarshi yon yoqlari orasidagi masofa  $b$  bo'lsa, prizmaning hajmini hisoblang.  
A)  $\frac{4bQ}{3}$  B)  $\frac{3bQ}{2}$  C)  $\frac{3bQ}{4}$  D)  $\frac{bQ}{2}$
6.  $2^{x^2-16} \leq 1$  tengsizlikni yeching.  
A)  $[-4; 4]$  B)  $[0; 4)$  C)  $(-2; 2)$  D)  $(0; 2)$
7.  $y = 1994x^2 + 2013x - 1$  funksiya grafigi qaysi choraklardan o'tadi?  
A) I, II, III B) II, IV C) I, II, III, IV D) I, II, IV
8.  $\frac{2^{3a+0,5} + \sqrt{2}}{4^a - 2^a + 1} \cdot (2^{a+0,5} - \sqrt{2}) - 2^{2a+1}$  ni hisoblang.  
A)  $-2^a$  B)  $4^a\sqrt{2}$  C)  $2\cos 7\pi$  D) 2
9.  $f(x) = x^2 + x - 1$  funksiya uchun  $f'(x) = 0$  bo'lsa,  $x$  ning qiymatini toping.  
A)  $-\frac{1}{2}$  B)  $-\frac{3}{4}$  C)  $-\frac{2}{3}$  D)  $\frac{1}{3}$
10. Uzunligi 17 ga teng bo'lgan kesmaning uchlari tekislikdan 4 va 12 ga teng uzoqlikda yotishi ma'lum bo'lsa, kesmaning tekislikdagi proyeksiyasi uzunligini toping.  
A) 15 B) 16 C) 10 D) 12
11. Parallelogramning diagonali 8 sm li tomoni bilan  $60^\circ$  li, ikkinchi tomoni bilan esa  $75^\circ$  li burchak tashkil etadi. Ushbu diagonalning uzunligini (sm) toping.  
A)  $4(\sqrt{3} + 1)$  B)  $8(\sqrt{3} + 1)$  C)  $4(\sqrt{3} - 1)$  D)  $8(\sqrt{3} - 1)$
12.  $2x^2 + 5y^2 - 4xy - 2y - 4x + 5 = 0$  tenglamani qanoatlantiruvchi nechta  $(x, y)$  juftlik mavjud?  
A) 3 ta B) mavjud emas C) 2 ta D) 1 ta
13. 
$$\begin{cases} \frac{x+3}{3-x} < 2, \\ x^3 < 16x, \\ 4 \geq x^2 \end{cases}$$
 tengsizliklar sistemasini yeching.  
A)  $(4; 6]$  B)  $[2; 3]$  C)  $(3; 5)$  D)  $(0; 1)$
14. To'g'ri burchakli uchburchakning katetlari yig'indisi gipotenuzadan 8 sm ortiq. Agar uchburchakning perimetri 48 sm bo'lsa, uning yuzini ( $\text{sm}^2$ ) toping.  
A) 148 B) 60 C) 52 D) 96
15. Agar arifmetik progressiyada  $a_1 + a_2 + a_3 = 0$  va  $a_1^2 + a_2^2 + a_3^2 = 50$  bo'lsa, uning ayirmasini toping.  
A) 2 B)  $\pm 5$  C) 4 D) 1
16. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $4\sqrt{2}$  bo'lsa, aylanaga ichki chizilgan kvadratning yuzini hisoblang.  
A) 64 B) 48 C) 50 D) 52
17. Qirralari 6 ga teng bo'lgan kubga ichki chizilgan sharning hajmini toping.  
A)  $72\pi$  B)  $27\pi$  C)  $108\pi$  D)  $36\pi$
18.  $y = 2\cos^2\frac{x}{2} - \text{tg}x \cdot \text{ctg}x$  funksiyaning qiymatlari to'plamini toping.  
A)  $[0; 3]$  B)  $(-1; 0) \cup (0; 1)$  C)  $(1; 2) \cup (2; 3)$  D)  $[1; 3]$
19. Barcha ikki xonali sonlar ko'paytmasidan tashkil topgan ko'paytmada 7 sonining eng katta darajasini aniqlang.  
A) 13 B) 14 C) 15 D) 16
20. Rombning tomoni  $10\sqrt{3}$  ga, o'tmas burchagi  $120^\circ$  ga teng. Rombga ichki chizilgan doiraning yuzini hisoblang.  
A)  $48,75\pi$  B)  $58,6\pi$  C)  $52,25\pi$  D)  $56,25\pi$

21. Silindrga shar ichki chizilgan. Silindr o'q kesimining diagonali  $l$  ga teng bo'lsa, shar sirtining yuzini hisoblang.  
A)  $\frac{\pi}{3} \cdot l^2$  B)  $\frac{\pi}{4} \cdot l^2$  C)  $\frac{\pi}{2} \cdot l^2$  D)  $\pi \cdot l^2$
22.  $\sqrt{5 - \sqrt{2x - 7}} = 2$  tenglamaning ildizlari quyidagi oraliqlardan qaysi biriga tegishli?  
A)  $(-1; 1)$  B)  $[4; 6)$  C)  $[1; 3)$  D)  $[3; 4)$
23. Doiraning yuzasi 44% ga oshirilsa, uning radiusi necha foizga oshadi?  
A) 20 B) 30 C) 25 D) 35
24.  $ABC$  uchburchak uchlaridan va shu uchburchakning medianalari kesishgan  $M$  nuqtadan  $\alpha$ -tekislikka tushirilgan perpendikularlar asoslari mos ravishda  $A_1, B_1, C_1, M_1$  nuqtalarda yotsa,  $AA_1 + BB_1 + CC_1$  va  $MM_1$  uzunliklari nisbatini toping.  
A) 1 B) 2 C)  $\frac{3}{2}$  D) 3
25.  $n \in N$  va  $\frac{1}{2} + \frac{1}{3} + \frac{1}{7} + \frac{1}{n}$  yig'indi butun son bo'lsa, quyidagilardan qaysi biri noto'g'ri?  
A)  $n$  soni 2 ga bo'linadi  
B)  $n$  soni 6 ga bo'linadi C)  $n > 84$   
D)  $n$  soni 3 ga bo'linadi
26.  $\sin x = [x]$  tenglamani yeching. (Bu yerda  $[x]$ —butun qism.)  
A)  $\emptyset$   
B)  $0, \frac{\pi}{2}, \pi$   
C)  $x = \pi k; x = \frac{\pi}{2} + \pi k; k \in Z$   
D)  $0$  va  $\frac{\pi}{2}$
27.  $f(x) = \cos x + e^x, F(x) = ?$   
A)  $\sin x - \frac{1}{x}e^x + c$  B)  $-\cos x + e^x + c$   
C)  $\sin x + e^x + c$  D)  $-\sin x + e^x + c$
28.  $cx^2 + \sqrt{20}x + c + 2 > 0$  tengsizlik yechimga ega bo'lmaydigan  $c$  ning butun qiymatlari orasidan eng kattasini toping.  
A) -4 B) -2 C) -6 D) -1
29. Doiraning yuzi  $6,25\pi$  ga teng. Bu doirada uzunligi 3 ga teng bo'lgan vatar o'tkazilgan. Doira markazidan vatargacha bo'lgan masofani toping.  
A) 2,5 B) 4 C) 3 D) 2
30. Natural  $m$  va  $n$  sonlar uchun  $\frac{m}{4} + n = 8$  bo'lsa,  $m$  qabul qilishi mumkin bo'lgan qiymatlar ichida eng kattasini toping.  
A) 24 B) 28 C) 20 D) 16
31. 3 terabayt axborotni baytlarda ifodalang.  
A)  $3^{40}$  bayt B)  $3 \cdot 2^{40}$  bayt C)  $6^{40}$  bayt  
D)  $2^{40}$  bayt
32. Tashkil etuvchi barcha sodda mulohazalar rost bo'lganda quyidagilardan qaysi birining natijasi rost bo'ladi?  
A)  $(A \vee \neg B) \wedge \neg(C \vee D)$   
B)  $A \wedge \neg B \vee C \wedge \neg D$   
C)  $A \vee B \wedge \neg C \vee \neg D$   
D)  $\neg A \vee (B \vee C) \wedge \neg D$
33. Faylning xususiy nomi nechta belgidan iborat bo'lishi mumkin?  
A) 1 tadan 8 tagacha  
B) 1 tadan 64 tagacha  
C) operatsion sistema va dasturga bog'liq  
D) 1 tadan 255 tagacha
34. MS Excel 2003 da berilgan shartni qanoatlantiruvchi satrlarni ajratib olish amali qanday ataladi?  
A) filtrlash B) tartiblash C) avtofiltr  
D) hisobga olish
35. Elektron pochta manziliga oid mulohazalardan xatosini aniqlang.  
A) E-mail manzilida @ belgisi ishtirok etmaydi  
B) E-mail manzilida probel (bo'shliq) belgisi ishtirok etmaydi  
C) E-mail manzilida raqamlar ishtirok etadi  
D) E-mail manzilida lotin harflari ishtirok etadi
36. Paskal dasturi lavhasidagi hisob natijasini aniqlang.  
begin a:=12; b:=14; c:=10; if(a>b) or (b>c) then y:=a+b-c else y:=a-b+c; writeln(y); end.  
A) 8 B) 6 C) 16 D) 14

## FIZIKA

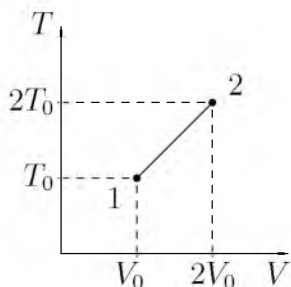
- Kuchlanganlik vektori gorizontal yo'nalgan, moduli  $1,73 \text{ kV/sm}$  ga teng bo'lgan bir jinsli elektr maydonida  $1 \text{ m}$  uzulikdagi vazinsiz, cho'zilmas ipga elektr zaryadi  $1 \mu\text{C}$ , massasi  $10 \text{ g}$  metall sharcha osib qo'yilgan. Agar elektr maydoni keskin yo'qotilsa sharcha qanday maksimal kinetik energiyaga (mJ) ega bo'ladi?  
A) 40 B) 30 C) 60 D) 50
- Elektropoyezdning uchinchi vagoni oldida turgan kuzatuvchi harakat boshlagan vagonning  $5 \text{ s}$  davomida o'tganini, poyezdning oxiri o'tguncha esa  $20 \text{ s}$  vaqt o'tganini aniqlagan bo'lsa, poyezdning vagonlari soni nechta? (Poyezd harakati tekis tezlanuvchan.)  
A) 16 B) 15 C) 14 D) 18
- Hozirgi zamon texnikasi yordamida  $1 \text{ pPa}$  vakuum hosil qilish mumkin. Shunda  $1 \text{ sm}^3$  hajda  $300 \text{ K}$  temperaturada nechta gaz molekulasi qoladi?  
A) 240 B) 200 C) 220 D) 300
- Massasi  $5000 \text{ t}$  bo'lgan poyezd  $36 \text{ km/soat}$  tezlik bilan harakatlanmoqda. Agar tormozlanish kuchi  $0,25 \text{ MN}$  ga teng bo'lsa, tormozlangandan keyin bir minut ichida poyezd qancha masofani (m) o'tadi?  
A) 51 B) 510 C) 5100 D) 5000
- Osilgan prujinaga yuk  $0,5 \text{ s}$  davr bilan tebranmoqda. Agar yuk prujinadan olinsa, prujina qanchaga qisqaradi (sm)?  
A) 5,4 B) 39,7 C) 6,3 D) 2,0
- G'altakning o'lchamlarini uning induktivligi 2 marta ortadigan qilib o'zgartirildi. G'altakdan o'tayotgan tokni 2 marta kamaytirildi. G'altakning magnit maydon energiyasi qanday o'zgaradi?  
A) o'zgarmaydi B) 2 marta ortadi  
C) 4 marta ortadi D) 2 marta kamayadi

- Quyidagi sxema bo'yicha K kalit ochiq paytidagi  $q$  zaryad kalit yopilgandan keyin nimaga teng bo'ladi? Ikkala holda ham kuchlanish o'zgarmas deb hisoblang.



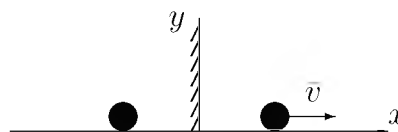
- A)  $4q/3$  B)  $4q$  C)  $3q$  D)  $3q/4$
- Ma'lum tezlik bilan harakatlanadigan jismning kinetik energiyasi  $50 \text{ MJ}$ , impulsi  $10 \text{ kJ}\cdot\text{m/s}$  bo'lsa, massasini (kg) toping.  
A) 1 B) 2 C) 1,5 D) 0,5
- O'tkazgich kesim yuzini 2 marta, uzunligini 5 marta oshirsak, uning qarshiligi qanday o'zgaradi?  
A) 2,5 marta oshadi B) 3 marta kamayadi  
C) 2,5 marta kamayadi D) 3 marta oshadi
- Massasi  $60 \text{ kg}$  bo'lgan sirk artisti tortib qo'yilgan to'rga  $10 \text{ m}$  balandlikdan sakramoqda. Agar to'r  $1 \text{ m}$  egilsa, artist qanday o'rtacha kuch (N) bilan bosadi?  
A)  $12 \cdot 10^3$  B)  $6,6 \cdot 10^3$  C)  $1,2 \cdot 10^4$   
D)  $0,6 \cdot 10^3$
- Slindrik idishga teng massali simob ( $\rho_{sim}=13600 \text{ kg/m}^3$ ) va kerosin ( $\rho_{ker}=800 \text{ kg/m}^3$ ) quyildi. Ularning umumiy balandligi  $18 \text{ sm}$  bo'lsa, idish tubidan  $1 \text{ sm}$  yuqoridagi bosimni (Pa) aniqlang.  $g=10 \text{ m/s}^2$   
A) 680 B) 1224 C) 1360 D) 2720
- Aylanma harakat uchun dinamikaning asosiy qonuni formulasini belgilang.  
A)  $\vec{\mu} = I\vec{\beta}$   
B)  $M \cdot \Delta t = I\vec{\omega} - I\vec{\omega}_0$   
C)  $I\omega$   
D)  $\Delta Fr = \Delta mr^2\beta$
- $2 \text{ mol}$  geliy  $30^\circ\text{C}$  dan  $-70^\circ\text{C}$  gacha sovutilganda, uning ichki energiyasi (kJ) qanchaga kamayadi?  
A) 25 B) 5 C) 8,31 D) 2,5

14. Rasmda bir atomli ideal gaz 1 holatdan ikkinchi holatga o'tish jarayonida temperaturasini hajmga bog'lanishini grafigi tasvirlangan. Bu jarayonda gazning ichki energiyasi 45 kJ ga ortgan bo'lsa, gaz jami qancha issiqlik (kJ) qabul qilgan?



- A) 90 B) 45 C) 0 D) 75
15. Buyum va uning tasviri orasidagi masofa  $l$  ga teng bo'lib, tasvir buyumdan  $n$  marta katta bo'lsa, linzaning fokus masofasini ( $F$ ) toping.
- A)  $\frac{l(n+1)}{n^2}$  B)  $\frac{n+1}{n^2}$  C)  $\frac{n}{(n+1)^2l}$   
D)  $\frac{ln}{(n+1)^2}$
16. 100 mol simob qancha hajmni (l) egallaydi? ( $M = 200 \frac{g}{mol}$ ,  $\rho = 13600 \frac{kg}{m^3}$ )
- A) 1,52 B) 2,23 C) 1,66 D) 1,47
17. Tebranish konturida kondensator plastinkalaridagi  $q$  zaryad  $t$  vaqt o'tishi bilan  $q = 10^{-6} \cos 10^4 \pi t$  qonun bo'yicha o'zgaradi. Zaryadning amplituda ( $C$ ) qiymatini ko'rsating.
- A)  $10^{-6}$  B)  $\pi \cdot 10^{-6}$  C)  $10^{-4}$  D)  $10^{-9}$
18. Yadro reaksiyasida tushirib qoldirilgan zarrani aniqlang.  
 ${}^7_3Li + ? \rightarrow {}^{10}_5B + {}^1_0n$
- A)  $\beta$  B)  $\gamma$  C)  $\alpha$  D)  $n$
19. Gorizontga nisbatan  $53^\circ$  burchak ostida  $v_0$  tezlik bilan otlangan jismning 20 m balandlikdan erkin tushgan jism bilan uchish vaqtlari teng bo'lsa,  $v_0$  ni (m/s) toping.  $\cos 53^\circ = 0,6$
- A) 13,4 B) 12,5 C) 19,2 D) 16,3

20. Sharcha yassi ko'zgu bilan bog'langan sistemada  $\vec{v}$  tezlik bilan kuzgudan uzoqlashmoqda. Sharcha tasvirini tezligi nimaga teng?



- A)  $-v$  B)  $2v$  C)  $v$  D)  $-2v$
21. Suv tubidan qalqib chiqayotgan pufakchanning hajmi suv sirtiga yaqinlashganda  $n$  marta ortgan bo'lsa, suvning chuqurligini aniqlash ifodasini ko'rsating.  $P_a$  - atmosfera bosimi,  $\rho_s$  - suv zichligi.
- A)  $\frac{P_a(n-1)}{\rho_s g}$  B)  $\frac{P_a g}{\rho_s(n-1)}$  C)  $\frac{P_a}{\rho_s(n-1)g}$   
D)  $\frac{\rho_s(n-1)}{P_a g}$
22. Qarshiliklari  $R_1=20 \Omega$  va  $R_2=10 \Omega$  bo'lgan o'tkazgichlar o'zaro parallel ulangan holda elektr tarmog'iga ulandi. Tarmoqdagi tok kuchi 300 mA ga teng bo'lsa, birinchi o'tkazgichda 1 minut ichida qancha issiqlik miqdori (J) ajralib chiqadi?
- A) 24 B) 36 C) 12 D) 15
23. Induktivligi 0,2 H bo'lgna g'altakdan 10 A tok o'tmoqda. G'altak ichidagi magnit maydon energiyasini (J) aniqlang.
- A) 0,1 B) 100 C) 1 D) 10
24.  $I = I_0 \cos^2 \alpha$  ko'rinishdagi qonun qanday ataladi?
- A) Malus qonuni B) Biger-Lambert qonuni  
C) Gugins qonuni D) Frenal fonuni
25. Massalari  $m$  va  $2m$  bo'lgan toshlar bir xil balandlikdan, bir vaqtda erkin tua boshladi. Qaysi toshning yerga urilish vaqtdagi tezligi katta bo'ladi?
- A) ularning hajmiga bog'liq  
B) birinchi toshning C) ikkinchi toshning  
D) tezliklari teng
26. Temperatura ortishi bilan yarimo'tkazgichning qarshiligi ...
- A) avval ortadi, keyin kamayadi B) kamayadi  
C) o'zgarmaydi D) ortadi



27. Ichki qarshiligi  $0,5 \Omega$  bo'lgan tok manbaiga  $3 \Omega$ li tashqi qarshilik ulanganda, tok manbayi qisqichlaridagi kuchlanish  $6 \text{ V}$  bo'lgan. Manbaning to'la quvvatini ( $W$ ) aniqlang.  
A) 12 B) 18 C) 14 D) 6
28. Quyida ifodalangan qonun qanday nomlanadi?  
**Agar jism bir necha kuch ta'sirida harakatlanayotgan bo'lsa, har bir kuch boshqa kuchlar bilan birga yoki yakka o'zi ta'sir qilayotganidan qat'iy nazar jismga hamma vaqt bir xil tezlanish beradi.**  
A) *Impulsning saqlanish qonuni*  
B) *Kuchlar ta'sirining mustaqillik qonuni*  
C) *Nyutonning II qonuni*  
D) *Inersiya qonuni*
29. Bosim  $100 \text{ Pa}$ , molekullari konsentratsiyasi  $10^{25} \text{ m}^{-3}$  bo'lganda gazning temperaturasi ( $K$ ) toping.  
A) 725 B) 650 C) 500 D) 800
30. Energiyasi  $3 \cdot 10^{-16} \text{ J}$  bo'lgan nurlanish fotonining to'lqin uzunligi ( $m$ ) nimaga teng?  
 $c=3 \cdot 10^8 \text{ m/s}$ ,  $h=6,6 \cdot 10^{-34} \text{ J}\cdot\text{s}$   
A)  $66 \cdot 10^{-12}$  B)  $6,6 \cdot 10^{-10}$  C)  $6,6 \cdot 10^{-11}$   
D)  $66 \cdot 10^{-10}$
31. Uzunligi  $500 \text{ km}$ , ko'ndalang kesim yuzi  $5 \text{ mm}^2$  bo'lgan aluminiy simdan  $10 \text{ mA}$  tok o'tayotgan bo'lsa, uning uchlaridagi kuchlanishni ( $V$ ) toping. Aluminiyning solishtirma qarshiligi  $2,8 \cdot 10^{-8} \Omega \cdot \text{m}$ .  
A) 21 B) 25 C) 28 D) 14
32. Tebranish konturidagi tok kuchining vaqt bo'yicha o'zgarish tenglamasi quyidagi ko'rinishda berilgan  $I = 0,02 \sin 400\pi t$  (A). Konturning induktivligi  $1 \text{ H}$  ga teng. Kondensator qoplamalaridagi maksimal potentsiallar farqini ( $V$ ), magnit va elektr maydonlarning maksimal energiyasini ( $J$ ) toping.  
A) 23;  $7 \cdot 10^{-4}$  B) 25,1;  $2 \cdot 10^{-4}$  C) 26;  $9 \cdot 10^{-4}$   
D) 24;  $3 \cdot 10^{-4}$
33. Agar prujinani  $0,01 \text{ m}$  siqish uchun  $10 \text{ N}$  kuch kerak bo'lsa  $0,08 \text{ m}$  ga siqish uchun ketgan kuchning ishini ( $J$ ) toping.  
A) 1,6 B) 3,2 C) 6,4 D) 0,8
34. Og'irligi  $750 \text{ N}$  bo'lgan odamni ko'tarib tura oladigan  $50 \text{ sm}$  qalinlikdagi yassi muzning yuzasi eng kamida qancha ( $\text{m}^2$ ) bo'lishi mumkin?  
A) 1,75 B) 1 C) 1,53 D) 1,25
35. Elektron geliy atomini ionlashi uchun kamida qanday tezlikka ( $\text{m/s}$ ) ega bo'lishi kerak? Geliy atomining ionizatsiya energiyasi  $24,5 \text{ eV}$ . Elektron massasi  $9,1 \cdot 10^{-31} \text{ kg}$ .  
A)  $2,93 \cdot 10^6$  B)  $3,6 \cdot 10^6$  C)  $29,4 \cdot 10^6$   
D)  $2,0 \cdot 10^6$
36. Koptok yerdan qaytib  $2h$  balandlikka ko'tarilishi uchun uni,  $h$  balandlikdan pastga qanday  $v_0$  boshlang'ich tezlik bilan tashlash kerak? Urilish absolut elastik deb hisoblang.  
A)  $v = \sqrt{2gh}$  B)  $v = g/h$  C)  $v = gh$   
D)  $v = 2gh$

### INGLIZ TILI

- Choose the answer which correctly completes the sentence.  
The early pioneers in the US ... mainly on hunting and fishing for their food.  
A) *used to rely* B) *were using to rely*  
C) *used to relying* D) *were used to rely*
- Choose the answer which correctly complete the sentence.  
I hate you ... about your duties.  
A) *to forget* B) *to have forgotten* C) *forget*  
D) *forgot*
- Choose the answer which correctly complete the sentence.  
Sara, my next door neighbour, has a car, but she ... it very often.  
A) *hasn't been using* B) *doesn't use*  
C) *isn't using* D) *hasn't used*
- Choose the answer which correctly completes the sentence.  
He wanted to write to her but she ... give him her address.  
A) *don't* B) *hasn't* C) *wouldn't*  
D) *hadn't*
- Choose the answer which correctly completes the sentence.  
On Sunday she went shopping at ... Macy's and bought an expensive overcoat.  
A) *the* B) *an* C) *a* D) -

6. Choose the answer which correctly completes the sentence.  
It is not ... that the Arabs, who possessed a remarkable gift for astronomy, geometry and mathematics were also skillful mapmakers.  
A) *surprised* B) *surprise* C) *surprising*  
D) *surprises*
7. Choose the answer which correctly completes the sentence.  
That film was released only two days ago, so you ... the film last week.  
A) *couldn't see* B) *needn't see*  
C) *couldn't have seen* D) *mustn't see*
8. Choose the answer which correctly completes the sentence.  
I am afraid there are ... vacancies in the company at present.  
A) *no* B) *neither* C) *not* D) *none*
9. Choose the answer which correctly completes the sentence.  
This is the shop ... sells the best fruit.  
A) *who* B) *where* C) *that* D) *what*
10. Choose the answer which correctly completes the sentence.  
Most of the forest ... cut down and the trees remaining are now under threat.  
A) *have been* B) *has been* C) *were*  
D) *had been*
11. Choose the answer which correctly complete the sentence.  
There was a long line in front of the theatre.  
We ... wait almost an hour to buy our tickets.  
A) *had to* B) *need* C) *were able* D) *must*
12. Choose the answer which correctly complete the sentence.  
I have just had a quarrel with my parents.  
What would you do if you ... me?  
A) *would be* B) *are* C) *had been*  
D) *were*
13. Choose the answer which correctly completes the sentence.  
Alice is not very happy at her present job as a nurse. She wishes she ... to a nursing school.  
A) *didn't do* B) *went* C) *had gone*  
D) *hadn't gone*
14. Choose the answer which correctly completes the sentence.  
A young woman walked into the office. She ... a baby.  
A) *carries* B) *carrying* C) *was carrying*  
D) *had carried*
15. Choose the answer which correctly completes the sentence.  
When he lost his job, he stopped ... expensive clothes.  
A) *to buy* B) *buying* C) *buy* D) *bought*
16. Choose the answer which correctly complete the sentence.  
Sorry about the mess - I ... the house.  
A) *will have painted* B) *have been painting*  
C) *had painted* D) *painted*
17. Choose the answer which correctly completes the sentence.  
He still watched the late film ... being very tired.  
A) *in spite* B) *however* C) *although*  
D) *despite*
18. Choose the answer which correctly completes the sentence.  
It took me one and ... half hours to get there.  
A) *a* B) *the* C) *-* D) *an*
19. Choose the answer which correctly completes the sentence.  
Meeting begins at 6 p.m. You won't be late, ...?  
A) *won't you* B) *you will be* C) *will you*  
D) *will you be*
20. Choose the answer which correctly completes the sentence.  
"Don't let anyone into the house."  
Mrs Jackson told her son ... anyone into the house.  
A) *didn't let* B) *not to let* C) *don't let*  
D) *not let*
21. Choose the answer which correctly complete the sentence.  
- Hello. Can I speak to Ms. Richards, please?  
- I'm sorry. She's ... on holiday at the moment.  
A) *away* B) *off* C) *about* D) *out*

22. Choose the answer which correctly complete the sentence.

Staying in a hotel costs ... renting a room in a dormitory for a week.

- A) *twice more as*    B) *as much twice as*  
C) *twice more than*    D) *twice as much as*

23. Choose the answer which correctly completes the sentence.

The roads were slippery and we ... had an accident this morning.

- A) *near*    B) *next*    C) *nearer*    D) *nearly*

Read the text. Then choose the correct answer to question 24-26.

One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.

24. The passage tells us that the shrew ...
- A) *is similar to a mouse in appearance*  
B) *lives in dense forests.*  
C) *is in the habit of eating every two hours.*  
D) *has a very short life span.*
25. The passage states that shrews ...
- A) *eat each other when they can't find any food.*  
B) *are found in huge numbers in Australia.*  
C) *are the smallest living mammals.*  
D) *eat rarely but in large amounts at a time.*

26. From what is stated in the passage, we can infer that a shrewish woman is someone who ...

- A) *has tiny eyes and ears.*  
B) *is very fond of velvet and fur.*  
C) *easily gets annoyed.*  
D) *is noticeably smaller than the average.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Superstitions are (27)... that some things can't be explained by reason and that there are certain objects or actions that bring good or bad luck. (28)... superstitions are old and people usually have no idea where they came from.

- 27.
- A) *believes*    B) *beliefs*    C) *believer*  
D) *believe*
- 28.
- A) *None*    B) *Most*    C) *Much*    D) *The most*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

- 29.
- A) *familiarity*    B) *familiarly*    C) *familiarize*  
D) *familiar*
- 30.
- A) *is*    B) *are*    C) *have been*    D) *will be*

31.

- A) *with* B) *of* C) *into* D) *towards*

Read the text. Then choose the correct answer to question 32-33

One chilly autumn morning in 1945, five thousand shoppers crowded the pavements outside Gimbels Department Store in New York City. The day before, Gimbels had taken out a full-page newspaper advertisement in the *New York Times*, announcing the sale of the first ballpoint pens in the United States. Within six hours, Gimbels had sold its entire stock of ten thousand ballpoints at \$12.50 each—approximately \$130 at today's prices.

In fact this “new” pen was not new after all, and was just the latest development in a long search for the best way to deliver ink to paper. In 1884 Lewis Waterman had patented the fountain pen, giving him the sole rights to manufacture it. This marked a significant leap forward in writing technology, but fountain pens soon became notorious for leaking. In 1888, a leather tanner named John Loud devised and patented the first “rolling-pointed marker pen” for marking leather. Loud's design contained a reservoir of ink in a cartridge and a rotating ball point that was constantly bathed on one side with ink.

Loud's pen was never manufactured, however, and over the next five decades, 350 additional patents were issued for similar ball-type pens, though none advanced beyond the design stage. Each had their own faults, but the major difficulty was the ink: if the ink was thin, the pens leaked, and if it was too thick, they clogged. Depending on the climate or air temperature, sometimes the pens would do both. Almost fifty years later, Ladislav and Georg Biro, two Hungarian brothers, **came up with** a solution to this problem. In 1935 Ladislav Biro was working as a journalist, editing a small newspaper. He became frustrated by the amount of time he wasted filling fountain pens with ink and cleaning up ink smudges. Ladislav and Georg set about making models of new pen designs and creating better inks to use in them. Ladislav observed the ink in newspaper printing dried rapidly, leaving the paper dry and smudge-free. He was determined to construct a pen using the same type of ink. However, the thicker ink would not flow from a regular pen nib so he had to develop a new type of point. Biro came up with the idea of fitting his

pen with a tiny ball bearing in its tip. As the pen moved along the paper, the ball bearing rotated and picked up ink from the ink cartridge which it delivered to the paper.

32. The problem with the ballpoint pens invented between 1888 and 1935 was that ...
- A) *they could not write on ordinary paper*  
 B) *the technology to manufacture them did not exist*  
 C) *they cost a great deal of money to manufacture*  
 D) *they were affected by weather conditions*
33. What does “**came up with**” in bold mean?
- A) *to get rid of* B) *to move towards*  
 C) *to reject* D) *to suggest*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deimos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?
- A) *Mars has two moons*
  - B) *Martian soil is rocky*
  - C) *Mars is larger than Earth*
  - D) *It takes longer for Mars to circle the Sun than it takes Earth*
35. Man-made canals were supposedly discovered by ...
- A) *Phobos*
  - B) *Viking I*
  - C) *Martian*
  - D) *Schiaparelli*
36. Mars has been nicknamed as ...
- A) *The Red Planet*
  - B) *Deimos*
  - C) *Viking I*
  - D) *Martian*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000039**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1. Silindrga shar ichki chizilgan. Silindr o'q kesimining diagonali  $l$  ga teng bo'lsa, shar sirtining yuzini hisoblang.

A)  $\frac{\pi}{2} \cdot l^2$     B)  $\frac{\pi}{3} \cdot l^2$     C)  $\frac{\pi}{4} \cdot l^2$     D)  $\pi \cdot l^2$

2. Rombning tomoni  $10\sqrt{3}$  ga, o'tmas burchagi  $120^\circ$  ga teng. Rombga ichki chizilgan doiraning yuzini hisoblang.

A)  $48,75\pi$     B)  $56,25\pi$     C)  $58,6\pi$     D)  $52,25\pi$

3.  $0,25 < \frac{y^2 - 0,25y + 1}{1 + y^2} < \frac{15}{16}$  tengsizlikning tub sonlardan iborat yechimlari nechta?

A) 2    B) 5    C) 4    D) 3

4.  $\sin x = [x]$  tenglamani yeching. (Bu yerda  $[x]$  – butun qism.)

A)  $\emptyset$

B) 0 va  $\frac{\pi}{2}$

C)  $x = \pi k$ ;  $x = \frac{\pi}{2} + \pi k$ ;  $k \in Z$

D) 0,  $\frac{\pi}{2}$ ,  $\pi$

5.  $y = \arccos\left(5^{2x^2+5x+2}\right) + \lg\left(\frac{x^2+5x+6}{x+2}\right)$  funksiyaning aniqlanish sohasini toping.

A)  $[-2; -\frac{1}{2}]$     B)  $(-3; \infty)$     C)  $[-2; \infty)$

D)  $(-2; -\frac{1}{2}]$

6.  $x^2 + 2\sqrt{x^2 + 6x + 13} = -6x - 5$  tenglama ildizlarining yig'indisini toping.

A) -6    B) -13    C) -3    D) -2

7. Agar uch xonali sondan 6 ni ayirsak, ayirma 7 ga bo'linadi, 7 ni ayirsak, ayirma 8 ga bo'linadi, 8 ni ayirsak, ayirma 9 ga bo'linadi. Bu sonni toping.

A) 167    B) 503    C) 143    D) 936

8.  $\left| \frac{2x^5}{x^4 - 16} \right| = \frac{2x^5}{16 - x^4}$  tenglamaning barcha natural yechimlari yig'indisidan eng katta manfiy butun yechimi ayirmasini toping.

A) 2    B) 1    C) 4    D) 3

9.  $f(x) = e^{2x-4} + 2\ln x$ ,  $f'(2) = ?$

A) 5    B) 2    C) 4    D) 3

10.  $\frac{x^{\frac{1}{2}} + 1}{x + x^{\frac{1}{2}} + 1} : \frac{1}{x^{1,5} - 1}$  ifodani soddalashtiring.

A)  $x - 1$     B)  $1 - x$     C)  $x + 1$     D) 1

11.  $\int x e^{-3x^2} dx$  ni hisoblang.

A)  $-\frac{1}{6}e^{-3x^2} + c$     B)  $-\frac{1}{6}e^{3x^2} + c$

C)  $\frac{1}{6}e^{-3x} + c$     D)  $\frac{1}{6}e^{-3x^2} + c$

12.  $ABC$  uchburchakda  $a=3$ ;  $b=5$ ;  $\angle C=60^\circ$  bo'lsa,  $c$  ni toping.

A)  $\sqrt{19}$     B)  $\sqrt{23}$     C)  $\sqrt{21}$     D)  $\sqrt{17}$

13. Sharning radiusi  $\frac{\sqrt{48}}{\sqrt{\pi}}$  ga teng. Radiusning oxiridan u bilan  $60^\circ$  li burchak tashkil etadigan kesuvchi tekislik o'tkazilgan. Kesimning yuzini toping.

A) 8    B) 14    C) 16    D) 12

14.  $\frac{x^2 - (m-4)x - 4m}{x^2 + (1-m)x - m}$  ni hisoblang.

A)  $\frac{x+4}{x+1}$     B)  $\frac{x-4}{x-1}$     C)  $\frac{x-4}{x-2}$     D)  $\frac{x-1}{x+2}$

15. Ishorasi almashinuvchi geometrik progressiyaning birinchi hadi  $-2$  ga, uchinchi hadi  $-8$  ga teng bo'lsa, shu progressiyaning dastlabki 6 ta hadi yig'indisini toping.

A) 36    B) 42    C)  $-42$     D)  $-36$

16.  $31 \cdot 52 - 93 \cdot 4 + 57 \cdot 25 - 19 \cdot 35 + 2 \cdot (-10)^3$

A) 1000    B) 4000    C) 0    D) -1000

17. Uchta butun son tashkil etgan arifmetik progressiyada birinchi hadi 1 ga teng. Agar ikkinchi hadga 3 qo'shilsa, uchinchi kvadratga ko'tarilsa, geometrik progressiya hosil bo'ladi. Uchinchi sonni toping.

A) 8    B) 7    C) 9    D) 6

18.  $\sqrt[3]{x+2} + \sqrt[3]{x+3} + \sqrt[3]{x+4} = 0$  tenglama ildizlarining yig'indisini toping.

A) 2    B) -5    C) -3    D) 1

19.  $ABC$  uchburchak uchlaridan va shu uchburchakning medianalari kesishgan  $M$  nuqtadan  $\alpha$ -tekislikka tushirilgan perpendikularlar asoslari mos ravishda  $A_1, B_1, C_1, M_1$  nuqtalarda yotsa,  $AA_1 + BB_1 + CC_1$  va  $MM_1$  uzunliklari nisbatini toping.

A)  $\frac{3}{2}$  B) 3 C) 2 D) 1

20.  $y = \frac{3x+1}{x+2}$  funksiyaning qiymatlar to'plamini toping.

A)  $(-\infty; -\frac{1}{3})$

B)  $[-2; -\frac{1}{3}]$

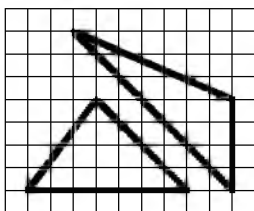
C)  $(-\infty; -2)$

D)  $(-\infty; 3) \cup (3; \infty)$

21.  $f(x) = \frac{1}{|x^2 + 2x + 1| + 2} + 1,5$  funksiyaning eng katta qiymatini toping.

A) 2 B) 2,5 C) 1,5 D) 0,5

22. Rasmda qanday uchburchaklar tasvirlangan?



A) tengdosh

B) perimetrlari bir xil

C) yuzalari har xil

D) uchburchaklardan biri to'g'ri burchakli

23.  $y = \ln ||x| + 1|$  funksiyaning aniqlanish sohasini toping.

A)  $(0; \infty)$

B)  $(-\infty; \infty)$

C)  $(1; \infty)$

D)  $(-\infty; 0)$

24. To'g'ri burchakli uchburchakning katetlaridan biri 15 sm ga, ikkinchi katetning gipotenuzadagi proyeksiyasi esa 16 sm ga teng. Bu uchburchakka ichki chizilgan aylananing radiusini (sm) toping.

A) 3 B) 6 C) 5 D) 4

25. Radiusi 1 ga teng bo'lgan aylana uchta yoyga bo'lingan. Ularga mos markaziy burchaklari 1, 2 va 3 sonlariga proporsional bo'lsa, yoylardan eng kattasining uzunligini toping.

A)  $\frac{3\pi}{2}$  B)  $\pi$  C)  $\frac{\pi}{3}$  D)  $\frac{2\pi}{3}$

26.  $x^2 + \frac{16}{x^2} + (x - \frac{4}{x}) - 28 = 0$  tenglamaning ildizlari yig'indisini toping.

A) 1 B) 0 C) 4 D) -1

27. Tekislikdan  $a$  uzoqlikda joylashgan nuqtadan tekislik bilan  $30^\circ$  li burchak hosil qiluvchi ikkita og'ma o'tkazilgan. Ularning tekislikdagi proyeksiyalari o'zaro  $120^\circ$  li burchak hosil qilsa, og'malarning uchlari orasidagi masofani aniqlang.

A)  $\sqrt{2}a$  B)  $3a$  C)  $\sqrt{3}a$  D)  $2a$

28.  $\frac{2^{19} \cdot 27^3 + 15 \cdot 4^9 \cdot 9^4}{6^9 \cdot 2^{10} + 12^{10}}$  ni hisoblang.

A) 1 B)  $\frac{1}{2}$  C) 2 D)  $\frac{1}{3}$

29. Radiuslari 2 va 3 ga teng bo'lgan aylana bir-biriga tashqi ravishda urinadi. Ularning ikkalasi uchinchi aylanaga ichki ravishda urinsa va markazlari bitta to'g'ri chiziqda yotsa, tashqi aylananing ichki aylanalardan bo'sh qolgan sohasi yuzini toping.

A)  $12\pi$  B)  $4\pi$  C)  $9\pi$  D)  $6\pi$

30. Asosi  $a$ , perimetri 42 bo'lgan to'g'ri to'rtburchakning yuzini hisoblash uchun ifoda tuzing.

A)  $S = a(a - 21)$  B)  $S = a(21 - a)$

C)  $S = ax$  D)  $S = a^2 - 21$

31. Kodlashning Morze usuli qanday usulga misol bo'ladi?

A) Notekis kodlash usulu

B) Tekis kodlash usuli

C) Tartib raqamlari yordamida kodlash usuli

D) Alifboni surish usuli

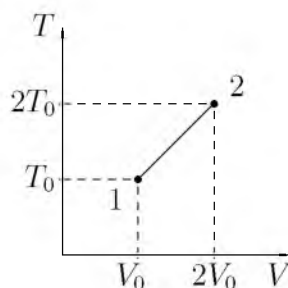


32. Sakkizlik sanoq sistemasidan ikkilik sanoq sistemasiga o'tkazishni bajaring:  $567_8 \rightarrow x_2$   
 A)  $10110101_2$  B)  $101110111_2$  C)  $1111101_2$   
 D)  $11101110_2$
33. Kompyuter uchun yangi dasturlar tayyorlash va tahrirlashni yengillashtiruvchi dasturlar qanday nomlanadi?  
 A) *Sistema dasturlari* B) *Amaliy dasturlar*  
 C) *Uskunaviy dasturlar* D) *Utilitalar*
34. MS Excel 2003 da berilgan shartni qanoatlantiruvchi satrlarni ajratib olish amali qanday ataladi?  
 A) *filtrlash* B) *tartiblash* C) *avtofiltr*  
 D) *hisobga olish*
35. Axborot uzatish jarayonida quyidagi qismlardan qaysi biri bo'lishi shart?  
 1) Axborot qabul qiluvchi 2) Axborot manbai  
 3) Axborot uzatish vositasi  
 A) 1, 2, 3 B) 1 C) 1, 2 D) 1, 3
36. Paskal dasturi lavhasidagi S ning qiymati nimaga teng?  
 begin S:=0; for I:=1 to 3 do S:=S+2\*i;  
 writeln(S); end.  
 A) 24 B) 48 C) 96 D) 12

### FIZIKA

1. Og'irligi 750 N bo'lgan odamni ko'tarib tura oladigan 50 sm qalinlikdagi yassi muzning yuzasi eng kamida qancha ( $m^2$ ) bo'lishi mumkin?  
 A) 1,25 B) 1 C) 1,53 D) 1,75
2. Maydonining energiyasi 2 J bo'lishi uchun induktivligi 1 H bo'lgan drossel chulg'amidagi tok kuchi (A) qancha bo'lishi kerak?  
 A) 1,5 B) 3 C) 2 D) 4
3. Normal atmosfera bosimi ( $P_0 = 101325$  Pa) ostidagi 10 l hajmli gaz o'zgarmas temperaturada 6 l qancha siqildi. Gazning keyingi bosimini (Pa) toping.  
 A) 100 000 B) 210 000 C) 168 875  
 D) 182 714
4. Quvvati 25 W va 100 W bo'lgan 2 ta lampochka 220 V kuchlanishda ishlashga muljallangan. Qaysi lampochkaning qarshiligi katta va necha marta?  
 A)  $R_1 = 4R_2$  B)  $R_2 = 4R_1$  C)  $R_1 = 2R_2$   
 D)  $R_2 = 2R_1$

5. Dengizdagi to'lqin do'ngliklari orasidagi masofa 5 m. Katerning to'lqinga qarshi harakatiga 1 s da kater korpusiga 4 marta to'lqin urildi. To'lqin bilan bitta yo'nalishda harakatlanganda 2 marta urildi. Agar kater tezligi to'lqin tezligidan katta bo'lsa kater (m/s) va to'lqin (m/s) tezligini toping.  
 A) 10; 5 B) 25; 5 C) 20; 10 D) 15; 5
6. Rasmda bir atomli ideal gaz 1 holatdan ikkinchi holatga o'tish jarayonida temperaturasini hajmga bog'lanishini grafigi tasvirlangan. Bu jarayonda gazning ichki energiyasi 45 kJ ga ortgan bo'lsa, gaz jami qancha issiqliq (kJ) qabul qilgan?



- A) 90 B) 75 C) 0 D) 45
7. Massasi 4,9 kg bo'lgan jism 2,5 kg massali qo'zg'almas jism bilan to'qnashgandan keyin bu ikki jismlar sistemasining kinetik energiyasi 5 J ga teng bo'lib qolgan. Urilishni markaziy va noelastik hisoblab birinchi jismning urilishdan oldingi kinetik energiyasini (J) toping.  
 A) 7,0 B) 8,5 C) 8,0 D) 7,55
8. Hajmi  $6 \times 4 \times 3$  m<sup>3</sup>, bosimi  $0,9 \cdot 10^5$  Pa, temperaturasi 293 K bo'lgan xonadagi havoning massasini (kg) aniqlang.  
 A) 70 B) 79 C) 83,9 D) 77,3
9. Aylanma harakat uchun dinamikaning asosiy qonuni formulasini belgilang.  
 A)  $M \cdot \Delta t = I\vec{\omega} - I\vec{\omega}_0$   
 B)  $\Delta Fr = \Delta mr^2\beta$   
 C)  $I\omega$   
 D)  $\vec{\mu} = I\vec{\beta}$
10. Chang'ichi  $0,2$  m/s<sup>2</sup> tezlanish bilan harakatlanib, uzunligi 50 m bo'lgan qiyalikni 10 s da o'tdi. Uning qiyalik boshidagi tezligi (m/s) qanday bo'lgan?  
 A) 5 B) 4 C) 3 D) 2

11. Agar avariya holatda tormozlanishdagi qarshilik koeffitsienti 0,4 ga teng bo'lsa, 12 m/s tezlik bilan harakatlanayotgan avtobus qancha vaqt (s) o'tgandan keyin to'xtaydi?  
A) 4 B) 2 C) 3 D) 5
12. Eynshteynning massa bilan energiyaning o'zaro bog'liqlik qonunini ifodalaydigan mashhur formulasini ko'rsating.  
A)  $E_k = \frac{mv^2}{2}$   
B)  $E = mgh$   
C)  $E = mc^2$   
D)  $E = IUt$
13. Tezligi  $1,9 \cdot 10^7$  m/s bo'lgan  $\alpha$ -zarra oltin atomi yadrosi yo'nalishida harakatlanib, yadroga qanday eng kichik masofagacha (m) yaqinlashishi mumkin?  $\alpha$ -zarraning massasi  $6,6 \cdot 10^{-27}$  kg, zaryadi  $1,3 \cdot 10^{-17}$  Kl.  
A)  $4 \cdot 10^{-14}$  B)  $3,8 \cdot 10^{-14}$  C)  $4,9 \cdot 10^{-14}$   
D)  $3,1 \cdot 10^{-14}$
14. Elementlari ketma-ket ulangan zanjirning o'zgaruvchan tokka nisbatan to'liq qarshiligi  $\sqrt{R^2 + (\omega L - 1/\omega C)^2}$  ga teng. Chastota  $\omega$  rezonans chastotaga nisbatan ikki marta katta bo'lsa, bu qarshilik nimaga teng?  
A)  $\sqrt{R^2 + \left(\sqrt{\frac{C}{L}} + \sqrt{\frac{L}{C}}\right)^2}$   
B)  $\sqrt{R^2 + \left(\sqrt{\frac{C}{L}} - \sqrt{\frac{L}{C}}\right)^2}$   
C)  $\sqrt{R^2 + \left(2\sqrt{\frac{C}{L}} + \frac{1}{2}\sqrt{\frac{L}{C}}\right)^2}$   
D)  $\sqrt{R^2 + \left(\frac{3L}{2C}\right)^2}$
15. Simni cho'zadigan stanokdan o'tkazib 2 marta uzaytirilsa, uning qarshiligi qanday o'zgaradi?  
A) 2 marta ortadi B) 4 marta ortadi  
C) 2 marta kamayadi D) o'zgarmaydi
16. Biror  $m$  massali gaz o'zgarmas bosimda  $T_0$  dan boshlab, ikkinchi marta  $T_0 + 1$  dan boshlab isitiladi. Ikkala holda ham gaz hajmi 2 marta ortdanda isitish to'xtatildi. Bunda issiqlik miqdori qanday farq qiladi?  
A)  $2m \cdot c_p \cdot$  B)  $m \cdot c_p (T_0 + 1)$  C)  $m \cdot c_p \cdot T_0$   
D) bir xil sarf bo'ladi
17. Massasi va radiusi 2 marta katta bo'lgan sayyoraga Yerdagiga nisbatan raketani uchirish uchun qanday birinchi kosmik tezlik (km/s) kerak?  $v_{Yer} = 8$  km/s - yerdagi birinchi kosmik tezlik.  
A)  $8\sqrt{2}$  B) 8 C) 4 D) 16
18.  $I = I_0 \cos^2 \alpha$  ko'rinishdagi qonun qanday ataladi?  
A) Biger-Lambert qonuni B) Frenal fonuni  
C) Gugins qonuni D) Malus qonuni
19. Massasi 8 kg bo'lgan snaryad diametri 100 mm bo'lgan to'p stvolidan 600 m/s tezlik bilan uchib chiqdi. Stvoldagi porox gazining o'rtacha bosimi 1 MPa. snaryadning stvoldagi harakat vaqtini (s) aniqlang.  
A) 0,92 B) 0,7 C) 0,55 D) 0,61
20. Atom holatidagi kislorod zarrachalarining  $138^\circ\text{C}$  dagi o'rtacha kvadratik tezliklarini (m/s) aniqlang.  $M_{atom} = 16$  g/mol,  $R = 8,3 \frac{\text{J}}{\text{K} \cdot \text{mol}}$   
A) 650 B) 840 C) 540 D) 800
21. Yopiq idishda suv va uning to'yingan bug'i bor. Harorat pasayganda to'yingan bug'ning zichligi qanday o'zgaradi?  
A) o'zgarmaydi  
B) boshlang'ich haroratga bog'liq C) ortadi  
D) kamayadi
22. Kuzatuvchidan 1060 m uzoqlikda temir yo'l relsiga bolg'a bilan urildi. Kuzatuvchi relsga quloq tutib, tovushni havo orqali eshitgan vaqtidan 30 s oldin eshitgan bo'lsa, tovushning po'latdagi tarqalish tezligini (m/s) toping.  
A) 500 B) 5000 C) 2500 D) 10000
23. Buyumdan ekrangacha masofa 3 m. Buyumning 5 marta kattalashgan tasvirini olish uchun optik kuchi (dptr) qanday bo'lgan linzani olish va uni qayerda joylashtirish lozim (m)?  
A) 2,4; 2,5 B) 3; 0,5 C) 4,8; 0,5  
D) 2,4; 0,5
24. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 6-sekundda bosib o'tgan yo'li 2-sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
A) 9 B) 11/7 C) 11/3 D) 11/5
25. Qaytgan nurni  $20^\circ$  ga burish uchun ko'zguni qanchaga burish kerak?  
A)  $5^\circ$  B)  $20^\circ$  C)  $40^\circ$  D)  $10^\circ$

26. Agar paravoz quvvati 4000kW bo'lib 15 m/s tezlik bilan yursa u vagonlarni qanday kuch (kN) bilan tortadi?  
A) 60 B) 60000 C) 27 D) 267
27. Induksiya vektorining moduli 700 mT bo'lgan bir jinsli magnit maydonining kuch chiziqlariga  $30^\circ$  burchak ostida 2 km/s tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2 \mu\text{C}$  ga teng.  
A) 1,2 B) 2,8 C) 0,8 D) 1,4
28. Qiya tekislikda yukni balandlikka ko'tarish uchun 20 J ish bajarildi. Bunda FIK 80% bo'lganda foydali ishni (J) toping.  
A) 18 B) 20 C) 15 D) 16
29. Radiuslari teng bo'lgan metall sharlarning biri dastlab  $+q$  ikkinchisi  $+2q$  elektr zaryadiga ega. Agar sharlar bir-biriga tekizilsa va dastlabki holatga qaytarilsa ularning ta'sirlashuv energiyasi qanday o'zgaradi?  
A) 9% ga kamayadi B) 12,5% ga ortadi  
C) o'zgarmaydi D) 18% ga ortadi
30. Silindrik idishga bir xil massali suv ( $\rho_{\text{suv}}=1 \cdot 10^3 \text{ kg/m}^3$ ) va simob ( $\rho_{\text{sim}}=13,6 \cdot 10^3 \text{ kg/m}^3$ ) qo'yildi. Idishdagi suyuqliklar ustunining umumiy balandligi 143 sm. Idish tubiga bo'lgan bosim qancha (kPa)?  
A) 26 B) 14,6 C) 10 D) 15,4
31. 220 V kuchlanishga mo'ljallangan 180 W quvvatli televizorga qo'yilgan eruvchan saqlagichga 1 A deb yozib qo'yilgan. Bu saqlagich kun bo'yi qancha kuchlanishga (V) bardosh beradi?  
A) 240 B) 268,8 C) 230 D) 260,8
32. Boshqa jismlardan uzoqda joylashgan mis sharcha to'lqin uzunligi 180 nm bo'lgan elektromagnit to'lqin bilan nurlantirilganda qanday maksimal potensialgacha (V) zaryadlanadi? Elektronning zaryadi  $-1,6 \cdot 10^{-15} \text{ Kl}$ , mis uchun elektronlarning chiqish ishi 4,4 eV.  
A) 6 B) 2,5 C) 2,8 D) 4,7
33. Tebranish konturi umumiy elektr sig'imi  $6 \cdot 10^{-3} \mu\text{F}$  bo'lgan leyden bankalari va induktivligi  $11 \mu\text{H}$  bo'lgan g'altaklardan iborat. Konturdagi elektromagnit tebranishlarning chastotasini (kHz) toping.  
A) 800 B) 700 C) 600 D) 750
34. Elektron  $E_1$  energiyali satqdan  $E_2$  energiyali sathga o'tgandan keyin nurlangan kvant energiyasining to'lqin uzunligi  $\lambda$  topilsin.  
A)  $\frac{E_1 - E_2}{hc}$  B)  $\frac{h\nu}{E_1 - E_2}$  C)  $\frac{hc}{E_2 - E_1}$   
D)  $\frac{h}{E_1 - E_2}$
35. 220 V kuchlanishli elektr tarmoqqa ulangan elektr lampochkadan 1 A tok o'tmoqda. Shu lampochkani 110 V kuchlanishli elektr tarmoqqa ulansa, undan qancha tok kuchi (A) o'tadi?  
A) 0,5 B) 3 C) 1 D) 2
36. Gaz razryadi jarayonida qanday zarrachalar ishtirok etadi?  
A) faqat ionlar  
B) elektronlar, musbat va manfiy ionlar  
C) elektronlar va kovaklar  
D) faqat elektronlar

### INGLIZ TILI

- Choose the answer which correctly complete the sentence.  
Tomorrow at 6 p.m they will be out They will be ... at the party.  
A) *presenting* B) *presents* C) *present*  
D) *presented*
- Choose the answer which correctly completes the sentence.  
The boy is dirty from head to foot because he ... in the mud.  
A) *have played* B) *has been playing*  
C) *played* D) *plays*
- Choose the answer which correctly completes the sentence.  
The play was a great success. I wish you ... it together with us.  
A) *will see* B) *were seen* C) *saw*  
D) *had seen*

4. Choose the answer which correctly complete the sentence.  
My feet are killing me. I ... to standing in queues for long periods of time.  
A) *don't use* B) *am not used* C) *didn't use*  
D) *used not*
5. Choose the answer which correctly complete the sentence.  
In September, 2000, the people of Denmark voted "no" to joining the single European currency ... euro.  
A) *a* B) *an* C) *the* D) *-*
6. Choose the answer which correctly completes the sentence.  
A football match lasts ... 90 minutes.  
A) *for* B) *while* C) *until* D) *as soon as*
7. Choose the answer which correctly completes the sentence.  
If you don't get better I'll take you to ... hospital.  
A) *an* B) *-* C) *the* D) *a*
8. Choose the answer which correctly completes the sentence.  
Tom Sawyer didn't want to paint the fence, so he got his friends ... it instead of him.  
A) *doing* B) *to do* C) *did* D) *do*
9. Choose the answer which correctly complete the sentence.  
There's a better way to solve that problem, ...?  
A) *is there* B) *isn't* C) *is it*  
D) *isn't there*
10. Choose the answer which correctly completes the sentence.  
When he fell awkwardly it felt like he had broken his ankle, but fortunately the injury wasn't ... he first thought.  
A) *serious* B) *as serious as* C) *more serious*  
D) *the most serious*
11. Choose the answer which correctly completes the sentence.  
The faster you drive, ... dangerous it is.  
A) *the more* B) *most* C) *more*  
D) *the most*
12. Choose the answer which correctly completes the sentence.  
If I bought him a computer he would ... games all day long.  
A) *played* B) *to play* C) *be playing*  
D) *have played*
13. Choose the answer which correctly completes the sentence.  
There was a conference in the Institute. A number of teachers ... there.  
A) *were sent* B) *be sent* C) *is sent*  
D) *are sent*
14. Choose the answer which correctly completes the sentence.  
Our guests didn't leave until 2 a.m., so they ... have enjoyed themselves.  
A) *can't* B) *ought* C) *should* D) *must*
15. Choose the answer which correctly completes the sentence.  
I dislike using credit cards, so I always pay ... cash.  
A) *in* B) *by* C) *from* D) *with*
16. Choose the answer which correctly completes the sentence.  
The Buckets, of course, ... starve, but they felt hungry from morning till night.  
A) *didn't* B) *does* C) *were* D) *do*
17. Choose the answer which correctly completes the sentence.  
Our new office building will be located downtown ... the corner of Euclid Avenue and East Ninth Street.  
A) *of* B) *to* C) *in* D) *on*
18. Choose the answer which correctly completes the sentence.  
I used to work ... a cabin boy in a block of flats.  
A) *in* B) *like* C) *for* D) *as*
19. Choose the answer which correctly complete the sentence.  
Staying in a hotel costs ... renting a room in a dormitory for a week.  
A) *twice more than* B) *twice as much as*  
C) *twice more as* D) *as much twice as*

20. Choose the answer which correctly completes the sentence.

Ann asked Helen: "Where does your friend work?"

Ann asked Helen where...

- A) *her friend was working*  
 B) *did your friend work*  
 C) *her friend had worked*  
 D) *her friend worked*

21. Choose the answer which correctly complete the sentence.

These library books are overdue so I... pay a fine when I return them.

- A) *can* B) *have to* C) *need* D) *may*

22. Choose the answer which correctly completes the sentence.

Whose spectacles are these? - ... are on the table, and these are my spectacles.

- A) *Their* B) *Yours* C) *Your* D) *Our*

23. Choose the answer which correctly completes the sentence.

He hardly recognised Amanda! She... blonde.

- A) *dyed your hair* B) *had her hair to dye*  
 C) *has had her hair dyed*  
 D) *had to dye her hair*

Read the text. Then choose the correct answer to question 24-26.

Babies whose mothers smoke during pregnancy could be at higher risk of growing up to be criminals, new research suggests. This is the first study to examine the relationship between mothers who smoke and their children's adult behaviour. The findings were based on data for 4,169 males born in Copenhagen between September 1959 and December 1961. Their arrest records at age 34 were studied. It was discovered that the number of cigarettes their mothers had smoked during the last third of their pregnancy affected the men's arrests for both violent and non-violent crimes. This was true even when other possible causes, such as use of alcohol, divorce, income, and home environment had been taken into consideration.

24. The main idea of the passage is that ...

- A) *smoking during pregnancy increases the possibility of the child committing crimes in adult life.*  
 B) *pregnant women who smoke should be regarded as criminals and be punished.*  
 C) *most criminals are heavy smokers*  
 D) *4,169 males were born in Copenhagen between the years 1959 and 1961*

25. The research mentioned in the passage ...

- A) *mainly dealt with the adult behaviour of the children of smoking mothers.*  
 B) *studied only the last third of a mother's pregnancy.*  
 C) *was a repetition of several previous studies, which were inconclusive.*  
 D) *concentrated on the effects of smoking before and after pregnancy.*

26. From the passage, we can say that the researchers were careful because ...

- A) *they chose subjects who had only committed minor crimes.*  
 B) *all men born between September 1959 and December 1961 were studied.*  
 C) *they studied so many men from so many different countries.*  
 D) *other possible causes of crime were also considered.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Most whales are huge (27)... The largest whales are called blue whales. They can grow to 30 meter in length and can weigh 135,000 kilogram. Blue whales are (28)... larger than elephant and larger than any of the now extinct dinosaur. The heart of an adult blue whale is about the size of a compact car.

- 27.

- A) *creative* B) *create* C) *creatures*  
 D) *creators*

28.

- A) *much* B) *no* C) *some* D) *very*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

29.

- A) *familiarity* B) *familiar* C) *familiarize*  
D) *familiarly*

30.

- A) *are* B) *is* C) *have been* D) *will be*

31.

- A) *towards* B) *with* C) *of* D) *into*

Read the text. Then choose the correct answer to question 32-33.

Lieutenant Zachary Mayo, a 20-year old sailor in the US navy woke up and couldn't get back to sleep because of hot and stuffy air. He got off his bunk quietly so as not to wake up his shipmates. He put his blue overalls on and left the cabin and went onto the deck of a huge aircraft carrier. It was two o'clock on a Friday morning. He breathed in fresh air and looked up at the stars in the sky. And then without thinking he leaned out too far and lost his footing. Before he knew it, he was in the water, watching the huge ship disappearing into the night. Nobody had seen him fall, and for nearly 2 days not one of the crew realized he was missing.

Mayo survived because at training camp two years before he had been taught how to make clothes into life jackets, so he took off his overalls and tied the arms and legs. Then he waved his "life jacket" over his head and filled it with air so that he could stay afloat.

32. Zachary Mayo left his cabin because ...

- A) *he wanted to get some fresh air*  
B) *he suffered from insomnia*  
C) *somebody woke him up*  
D) *he wanted to admire the stars in the sky*

33. How did Z. Mayo appear in the water?

- A) *lost his balance when he leaned out*  
B) *to test his overalls if he could stay afloat*  
C) *his shipmates pushed him into the water*  
D) *he wanted to have a swim*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?
- A) *It takes longer for Mars to circle the Sun than it takes Earth*
  - B) *Mars is larger than Earth*
  - C) *Martian soil is rocky*
  - D) *Mars has two moons*
35. Man-made canals were supposedly discovered by ...
- A) *Phobos*
  - B) *Schiaparelli*
  - C) *Viking I*
  - D) *Martian*
36. Mars has been nicknamed as ...
- A) *Deimos*
  - B) *Martian*
  - C) *The Red Planet*
  - D) *Viking I*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000040**

Toshkent – 2014



### MATEMATIKA (INFORMATIKA BILAN)

- $\frac{1}{\log_2\left(\frac{1}{6}\right)} - \frac{1}{\log_3\left(\frac{1}{6}\right)} - \frac{1}{\log_4\left(\frac{1}{6}\right)}$  ni hisoblang.  
 A) 6    B) 1    C) 2    D) 3
- $ABC$  uchburchak uchlaridan  $\alpha$ -tekislikkacha bo'lgan masofalar mos ravishda 3,75; 9 va  $2\frac{1}{4}$  ga teng bo'lsa, uchburchakning og'irlik markazidan  $\alpha$ -tekislikkacha bo'lgan masofani toping.  
 A) 6    B) 4    C) 4,75    D) 5
- $f(x) = \sqrt{2}\sin x - 2x$ ,  $f'(x) = ?$   
 A)  $\cos x + 2$     B)  $\sqrt{2}\cos x - 2$     C)  $-\cos x - 2$   
 D)  $-\sqrt{2}\cos^2 x - 2$
- $f'(x) = 3x^2 - 4x + 2$ ,  $f(-1) = 0$ ,  $f(2) = ?$   
 A) 9    B) 8    C) 18    D) 10
- $x(x+1)(x-1)(x+2) = 24$  tenglamani yeching.  
 A)  $x_1 = x_2 = 1$     B)  $x_1 = -1$ ;  $x_2 = -2$   
 C)  $x_1 = -3$ ;  $x_2 = 2$     D)  $x_1 = 0$ ;  $x_2 = 1$
- Qanday ko'pburchak diagonallarining soni tomonlarining sonidan 12 ta ortiq?  
 A) to'rtburchak    B) oltiburchak  
 C) o'nikkiburchak    D) sakkizburchak
- $x, y$  butun sonlar uchun  $-12 \leq x < 13$ ,  
 $-9 < y \leq 6$  va  $x + y \neq 0$  bo'lsa,  $\frac{x-y}{x+y}$  ning eng katta qiymatini toping.  
 A) 17    B) 20    C) 18    D) 14
- $\sqrt[3]{0,5} + \sqrt[3]{4} - \sqrt[3]{13,5}$  ni hisoblang.  
 A)  $-\sqrt[3]{5}$     B)  $-\sqrt[3]{2}$     C) 0    D)  $\sqrt[3]{5}$
- $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \dots \cdot \sin 45^\circ}{\cos 46^\circ \cdot \cos 47^\circ \cdot \dots \cdot \cos 89^\circ}$  ni hisoblang.  
 A)  $\frac{\sqrt{2}}{2}$     B)  $\frac{\sqrt{3}}{2}$     C) 1    D)  $\frac{1}{2}$

- $4^x - 2 \cdot 6^x = 9^{x+\frac{1}{2}}$  tenglama ildizini toping.  
 A)  $\lg 3$   
 B)  $-\lg \frac{2}{3}$   
 C)  $\lg \frac{2}{3}$   
 D)  $\frac{\lg 3}{\lg \frac{2}{3}}$
- $a, b, c$  - noldan farqli raqamlar uchun  $a > b > c$  munosabat o'rinli. Agar  $\overline{abc} + \overline{bca} + \overline{cab} = 999$  tenglik bajarilsa,  $a$  ning eng katta qiymati nechaga teng bo'lishi mumkin?  
 A) 6    B) 7    C) 4    D) 5
- 2 ta parallel to'g'ri chiziqni uchinchi to'g'ri chiziq kesib o'tganda hosil bo'lgan ichki bir tomonli burchaklar  $\frac{7}{13}$  nisbatda. Ulardan kattasini toping.  
 A)  $120^\circ$     B)  $63^\circ$     C)  $117^\circ$     D)  $113^\circ$
- $f(x+1) = x \cdot f(x) + 4$ ,  $f(2) = ?$   
 A) 0    B) 8    C) 16    D) 6
- Agar arifmetik progressiyada  $a_1 + a_2 + a_3 = 0$  va  $a_1^2 + a_2^2 + a_3^2 = 50$  bo'lsa, uning ayirmasini toping.  
 A) 4    B) 1    C) 2    D)  $\pm 5$
- $ABCD$  parallelogrammda  $BD = 4\sqrt{2}$ ,  
 $\angle ADB = 60^\circ$ ,  $\angle CDB = 75^\circ$  bo'lsa,  $AB$  ni toping.  
 A)  $5\sqrt{3}$     B)  $3\sqrt{3}$     C)  $4\sqrt{3}$     D)  $6\sqrt{2}$
- Uzunligi 19,8 m bo'lgan arqon ikki bo'lakka bo'lindi. Bo'laklardan birining uzunligi ikkinchisidan 20% ortiq bo'lsa, har bir bo'lakning uzunligini (m) toping.  
 A) 7,8 va 12    B) 9 va 10,8    C) 8 va 11,8  
 D) 6,8 va 13
- $\frac{(2p-q)^2 + 2q^2 - 3pq}{2p^{-1} + q^2} : \frac{4p^2 - 3pq}{2 + pq^2}$  ifodani soddalashtiring va uning son qiymatini toping.  
 $p=0,78$ ,  $q=7/25$   
 A) 0,25    B) 1    C) -1    D) 0,5

18. Radiusi 5 ga teng bo'lgan doiradagi uzunligi 8 ga teng vatar doira markazidan qancha uzoqlikda bo'ladi?  
A) 3,6 B) 3 C) 3,2 D) 4
19. 
$$\begin{cases} 2x - 1 > x, \\ x^2 - 7x + 6 > 0, \\ 2^x < 128 \end{cases}$$
 tengsizliklar sistemasini yeching.  
A)  $(-\infty; 6)$   
B)  $(7; \infty)$   
C)  $(-\infty; 6) \cup (7; \infty)$   
D)  $(6; 7)$
20. Teploxod ikki pristan oraligidagi masofani daryo oqimi bo'yicha 7 soat, oqimga qarshi 9 soatda o'tadi. Agar oqimning tezligi 2 km/soat bo'lsa, pristanlar orasidagi masofani (km) aniqlang.  
A) 130 B) 128 C) 126 D) 120
21.  $10^{24} - 4$  ni 9 ga bo'lganda qoldiq nechaga teng?  
A) 6 B) 3 C) 0 D) 4
22.  $y = \sqrt{25 - x^2}$  funksiyaning grafigi bo'lgan egri chiziq va  $y = 0$  to'g'ri chiziq bilan chegaralangan shakl yuzini toping.  
A) aniqlab bo'lmaydi B)  $25\pi$  C)  $12,5\pi$   
D)  $5\pi$
23. Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.  
A) 15 B) 30 C) 10 D) 20
24. 
$$\frac{0,725 + 0,6 + \frac{7}{40} + \frac{11}{20}}{0,128 \cdot 6\frac{1}{4} - 0,0345 : \frac{3}{25}} \cdot 0,25$$
 ni hisoblang.  
A) 4 B)  $1/2$  C) 2 D) 1
25. Asosidagi burchaklari  $60^\circ$  va  $30^\circ$  bo'lgan trapetsiyaga radiusi  $3\sqrt{3}$  bo'lgan doira ichki chizilgan. Trapetsiyaning perimetrini toping.  
A)  $3\sqrt{3}$  B)  $2\sqrt{2}$  C) 8 D)  $24(1+\sqrt{3})$
26. Tekislikdan  $h$  uzoqlikda joylashgan nuqtadan tekislikka o'tkazilgan va tekislik bilan  $30^\circ$  li burchak hosil qiladigan og'maning uzunligini toping.  
A)  $2h$  B)  $\sqrt{2}h$  C)  $\sqrt{3}h$  D)  $1,5h$
27.  $y = |x - 1| + |x - 2| + |x - 3| + \dots + |x - 9|$  funksiyaning eng kichik qiymatini toping.  
A) 10 B) 20 C) 21 D) 12
28. Rombning tomoni  $10\sqrt{3}$  ga, o'tmas burchagi  $120^\circ$  ga teng. Rombga ichki chizilgan doiraning yuzini hisoblang.  
A)  $48,75\pi$  B)  $52,25\pi$  C)  $58,6\pi$  D)  $56,25\pi$
29.  $\sqrt[3]{x+2} + \sqrt[3]{x+3} + \sqrt[3]{x+4} = 0$  tenglama ildizlarining yig'indisini toping.  
A) -3 B) 2 C) -5 D) 1
30.  $\frac{2^{3a+0,5} + \sqrt{2}}{4^a - 2^a + 1} \cdot (2^{a+0,5} - \sqrt{2}) - 2^{2a+1}$  ni hisoblang.  
A)  $4^a\sqrt{2}$  B)  $2\cos 7\pi$  C) 2 D)  $-2^a$
31. "Mantiq insonga shunday bir qoida beradiki, bu qoida yordamida xulosa chiqarishda xatolardan saqlanadi". Ushbu fikr kimga tegishli?  
A) Abu Nasr Farobiy B) Alisher Navoiy  
C) Kamoliddin Behzod D) Abu Ali Ibn Sino
32. Sakkizlik sanoq sistemasidan ikkilik sanoq sistemasiga o'tkazishni bajaring:  $567_8 \rightarrow x_2$   
A)  $10110101_2$  B)  $101110111_2$  C)  $1111101_2$   
D)  $11101110_2$
33. Nomi S harfidan boshlanuvchi va faqat to'rtta belgidan iborat ixtiyoriy kengaytmali fayllar qanday belgilanadi?  
A)  $S* *.*.*$  B)  $S?????$  C)  $S????.*$  D)  $S*.*$
34. MS Excel 2003 da katakchadagi "= $CYMM(A1:A10;B1;C5)$ " formula nechta katakchadagi sonni qo'shadi?  
A) 12 ta B) 15 ta C) 10 ta D) 20 ta
35. Axborot uzatish jarayonida quyidagi qismlardan qaysi biri bo'lishi shart?  
1) Axborot qabul qiluvchi 2) Axborot manbai  
3) Axborot uzatish vositasi  
A) 1, 2, 3 B) 1 C) 1, 2 D) 1, 3
36. Paskal dasturi lavhasidagi hisob natijasini aniqlang.  
begin a:=12; b:=14; c:=10; if(a>b) or (b>c)  
then y:=a+b-c else y:=a-b+c; writeln(y); end.  
A) 8 B) 6 C) 16 D) 14

1. Yadro bombasining portlashi nimadan iborat?

- A) *dinamitning portlashidan*  
 B) *og'ir vodorod yadrolarining sintez reaksiyasidan*  
 C) *poroxning portlashidan*  
 D) *yadrolar parchalanishining zanjirli reaksiyasidan*

2. Induktivligi 0,1 H bo'lgan o'tkazgichdan o'tayotgan tok kuchi 1 A bo'lsa, magnit maydon energiyasini (mJ) toping.

- A) 75 B) 25 C) 100 D) 50

3. Suyuqlikning idish devoriga bosim kuchi  $F$  idish tubiga bo'lgan bosim kuchiga teng bo'lishi uchun  $R$  radiusli silindrik idishga qanday balandlik  $H$  gacha suv qiyish kerak?

- A)  $R = 4H$  B)  $R = 2H$  C)  $R = H/2$   
 D)  $R = H$

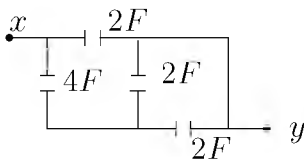
4. Harorati  $20^\circ\text{C}$  va bosimi 100 kPa bo'lgan  $1,45\text{ m}^3$  havo suyuq holatga keltirildi. Agar suyuq havoning zichligi  $860\text{ kg/m}^3$  bo'lsa, u qanday hajmni (l) egallaydi. Havoning molyar massasi 29 g/mol.

- A) 2 B) 3 C) 4 D) 1,5

5. Mikroskop linzalarining fokus masofalari mos ravishda 1,5 sm va 2,5 sm, linzalar orasidagi masofa 30 sm. Bunday mikroskop obyektini necha marta kattalashtirib ko'rsatadi?

- A) 300 B) 200 C) 100 D) 400

6. Rasmdagi  $x$  va  $y$  nuqtalar orasidagi umumiy kuchlanish 40 V. Kondensatorlarda to'plangan energiyani (J) toping.



- A) 600 B) 400 C) 3200 D) 800

7. Tovush chastotasining balandligi 80 Gs bo'lgan odam tovushining to'liq uzunligini (m) aniqlang. Tovush tezligi havoda 340 m/s.

- A) 4,25 B) 6,80 C) 160 D) 5

8. Bola yelkasiga 15 kg yukni ko'tarib turibdi. Agar bolaning massasi 45 kg bo'lsa, Yer tomonidan bolaga ta'sir etayotgan reaksiya ko'chini (N) toping.

- A) 150 B) 600 C) 300 D) 450

9. 40 l  $10^\circ\text{C}$  li suvga 20 l  $40^\circ\text{C}$  li suv aralashtirildi. Aralashmaning haroratini ( $^\circ\text{C}$ ) toping.

- A) 20 B) 28 C) 24 D) 22

10. Tebranish konturida sig'imi 80 pF bo'lgan kondensator va induktivligi 20  $\mu\text{H}$  g'altak bor. Konturning xususiy tebranishlari davri ( $\mu\text{s}$ ) qanday?

- A) 0,50 B) 0,25 C) 0,45 D) 0,20

11. Uzunligi 100 m ko'ndalang kesim yuzi  $0,5\text{ mm}^2$  bo'lgan aluminiy ( $\rho_{\text{Al}}=0,028 \cdot 10^{-6}\text{ Om}\cdot\text{m}$ ) simning uchlaridagi kuchlanish 7 V. Shu simdan o'tayotgan tok kuchini (A) aniqlang.

- A) 1 B) 1,25 C) 2 D) 1,5

12. Aylanma harakat uchun dinamikaning asosiy qonuni formulasini belgilang.

- A)  $\Delta Fr = \Delta mr^2\beta$   
 B)  $M \cdot \Delta t = I\vec{\omega} - I\vec{\omega}_0$   
 C)  $I\omega$   
 D)  $\vec{\mu} = I\vec{\beta}$

13. Elementlari ketma-ket ulangan zanjirning o'zgaruvchan tokka nisbatan to'liq qarshiligi  $\sqrt{R^2 + (\omega L - 1/\omega C)^2}$  ga teng. Rezonans hodisasi kuzatilganda bu qarshilik nimaga teng bo'ladi?

- A)  $\sqrt{R^2 + (\omega C + 1/\omega L)^2}$   
 B)  $\sqrt{R^2 + (\omega C - 1/\omega L)^2}$   
 C)  $\sqrt{R^2 + (\omega L - 1/\omega C)^2} / 2$   
 D)  $R$

14. Radiusi 0,2 m bo'lgan metall sharda  $4\pi \cdot 10^{-8}\text{ C}$  zaryad bo'lsa, uning sirtida zaryadning o'rtacha zichligi qanday ( $\text{C/m}^2$ )?  $\epsilon=1$  deb oling.

- A)  $1,6 \cdot 10^{-7}$  B)  $0,8 \cdot 10^{-7}$  C)  $2,5 \cdot 10^{-7}$   
 D)  $4,2 \cdot 10^{-7}$

15. Ideal gazning harorati 4 marta orttirilib, hajmi 2 marta kamaytirilsa, bosim qanday o'zgaradi ?

- A) 8 marta ortadi B) 2 marta kamayadi  
 C) 4 marta ortadi D) 2 marta ortadi

16. Silindrik idishga bir xil massali suv ( $\rho_{suv}=1\cdot 10^3 \text{ kg/m}^3$ ) va simob ( $\rho_{sim}=13,6\cdot 10^3 \text{ kg/m}^3$ ) qo'yildi. Idishdagi suyuqliklar ustunining umumiy balandligi 143 sm. Idish tubiga bo'lgan bosim qancha (kPa)?  
A) 26 B) 14,6 C) 15,4 D) 10
17. Osilgan prujinaga yuk 0,5 s davr bilan tebranmoqda. Agar yuk prujinadan olinsa, prujina qanchaga qisqaradi (sm)?  
A) 2,0 B) 6,3 C) 39,7 D) 5,4
18. Qizil yorug'lik nuri uchun foton energiyasini (J) hisoblang.  
A)  $2,83\cdot 10^{-19}$  B)  $3,5\cdot 10^{-16}$  C)  $3\cdot 10^{-16}$   
D)  $3\cdot 10^{-19}$
19. Molekulalari konsentratsiyasi  $2\cdot 10^{24} \text{ m}^{-3}$  ga teng bo'lgan idishdagi gazning bosimi  $3\cdot 10^4 \text{ N/m}^2$  ga teng. Bitta molekulaning o'rtacha kinetik energiyasini (J) toping.  
A)  $2,75\cdot 10^{-20}$  B)  $2,25\cdot 10^{-20}$  C)  $3\cdot 10^{-21}$   
D)  $2,5\cdot 10^{-20}$
20. Yorug'lik to'liqini uzunligi qanday elektromagnit to'liqlardan (m) iborat?  
A)  $3\cdot 10^{-5}$ - $8\cdot 10^{-5}$   
B)  $6\cdot 10^{-6}$ - $9\cdot 10^{-6}$   
C)  $5\cdot 10^{-8}$ - $7\cdot 10^{-8}$   
D)  $4\cdot 10^{-7}$ - $7,6\cdot 10^{-7}$
21. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 6-sekundda bosib o'tgan yo'li 2-sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
A) 11/3 B) 11/5 C) 9 D) 11/7
22. Uzunligi 4 m bo'lgan avtomobil s'yomka qilinayotganda plyonka obyektivida 60 mm masofada joylashgan. Agar avtomobilning negativ tasviri uzunligi 32 mm bo'lsa, uni qanday masofada (m) olingan?  
A) 8,5 B) 0,075 C) 7,5 D) 2,1
23. Metall o'tkazgichning ko'ndalang kesim yuzasini o'zgartirmasdan massasini 2 marta kamaytirsak, uning solishtirma elektr qarshiligi qanday o'zgaradi?  
A) 2 marta kamayadi B) 4 marta kamayadi  
C) 2 marta ortadi D) o'zgarmaydi
24. Qiya tekislikda yukni balandlikka ko'tarish uchun 20 J ish bajarildi. Bunda FIK 80% bo'lganda foydali ishni (J) toping.  
A) 15 B) 20 C) 18 D) 16
25. Induksiya vektorining moduli 700 mT bo'lgan bir jinsli magnit maydonning kuch chiziqlariga  $30^\circ$  burchak ostida 2 km/s tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2 \mu\text{C}$  ga teng.  
A) 1,4 B) 2,8 C) 1,2 D) 0,8
26. Qarshiliklari  $R_1=20 \Omega$  va  $R_2=10 \Omega$  bo'lgan o'tkazgichlar o'zaro parallel ulangan holda elektr tarmog'iga ulandi. Tarmoqdagi tok kuchi 300 mA ga teng bo'lsa, birinchi o'tkazgichda 1 minut ichida qancha issiqlik miqdori (J) ajralib chiqadi?  
A) 36 B) 15 C) 12 D) 24
27. Havoda massasi 2 kg bo'lgan,  $7,5 \text{ m/s}^2$  tezlanish bilan tushayotgan jismga ta'sir qiluvchi havoni qarshilik kuchinini (N) toping.  
A) 2,5 B) 8 C) 5 D) 7,5
28. Markazga intilma tezlanish ...  
A) aylanish davri ortishi bilan ortadi  
B) aylanish davrida teskari proporsional  
C) aylanish davri bog'liq emas  
D) aylanish davrining kvadratiga teskari proporsional
29. Jismning impulsi  $8 \text{ kg}\cdot\text{m/s}$ , kinetik energiyasi esa 16 J. Jismning tezligi (m/s) va massasini (kg) toping.  
A) 4; 4 B) 4; 2 C) 2; 2 D) 2; 4
30. O'zgarmas tok manbaiga avval  $9 \Omega$  qarshilik so'ngra  $4 \Omega$  qarshilik ulandi. Har ikkala holda birday vaqt ichida qarshiliklarda bir xil miqdorda issiqlik ajraladi. Manbaning ichki qarshiligini ( $\Omega$ ) aniqlang.  
A) 36 B) 6 C) 3 D)  $\sqrt{6}$
31. Ideal gazning harorati  $87^\circ\text{C}$  va konsentratsiyasi  $1\cdot 10^{12} \text{ m}^{-3}$  bo'lsa, shu gazning bosimini (nPa) va molekulalari ilgarilanma harakatining o'rtacha kinetik energiyasini (J) toping.  
A) 3;  $7,4\cdot 10^{-20}$  B) 6;  $7,4\cdot 10^{-21}$   
C) 5;  $7,45\cdot 10^{-21}$  D) 2;  $6\cdot 10^{-21}$

32. Simni cho'zadigan stanokdan o'tkazib 2 marta uzaytirilsa, uning qarshiligi qanday o'zgaradi?  
A) 2 marta kamayadi B) 2 marta ortadi  
C) 4 marta ortadi D) o'zgarmaydi
33. Agar tormozlanishdagi ishqalanish koeffitsienti 0,4 ga teng bo'lsa, 12 m/s tezlik bilan harakatlanayotgan avtobus qancha vaqtdan (s) keyin to'xtaydi?  $g=10 \text{ m/s}^2$   
A) 30 B) 0,3 C) 4 D) 3
34. Molekulalarning o'rtacha kvadratik tezligi 1 km/s va molekulalarining massasi  $3 \cdot 10^{-27} \text{ kg}$  bo'lganda 1 mm<sup>3</sup> da 100 milliard molekulasi bo'lgan konsentratsiyadagi ideal gaz idish devorlariga qanday bosim (Pa) beradi?  
A) 0,1 B) 3 C) 0,5 D) 0,8
35. Qanday jarayonda gazga berilgan issiqlikning hammasi mexanik ishga aylanadi?  
A) izobarik B) izoxorik C) adiabatik  
D) izotermik
36.  $1 \cdot 10^{15} \text{ Hz}$  chastotali fotonning massasini (kg) aniqlang.  $h = 6,6 \cdot 10^{-34} \text{ J}\cdot\text{s}$ .  
A)  $6,6 \cdot 10^{-36}$  B)  $8,1 \cdot 10^{-36}$  C)  $7 \cdot 10^{-36}$   
D)  $7,3 \cdot 10^{-36}$

### INGLIZ TILI

1. Choose the answer which correctly complete the sentence.  
Those keys don't belong to you, ... they?  
A) are B) aren't C) do D) don't
2. Choose the answer which correctly completes the sentence.  
The best time to go shopping is in the morning ... shops are not busy then.  
A) which B) that C) what D) when
3. Choose the answer which correctly complete the sentence.  
He was ... tall that he hit his head on the ceiling.  
A) as B) so C) such D) so as
4. Choose the answer which correctly completes the sentence.  
The class got ... when the professor entered.  
A) quietly B) quieting C) quiet  
D) quitness

5. Choose the answer which correctly complete the sentence.  
We hurried to the airport, but the plane ... a few minutes ago.  
A) took off B) was taken off C) take off  
D) has taken off
6. Choose the answer which correctly completes the sentence.  
The boy is dirty from head to foot because he ... in the mud.  
A) played B) have played  
C) has been playing D) plays
7. Choose the answer which correctly completes the sentence.  
He needs to get his suit ... as he spilled some tomato sauce on it.  
A) cleaned B) to clean C) clean  
D) cleaning
8. Choose the answer which correctly complete the sentence.  
We went home so that we could hear the news of Eurovision ... the radio.  
A) on B) in C) from D) for
9. Choose the answer which correctly completes the sentence.  
Nora asked Bill: "Where did you hide my purse?"  
Nora asked Bill where ... her purse.  
A) he hid B) did he hide C) he had hidden  
D) he hide
10. Choose the answer which correctly complete the sentence.  
While Dan was washing up the dishes the girls ... the kitchen.  
A) were cleaning B) was cleaned  
C) were cleaned D) cleaned
11. Choose the answer which correctly complete the sentence.  
There was a long line in front of the theatre. We ... wait almost an hour to buy our tickets.  
A) need B) had to C) were able D) must
12. Choose the answer which correctly complete the sentence.  
Jack left his family at ... early age to get a job in town.  
A) an B) the C) - D) a

13. Choose the answer which correctly completes the sentence.  
The early pioneers in the US ... mainly on hunting and fishing for their food.  
A) *were using to rely* B) *used to rely*  
C) *were used to rely* D) *used to relying*
14. Change the sentence into the Passive Voice.  
They didn't ask me my name.  
A) *I didn't ask my name.*  
B) *I wasn't asked my name.*  
C) *I wasn't asked name.*  
D) *My name wasn't asked.*
15. Choose the answer which correctly completes the sentence.  
We woke up just ... time to see the sunrise this morning.  
A) *in* B) *on* C) *for* D) *to*
16. Choose the answer which correctly completes the sentence.  
Recently there has been an outbreak of the flu, and doctors don't know...  
A) *the cause is what* B) *what the cause is*  
C) *is what the cause* D) *that is the cause*
17. Choose the answer which correctly completes the sentence.  
Dad, I have nothing to wear. The jeans you bought me ... fit me.  
A) *don't* B) *doesn't* C) *aren't* D) *isn't*
18. Choose the answer which correctly completes the sentence.  
She would have recognised him if she ... him before.  
A) *would see* B) *saw* C) *see* D) *had seen*
19. Choose the answer which correctly completes the sentence.  
When he fell awkwardly it felt like he had broken his ankle, but fortunately the injury wasn't ... he first thought.  
A) *as serious as* B) *serious*  
C) *the most serious* D) *more serious*
20. Choose the answer which correctly completes the sentence.  
The roads were slippery and we ... had an accident this morning.  
A) *near* B) *next* C) *nearer* D) *nearly*
21. Choose the answer which correctly completes the sentence.  
Kate reads "The Washington Post" every day. She doesn't read any ... newspapers.  
A) *others* B) *other* C) *another*  
D) *the other*
22. Choose the answer which correctly complete the sentence.  
We usually have ... breakfast at 8 o'clock.  
A) *a* B) *the* C) *an* D) *-*
23. Choose the answer which correctly complete the sentence.  
They have promised to lend me a tennis racket so I ... take mine.  
A) *daren't* B) *don't have to* C) *mustn't*  
D) *can't*
- Read the text. Then choose the correct answer to question 24-26.
- One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.
24. The passage tells us that the shrew ...  
A) *lives in dense forests.*  
B) *has a very short life span.*  
C) *is in the habit of eating every two hours.*  
D) *is similar to a mouse in appearance*
25. The passage states that shrews ...  
A) *are found in huge numbers in Australia.*  
B) *are the smallest living mammals.*  
C) *eat rarely but in large amounts at a time.*  
D) *eat each other when they can't find any food.*

26. From what is stated in the passage, we can infer that a shrewish woman is someone who ...
- A) *easily gets annoyed.*  
 B) *has tiny eyes and ears.*  
 C) *is noticeably smaller than the average.*  
 D) *is very fond of velvet and fur.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Johannes Brahms is a German composer, pianist, and conductor. His works (27) ... four symphonies, songs and concertos for piano and for violin. He (28) ... and conducted his own works.

- 27.
- A) *includes*   B) *include*   C) *will include*  
 D) *are included*
- 28.
- A) *performed*   B) *recognized*   C) *designed*  
 D) *attempted*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

- 29.
- A) *familiarly*   B) *familiar*   C) *familiarize*  
 D) *familiarity*
- 30.
- A) *are*   B) *have been*   C) *will be*   D) *is*

- 31.
- A) *with*   B) *into*   C) *towards*   D) *of*

Read the text. Then choose the correct answer to question 32-33.

Lieutenant Zachary Mayo, a 20-year old sailor in the US navy woke up and couldn't get back to sleep because of hot and stuffy air. He got off his bunk quietly so as not to wake up his shipmates. He put his blue overalls on and left the cabin and went onto the deck of a huge aircraft carrier. It was two o'clock on a Friday morning. He breathed in fresh air and looked up at the stars in the sky. And then without thinking he leaned out too far and lost his footing. Before he knew it, he was in the water, watching the huge ship disappearing into the night. Nobody had seen him fall, and for nearly 2 days not one of the crew realized he was missing.

Mayo survived because at training camp two years before he had been taught how to make clothes into life jackets, so he took off his overalls and tied the arms and legs. Then he waved his "life jacket" over his head and filled it with air so that he could stay afloat.

32. Zachary Mayo left his cabin because ...
- A) *he wanted to admire the stars in the sky*  
 B) *he wanted to get some fresh air*  
 C) *somebody woke him up*  
 D) *he suffered from insomnia*

33. How did Z. Mayo appear in the water?

- A) *his shipmates pushed him into the water*
- B) *he wanted to have a swim*
- C) *lost his balance when he leaned out*
- D) *to test his overalls if he could stay afloat*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Martian soil is rocky*
- B) *Mars is larger than Earth*
- C) *It takes longer for Mars to circle the Sun than it takes Earth*
- D) *Mars has two moons*

35. Man-made canals were supposedly discovered by ...

- A) *Viking I*
- B) *Schiaparelli*
- C) *Phobos*
- D) *Martian*

36. Mars has been nicknamed as ...

- A) *The Red Planet*
- B) *Martian*
- C) *Deimos*
- D) *Viking I*



O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000041**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1.  $x^2 + \frac{16}{x^2} + (x - \frac{4}{x}) - 28 = 0$  tenglamaning ildizlari yig'indisini toping.  
A) 1 B) -1 C) 4 D) 0
2. Talaba besh yilda 31 ta imtihon topshirdi. U har keyingi yilda oldingi yildagiga qaraganda ko'p imtihon topshirgan. Beshinchi kursda birinchi kursdagidan 3 marta ko'p imtihon topshirgan bo'lsa, to'rtinchi kursda nechta imtihon topshirgan?  
A) 6 B) 8 C) 9 D) 7
3.  $\int_{\frac{\pi}{4}}^{\pi} 8 \cos^2 x \cdot \sin 2x dx$  integralni hisoblang.  
A) 1 B) 3 C) 2 D) -3
4. Natural  $m$  va  $n$  sonlar uchun  $\frac{m}{4} + n = 8$  bo'lsa,  $m$  qabul qilishi mumkin bo'lgan qiymatlar ichida eng kattasini toping.  
A) 16 B) 20 C) 28 D) 24
5. Dastlabki o'nta hadining yig'indisi 55 ga teng bo'lgan arifmetik progressiyaning o'ninchi hadi 19 ga teng bo'lsa, uning ayirmasini toping.  
A) 2 B) -3 C) -2 D) 3
6. 3; 5; 9; 17; 33; 65; ... ketma-ketlikning dastlabki  $n$  ta hadining yig'indisini toping.  
A)  $2n$  B)  $2^n + n - 2$  C)  $(2 + 2^{n-1}) \cdot n$   
D)  $2^{n+1} + n - 2$
7. Uchburchak tomonlari 5, 6, 7 sm. Uning yuzasini ( $\text{sm}^2$ ) toping.  
A)  $5\sqrt{5}$  B)  $6\sqrt{6}$  C) 6 D) 8
8.  $x, y$  butun sonlar uchun  $-8 \leq x \leq 19$ ,  $-4 \leq y \leq 13$  va  $x - y \neq 0$  bo'lsa,  $\frac{x+y}{x-y}$  ning eng katta qiymatini toping.  
A) 32 B) 28 C) 27 D) 18
9. Agar  $ABC$  o'tkirburchakli uchburchakda  $AB=0,7$ ;  $BC=0,9$ ;  $\sin B=0,8$  bo'lsa, uchinchi tomonning kvadratini toping.  
A) 0,544 B) 0,519 C) 0,541 D) 0,543
10. Teng yonli uchburchakning yon tomoni 10 sm, asosi 12 sm ga teng. Uchburchakka ichki chizilgan aylanaga o'tkazilgan urinmalar uchburchakning asosiga tushirilgan balandligiga parallel va berilgan uchburchakdan ikkita to'g'ri burchakli uchburchak ajratadi. Ushbu uchburchakning tomonlarini (sm) toping.  
A) 3; 4; 5 B) 2; 3; 4 C) 2; 2; 3 D) 3; 3; 5
11.  $\frac{2^{19} \cdot 27^3 + 15 \cdot 4^9 \cdot 9^4}{6^9 \cdot 2^{10} + 12^{10}}$  ni hisoblang.  
A)  $\frac{1}{3}$  B)  $\frac{1}{2}$  C) 1 D) 2
12. Teng yonli trapetsiyaning diagonali 10 ga teng va u asos bilan  $60^\circ$  li burchak tashkil etadi. Trapetsiyaning o'rta chizig'ini toping.  
A)  $\frac{5\sqrt{3}}{2}$  B) 4 C) 6 D) 5
13.  $\log_2(x^2 + 2x + 4) + \log_2(x - 2) < \log_2(x^3 - x^2 + 4x - 3)$  tengsizlikni yeching.  
A) (2; 5) B) (-1; 2) C) (1; 5) D) (-1; 5)
14. To'g'ri to'rtburchakning diagonali 17 sm, tomonlaridan biri esa 8 sm. To'g'ri to'rtburchakning yuzini ( $\text{sm}^2$ ) toping.  
A) 140 B) 120 C) 160 D) 80
15.  $\sqrt[3]{0,5} + \sqrt[3]{4} - \sqrt[3]{13,5}$  ni hisoblang.  
A)  $-\sqrt[3]{5}$  B)  $-\sqrt[3]{2}$  C)  $\sqrt[3]{5}$  D) 0
16.  $(x - 4)(x - 7)(x - 9) > 0$  tengsizlikni yeching.  
A)  $x \in (-\infty; 4) \cup (7; 9)$   
B)  $x \in (4; 7) \cup (9; \infty)$   
C)  $x \in (4; 7)$   
D)  $x \in (7; 9)$
17.  $ABC$  uchburchak berilgan.  $AB$  to'g'ri chiziqqa parallel tekislik bu uchburchakning  $AC$  tomonini  $A_1$  nuqtada,  $BC$  tomonini  $B_1$  nuqtada kesib o'tadi.  $AB=15$  sm,  $AA_1 : AC = 2 : 3$  bo'lsa,  $A_1B_1$  kesma uzunligini (sm) toping.  
A) 3 B) 2 C) 4 D) 5
18. Aylananing ikkita kesishuvchi vatarlaridan birining uzunligi 36 sm, ikkinchisi kesishish nuqtasida 18 sm va 16 sm li kesmalarga ajraladi. Birinchi vatarning kesmalarini aniqlang.  
A) 12 va 24 B) 16 va 20 C) 17 va 19  
D) 22 va 14

19. 112 soni shunday 3 bo'lakka bo'linganki, 2-bo'lak 1-bo'lakning 10% ini, 3-bo'lak 2-sining 20% ini tashkil etadi. O'rta bo'lakni toping.  
A) 112/13 B) 10 C) 20 D) 5
20.  $\sqrt{x+1} + \sqrt{2x+3} = 5$ , tenglamaning haqiqiy ildizlari yig'indisini toping.  
A) -6 B) 3 C) -3 D) 143
21.  $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \dots \cdot \sin 45^\circ}{\cos 46^\circ \cdot \cos 47^\circ \cdot \dots \cdot \cos 89^\circ}$  ni hisoblang.  
A) 1 B)  $\frac{\sqrt{2}}{2}$  C)  $\frac{\sqrt{3}}{2}$  D)  $\frac{1}{2}$
22.  $3ax - 6x^2 - 8 + x^3$  ko'phad to'la kub bo'ladigan barcha  $a$  larni toping.  
A) 2 B) 4 C) -4 D) -2
23. Rombning tomoni 4 ga, o'tkir burchagi  $30^\circ$  ga teng bo'lsa, unga ichki chizilgan aylananing uzunligini toping.  
A)  $\frac{\pi}{2}$  B)  $\pi$  C)  $2\pi$  D)  $4\pi$
24. To'rtburchakli muntazam prizmaga ichki chizilgan silindr yon sirtining prizma yon sirtiga nisbatini toping.  
A) 4 B)  $\frac{\pi}{4}$  C)  $\frac{\pi}{2}$  D) 2
25.  $y = \frac{2x-1}{\sqrt{x^2-5x+6}}$  funksiyaning aniqlanish sohasini toping.  
A)  $(-\infty; 3)$   
B)  $(-\infty; 2) \cup (3; \infty)$   
C)  $(0; 2)$   
D)  $(-2; 3)$
26. Agar arifmetik progressiyada  $a_1 + a_2 + a_3 = 15$  va  $a_1 a_2 a_3 = 80$  bo'lsa, uning ayirmasini toping.  
A) 4 B) 2 C) 5 D)  $\pm 3$
27.  $f(x) = \cos^4 x - \sin^4 x$  berilgan,  $f' \left( \frac{\pi}{4} \right)$  ni toping.  
A) 2 B) 1 C) -2 D) 0
28.  $\sqrt{3x^2+7x+2} - \sqrt{2x^2+3x-2} = \sqrt{x^2+2x}$  tenglama ildizlarining yig'indisini toping.  
A) 3 B) -1 C) -2 D) -3
29. Qirralari 6 ga teng bo'lgan kubga ichki chizilgan sharning hajmini toping.  
A)  $108\pi$  B)  $36\pi$  C)  $72\pi$  D)  $27\pi$
30.  $\vec{a}(1; -2; 2)$  va  $\vec{b}(2; -2; -1)$  vektorlar berilgan bo'lsa,  $2\vec{a}^2 - 4(\vec{a}\vec{b}) + 5\vec{b}^2$  ifodaning qiymatni toping.  
A) 45 B) 44 C) 47 D) 46
31. Dastur asosida boshqariladigan birinchi hisoblash mashinasini kim va qachon ixtiro qilgan?  
A) 1930 yil, V.Bush B) 1941 yil, K.Suze  
C) 1944 yil, G.Eyken D) 1907 yil, Li de Fores
32. Protsessorlardan ma'lumotlarni baytlarda olib, qurilmalarga bitlarda uzatadigan port turini aniqlang.  
A) parallel B) ketma-ket C) slot  
D) shina
33. Tasvirli fayllarning kengaytmasi keltirilgan qatorni aniqlang.  
A) .bmp, .gif B) .com, .exe C) .bas, .pas  
D) .xls, .doc
34. MS Excel 2003 da AA21 katakchadagi "= $\text{КОРЕНЬ}(\text{СТЕПЕНЬ}(625;2))$ " formula natijasini aniqlang.  
A) 625 B) 390625 C) 25 D) 5
35. Kompyuter ekranida aks etgan holatni rasmga olish uchun qaysi klavishlardan foydalaniladi?  
A) Shift + Delete B) Ctrl + Alt + Delete  
C) Print Screen / Sys Rq D) Ctrl + F12
36. Dastur lavhasida X qaysi qiymatni qabul qiladi?  
VAR i,j,X: integer;  
BEGIN FOR i:=1 TO 2 DO;  
FOR j:=2 DOWNT0 1 DO X:=i+j; END.  
A) 3 B) 7 C) 4 D) 10

## FIZIKA

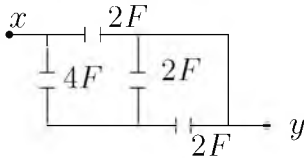
1. Kuzatuvchidan 1060 m uzoqlikda temir yo'l relsiga bolg'a bilan urildi. Kuzatuvchi relsga quloq tutib, tovushni havo orqali eshitgan vaqtdan 30 s oldin eshitgan bo'lsa, tovushning po'latdagi tarqalish tezligini (m/s) toping.  
A) 2500 B) 5000 C) 10000 D) 500

2. Maydonining energiyasi 2 J bo'lishi uchun induktivligi 1 H bo'lgan drossel chulg'amidagi tok kuchi (A) qancha bo'lishi kerak?  
A) 4 B) 2 C) 1,5 D) 3
3. Yopiq idishga to'yingan bug' qamalgan bo'lib bosimi 10 kPa. Agar bosimni 2 marta oshirib, hajmini 2 marta kamaytirsak to'yingan suv bug'larining zichligi qanday o'zgaradi? Jarayon izotermik.  
A) o'zgarmaydi  
B) haroratning qandayligicha bog'liq  
C) 2 marta oshadi  
D) 2 marta kamayadi
4. Induktivligi 0,4 H bo'lgan o'tkazgichning induktiv qarshiligi ( $\Omega$ ) tok chastotasi 50 Hz bo'lganda qanday?  
A) 200 B) 126 C) 113 D) 20
5. 6 m balandlikdan erkin tushayotgan 5 kg massali jismning yer sirtidan 3 m balandlikdagi potensial energiyasi (J) nimaga teng?  
A) 180 B) 300 C) 150 D) 100
6. Tutash idishga simob ( $\rho_{sm}=13600 \text{ kg/m}^3$ ) quyildi, uning ustidan bitta idishga 20 sm balandlikda kerosin ( $\rho_k=800 \text{ kg/m}^3$ ) quyildi. Ikkinchisiga 48 sm balandlikda moy ( $\rho_m=900 \text{ kg/m}^3$ ) quyildi. Ikkala idishdagi simob sathlarining farqini (sm) aniqlang.  
A) 4,4 B) 4,0 C) 1,0 D) 2,0
7. Harorati 600 K bo'lgan bir atomli gaz molekulasi ilgari lanma harakatining kinetik energiyasi (J) qanday bo'ladi?  
A)  $10 \cdot 10^{-21}$  B)  $6,21 \cdot 10^{-21}$   
C)  $62,1 \cdot 10^{-21}$  D)  $12,4 \cdot 10^{-21}$
8. Bir uchiga 180 N yuk osilgan sterjen yukdan sterjen uzunligining 0,2 qismiga teng masofada tirgovich qo'yilsa u gorizontal holatda muvozanotda buladi. Sterjen og'irligi (N) qancha?  
A) 180 B) 100 C) 120 D) 240
9. Bikrligi 250 N/m bo'lgan prujinaga bog'lab qo'yilganda 16 s ichida 20 marta tebradigan yukning massasini (kg) toping.  $\pi^2=10$   
A) 0,4 B) 1,6 C) 4 D) 16
10. Qarshiliklari  $R_1=180 \Omega$  va  $R_2=360 \Omega$  bo'lgan ikkita chiroq  $U=120 \text{ V}$  kuchlanishli tarmoqqa parallel ulandi. Chiroqlarning har birida qanday quvvat ajraladi?  
A)  $P_1=80 \text{ W}$ ;  $P_2=40 \text{ W}$   
B)  $P_1=80 \text{ W}$ ;  $P_2=50 \text{ W}$   
C)  $P_1=60 \text{ W}$ ;  $P_2=80 \text{ W}$   
D)  $P_1=80 \text{ W}$ ;  $P_2=60 \text{ W}$
11. Yerdan Oygacha bo'lgan masofa 384 ming km bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?  
A) 1,5 B) 1,2 C) 1,3 D) 1,4
12. Temperaturasi  $40^\circ\text{C}$  ga ortganda 5 mol neon gazining ichki energiyasi (J) qanchaga o'zgaradi? Neonning nisbiy molekular massasi  $M_r=20 \text{ g/mol}$   
A) 2004 B) 2493 C) 2755 D) 3257
13.  $60 \text{ dm}^3$  hajmdagi ballonda  $27^\circ\text{C}$  temperaturadagi 5 atm bosim ostida vodorod bor. Vodorodni ideal deb hisoblab ,gazning massasini (g) aniqlang.  
A) 24 B) 40 C) 72 D) 12
14. Loshmida sonini belgilang.  
A)  $2,3 \cdot 10^{25} \text{ m}^{-3}$  B)  $2,7 \cdot 10^{25} \text{ m}^{-1}$   
C)  $2,7 \cdot 10^{25} \text{ m}^{-3}$  D)  $2,3 \cdot 10^{25} \text{ m}^{-1}$
15. Agar ionlagichning ishlashini o'zgartirmay turib plastinkalar yaqinlashtirilsa, to'yinish tokining kuchi qanday o'zgaradi?  
A) ortishi ham, kamayishi ham mumkin  
B) o'zgarmaydi  
C) ortadi  
D) kamayadi
16. Balandligi 210 m bo'lgan sharsharadan tushayotgan suvning pastdagi temperaturasi sharshara boshidagi temperaturasidan qancha ( $^\circ\text{C}$ ) ortiq? Suvning solishtirma issiqlik sig'imi  $4200 \text{ J}/(\text{kg}\cdot\text{K})$ . Mexanik energiya suvning isishi uchun sarf bo'ladi.  
A) 1 B) 2 C) 0,5 D) 1,2

17. Yadro nuklonlarga ajratib yuborildi. Bunda energiya yutiladimi yoki ajraladimi?  
 A) ajraladi  
 B) yutiladi  
 C) yutilishi ham, ajralishi ham mumkin  
 D) og'ir yadrolarda yutiladi, yengil yadrolarda ajraladi
18. Kanalning kesimi asoslari 2 va 2,5 m balandligi esa 1 m bo'lgan trapetsiya shaklida suvning oqish tezligi 0,4 m/s bo'lsa kanaldagi suv sarfi ( $\text{m}^3/\text{s}$ ) toping.  
 A) 15 B) 45 C) 0,7 D) 0,9
19. Elektr dvigateli ulangan simdan 0,5 A tok o'tmoqda. Undagi kuchlanish 20 V. Dvigatel 1 soatda qancha ish (kJ) bajaradi? Dvigatelning FIK 80% ga teng.  
 A) 800 B) 288 C) 480 D) 28,8
20. 220 V kuchlanishli elektr tarmoqqa ulangan elektr lampochkadan 1 A tok o'tmoqda. Shu lampochkani 110 V kuchlanishli elektr tarmoqqa ulansa, undan qancha tok kuchi (A) o'tadi?  
 A) 0,5 B) 3 C) 1 D) 2
21. Gorizontall ravishda aylanayotgan disk ustida, disk o'qidan 1 m masofada 1 m/s chiziqli tezlik bilan aylanayotgan jism ishqalanish koeffitsiyenti qanday bo'lganda joyidan qo'zg'ala boshlaydi?  
 A) 0,2 B) 0,05 C) 0,1 D) 0,01
22. Tebranish konturi sig'imi 200 pF bo'lgan kondensator va induktivligi 10 mH bo'lgan g'altakdan iborat. Agar tok kuchi amplitudasi 1,0 A bo'lsa, kuchlanish amplitudasini (V) toping.  
 A) 7380 B) 7070 C) 7290 D) 7200
23. Quyidagi tushunchalardan noto'g'rlarini ko'rsating.  
 1) vaqt birligida tezlikning o'zgarishi tezlanish deyiladi;  
 2) harakatning boshlang'ich va oxirgi nuqtasini birlashtiruvchi kesma ko'chish deyiladi;  
 3) harakatning o'rtacha tezligi o'rtacha arifmetik qiymatidan katta  
 A) 1, 2 B) 2, 3 C) 2 D) 3
24. Massasi va radiusi 2 marta katta bo'lgan sayyoraga Yerdagiga nisbatan raketani uchirish uchun qanday birinchi kosmik tezlik (km/s) kerak?  $v_{Yer}=8 \text{ km/s}$  - yerdagi birinchi kosmik tezlik.  
 A) 8 B)  $8\sqrt{2}$  C) 4 D) 16
25. Massasi 4,9 kg bo'lgan jism 2,5 kg massali qo'zg'almas jism bilan to'qnashgandan keyin bu ikki jismlar sistemasining kinetik energiyasi 5 J ga teng bo'lib qolgan. Urilishni markaziy va noelastik hisoblab birinchi jismning urilishdan oldingi kinetik energiyasini (J) toping.  
 A) 8,5 B) 8,0 C) 7,55 D) 7,0
26. Radiusi  $R$  bo'lgan shar yerda tinch turibdi. O'lchami sharning o'lchamidan ancha kichik jism sharning yuqorigi nuqtasidan tinch holatdan boshlab sirpanmoqda. Yer sirtidan qanday  $h$  balandlikda jism shardan ajraladi?  
 A)  $h = 5R/3$  B)  $h = R/3$  C)  $h = 2R/3$   
 D)  $h = 2,5R$
27. Sterjen qanday tezlik bilan harakatlansa, uning uzunligi 2 marta kamayadi?  
 A)  $v = \frac{\sqrt{2}}{2}c$   
 B)  $v = \frac{\sqrt{5}}{2}c$   
 C)  $v = \frac{1}{2}c$   
 D)  $v = \frac{\sqrt{3}}{2}c$
28. Fotonning energiyasi  $4,4 \cdot 10^{-19} \text{ J}$  bo'lgan yorug'lik to'lqin uzunligi  $3 \cdot 10^{-7} \text{ m}$ . Shu muhitning absolut sindirish ko'rsatkichini aniqlang.  $h=6,63 \cdot 10^{-34} \text{ J}\cdot\text{s}$   
 A) 1,6 B) 1,5 C) 1,3 D) 2,4
29. Prujinaga birinchi jism osilganda prujina 2 sm ga cho'zildi, ikkinchi jism osilganda yesa 3 sm ga cho'zildi. Ikkala jism birgalikda osilganda prujina qancha (sm) cho'ziladi?  
 A) 1,2 B) 5,0 C) 2,5 D) 2,0

30. Induksiya vektorining moduli 700 mT bo'lgan bir jinsli magnit maydonining kuch chiziqlariga  $30^\circ$  burchak ostida 2 km/s tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2 \mu\text{C}$  ga teng.  
A) 2,8 B) 1,2 C) 1,4 D) 0,8

31. Rasmdagi  $x$  va  $y$  nuqtalar orasidagi umumiy kuchlanish 40 V. Kondensatorda to'plangan energiyani (J) toping.



- A) 3200 B) 600 C) 400 D) 800
32. Yorug'likka nisbatan shaffof moddadan yasalgan va qavariqlik radiusi 40 sm bo'lgan bir tomonlama qavariq linzaning optik kuchi +2 dptr. Linza tayyorlangan moddaning sindirish ko'rsatkichi qanday?  
A) 1,8 B) 1,3 C) 1,5 D) 1,13
33. 2 m/s boshlang'ich tezlik va  $2 \text{ m/s}^2$  tezlanish bilan harakatlanayotgan jismning 4-sekunddagi ko'chishining modulini (m) toping.  
A) 10 B) 11 C) 9 D) 8
34. Bir xil 5 nC dan elektr zaryadiga ega bo'lgan, radiuslari 2 sm va 6 sm ga teng bo'lgan metall sharlar bir-biriga tekizilsa va dastlabki holatga qaytarilsa ularning ta'sirlashuv energiyasi qanday o'zgaradi?  
A) 25% ortadi B) 25% kamayadi  
C) o'zgarmaydi D) 32% ortadi
35. Qarshiligi  $5 \Omega$  bo'lgan o'tkazgichning ko'ndalang kesmidan 1,5 min davomida 45 C zaryad miqdori o'tdi. Shu o'tkazgichning uchlaridagi kuchlanishni (V) toping.  
A) 1 B) 2,5 C) 5 D) 2
36. 4 marta kattalashtiradigan lupaning optik kuchini (dptr) aniqlang.  
A) 16 B) 4 C) 8 D) 1

1. Choose the answer which correctly completes the sentence.  
We had to walk home in the rain because Jimmy ... his car keys.  
A) was losing B) has lost C) lost  
D) had lost
2. Choose the answer which correctly complete the sentence.  
Peter would buy a Cadillac if it ... so expensive.  
A) isn't B) wasn't C) weren't  
D) hasn't been
3. Choose the answer which correctly completes the sentence.  
"Please, please don't hurt him!"  
They ... me not to hurt him.  
A) advised B) warned C) begged  
D) ordered
4. Choose the answer which correctly completes the sentence.  
He never found his key ... he looked in every pocket and every drawer.  
A) despite B) though C) as D) because
5. Choose the answer which correctly completes the sentence.  
He's talked about it many times. Any ... discussion is useless.  
A) furthest B) further C) far D) farthest
6. Choose the answer which correctly completes the sentence.  
You will see nothing ... you use a microscope. It is the most interesting insect.  
A) in case B) unless C) if D) providing
7. Choose the answer which correctly completes the sentence.  
Now when he's back to his home town it feels ... to be working in his old school.  
A) strangely B) stranger C) strange  
D) strangeness
8. Choose the answer which correctly completes the sentence.  
I would go out more often if I ... to work so much.  
A) hadn't B) don't have C) wouldn't have  
D) didn't have

9. Choose the answer which correctly completes the sentence.  
Emily stopped her car to let a black cat ... across the street.  
A) *runs* B) *ran* C) *run* D) *to run*
10. Choose the answer which correctly completes the sentence.  
Why did you say that Paul ... a careful driver?  
A) *hasn't* B) *isn't* C) *were*  
D) *hadn't been*
11. Choose the answer which correctly completes the sentence.  
Nancy used ... a bike to work, but now she drives.  
A) *to ride* B) *ride* C) *to be ridden*  
D) *riding*
12. Choose the answer which correctly completes the sentence.  
These scissors, owing to Mother's warning ... kept out of the children's reach.  
A) *being* B) *is* C) *was* D) *are*
13. Choose the answer which correctly completes the sentence.  
Parents have a big ... to give their children the right start in life.  
A) *responsibility* B) *responsive*  
C) *responsible* D) *respond*
14. Choose the answer which correctly completes the sentence.  
If you don't get better I'll take you to ... hospital.  
A) *a* B) *-* C) *an* D) *the*
15. Choose the answer which correctly completes the sentence.  
He was very tired. Otherwise, he ... to the party with us last night.  
A) *would have gone* B) *went*  
C) *would be going* D) *would go*
16. Choose the answer which correctly completes the sentence.  
The five-cent coin looks very Canadian, ... it has a picture of a beaver on it.  
A) *although* B) *since* C) *despite*  
D) *when*
17. Choose the answer which correctly completes the sentence.  
- Did you see Cornie and Paula when they came?  
- No, we were away ... weekend.  
A) *that* B) *this* C) *those* D) *these*
18. Choose the answer which correctly complete the sentence.  
There's a better way to solve that problem, ...?  
A) *is it* B) *isn't it* C) *is there*  
D) *isn't there*
19. Choose the answer which correctly completes the sentence.  
The cause of car accident ... at present.  
A) *are being investigated*  
B) *is being investigated* C) *is investigated*  
D) *have been investigated*
20. Choose the answer which correctly completes the sentence.  
I selected a DVD ... random and put it in the DVD player.  
A) *at* B) *on* C) *for* D) *to*
21. Change the sentence into the Passive Voice.  
They didn't ask me my name.  
A) *My name wasn't asked.*  
B) *I didn't ask my name.*  
C) *I wasn't asked name.*  
D) *I wasn't asked my name.*
22. Choose the answer which correctly completes the sentence.  
She has travelled all over ... British Isles, France and the Netherlands.  
A) *an* B) *the* C) *a* D) *-*

23. Choose the answer which correctly completes the sentence.

George's father gives him enough money to go to school, so he ... work.

- A) *ought not to*    B) *didn't have to*  
C) *doesn't have to*    D) *has to*

Read the text. Then choose the correct answer to question 24-26.

Mountains have always evoked awe and inspired artists and adventurers throughout human existence. More recent research has led to important new insights into how mountains, the most magnificent of the Earth's formations, came to be the way they are. Mountains are created and shaped, it now appears, not only by the movements of the vast tectonic plates that make up the Earth's exterior but also by factors such as climate and erosion. In particular, the interactions between tectonic, climatic and erosional processes exert strong control over the shape and maximum height of the mountains as well as the amount of time necessary to build - or destroy - a mountain range. Paradoxically, the shaping of mountains seems to depend as much on the destructive forces of erosion as on the constructive power of tectonics.

24. As it is stated in the passage, recent research has ...
- A) *enabled us to have better ideas about how mountains are shaped.*  
B) *demonstrated that tectonic plates move usually in one direction*  
C) *created more questions about the way mountains were formed.*  
D) *confirmed what we already knew about mountain formations.*
25. The movements of tectonic plates, the climate and erosion are factors ...
- A) *responsible for all the interactions that occur on the Earth's exterior.*  
B) *that help mountains reach great heights.*  
C) *that collectively form the interior of the Earth.*  
D) *that are effective in the shaping and creation of mountains.*

26. We can understand from the passage that the destructive forces of erosion and the constructive power of tectonics ...

- A) *take an equal amount of time to build a mountain.*  
B) *both play an equal role in the formation of mountains.*  
C) *are not sufficient to build mountain ranges.*  
D) *can create mountain ranges with different climates.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

The Star Tree hotel chain is in financial trouble and some of their smaller hotels are going to have to be sold. Rising costs are being blamed (27)... recent losses and many smaller hotels (28)... to have been losing money for many years. No buyer has yet been found for the properties.

- 27.
- A) *about*    B) *with*    C) *for*    D) *to*
- 28.
- A) *are reporting*    B) *have reported*  
C) *been reported*    D) *are reported*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

In 900AD the cities of the Mayan civilization were still prosperous, but a hundred years later they (29)... . A number of theories have been put (30)... to explain this. One theory is that the Mayan ruling class died out because rulers did not work and so became (31)..., and there was nobody to tell the formers what to do.

- 29.
- A) *abandoned*    B) *had abandoned*  
C) *had been abandoned*  
D) *have been abandoned*
- 30.
- A) *at*    B) *forward*    C) *down*    D) *through*



31.

- A) *healthy*   B) *unhealthy*   C) *unhealth*  
D) *health*

Read the text. Then choose the correct answer to questions 32-33.

Launched on October 4, 1957, Sputnik 1 was the first craft in orbit around the earth. Named from the Russian phrase for "traveling companion of the world" (Sputnik Zemli), it was a small satellite measuring only 58 cm across. It circled the earth once 96,2 minutes and transmitted information about the earth's atmosphere. After 57 days in space, it re-entered the atmosphere and was destroyed.

This historic launch began an era of intensive space programmes by both the Soviet Union and the United States. In the next three decades, hundreds of probes, satellites, and other missions were to follow Sputnik on the quest to explore both the wonders and the practical potential of space.

32. What is the main idea of the text?

- A) *The success of Sputnik 1 exploration.*  
B) *The main role of satellites is to send information from space.*  
C) *United States tried hard to launch their own satellite.*  
D) *Sputnik 1's crash on re-entry delayed other explorations.*

33. How long did Sputnik 1 stay in space?

- A) *96,2 minutes*   B) *4 days*   C) *57 days*  
D) *58 minutes*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deimos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Mars is larger than Earth*  
B) *Mars has two moons*  
C) *Martian soil is rocky*  
D) *It takes longer for Mars to circle the Sun than it takes Earth*

35. Man-made canals were supposedly discovered by ...

- A) *Viking I*   B) *Schiaparelli*   C) *Martian*  
D) *Phobos*

36. Mars has been nicknamed as ...

- A) *The Red Planet*   B) *Deimos*   C) *Viking I*  
D) *Martian*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000042**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1.  $7 \cdot 5^2$  va  $3^2 \cdot 5 \cdot 7$  sonlari uchun EKUK ni toping.  
A) 3150 B) 1500 C) 315 D) 1575
2. Oltiburchakli muntazam prizma eng katta diagonal kesimining yuzi  $Q$ , prizmaning qarama-qarshi yon yoqlari orasidagi masofa  $b$  bo'lsa, prizmaning hajmini hisoblang.  
A)  $\frac{3bQ}{4}$  B)  $\frac{bQ}{2}$  C)  $\frac{4bQ}{3}$  D)  $\frac{3bQ}{2}$
3.  $\log_2 3 + 2\log_4 x = \sqrt{\log_3 x \cdot \log_9 16}$  tenglamani yeching.  
A)  $\log_3 4$  B) 16 C) 12 D)  $\frac{16}{3}$
4. Ikkita doira radiuslari 1:2 nisbatda. Katta doira aylanasining uzunligi  $8\pi$ . Kichik doira yuzini toping.  
A)  $4\pi$  B)  $\pi$  C)  $8\pi$  D)  $2\pi$
5. Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.  
A) 15 B) 20 C) 30 D) 10
6. To'g'ri burchakli uchburchakning katetlaridan biri 15 sm ga, ikkinchi katetning gipotenuzadagi proyeksiyasi esa 16 sm ga teng. Bu uchburchakka ichki chizilgan aylananing radiusini (sm) toping.  
A) 4 B) 5 C) 6 D) 3
7.  $\sqrt{\frac{a^2}{3} + \sqrt{\frac{a^2}{3} + \sqrt{\frac{a^2}{3} + \dots}}} = 4$  tenglikni qanoatlantiruvchi  $a$  musbat sonni toping.  
A) 6 B) 2 C) 8 D) 4
8.  $P(x) = (x^2 - 3x + n)^3$  ko'phadning koeffitsientlar yig'indisi 64 ga teng bo'lsa,  $n$  ni toping.  
A) 6 B) 8 C) 4 D) 2
9. Geometrik progressiyada  $b_9 \cdot b_{19} = 9$  ga teng,  $b_1 \cdot b_{27} + 1$  ni toping.  
A) 5 B) 2 C) 4 D) 10
10.  $f(x) = \frac{1}{\sin^2 x} + x^2$ ,  $F(x) = ?$   
A)  $-ctgx + \frac{x^3}{3} + c$  B)  $ctgx + 2x^2 + c$   
C)  $ctgx + \frac{2x^2}{3} + c$  D)  $ctgx + 2x + c$
11.  $\frac{18}{2 + \frac{x+7}{2 + \frac{x-3}{2}}} = 3$  tenglamani yeching.  
A) 3 B) 4 C) 5 D) 1
12.  $y = 1994x + 2013$  funksiya grafigi qaysi choraklardan o'tadi?  
A) I, III, IV B) II, III, IV C) I, II, IV D) I, II, III
13.  $ABC$  uchburchakda  $BH$  -balandlik,  $CM$  -mediana,  $MH=12$  bo'lsa,  $AB$  ni toping.  
A) 12 B) 28 C) 20 D) 24
14.  $\sqrt{x-3} - 2\sqrt{x-4} + \sqrt{x-4\sqrt{x-4}} = 1$  tenglamaning ildizlarini toping.  
A) [6; 8] B) [6; 9] C) [5; 8] D) [3; 4]
15. Kesik konusning yon sirti  $10\pi$  ga, to'la sirti  $18\pi$  ga teng. Konusning to'la sirti unga ichki chizilgan shar sirtidan qanchaga ortiq?  
A)  $16\pi$  B)  $15\pi$  C)  $10\pi$  D)  $14\pi$
16.  $y = \sqrt{25 - x^2}$  funksiyaning grafigi bo'lgan egri chiziq va  $y = 0$  to'g'ri chiziq bilan chegaralangan shakl yuzini toping.  
A)  $12,5\pi$  B)  $5\pi$  C) aniqlab bo'lmaydi D)  $25\pi$
17.  $y = 2\cos^2 \frac{x}{2} - tgx \cdot ctgx$  funksiyaning qiymatlari to'plamini toping.  
A)  $(-1; 0) \cup (0; 1)$  B)  $[0; 3]$  C)  $[1; 3]$  D)  $(1; 2) \cup (2; 3)$
18. Agar  $ABC$  o'tkirburchakli uchburchakda  $AB=0,7$ ;  $BC=0,9$ ;  $\sin B=0,8$  bo'lsa, uchinchi tomonning kvadratini toping.  
A) 0,544 B) 0,519 C) 0,541 D) 0,543
19. Yuzi  $120 \text{ sm}^2$ , diagonali esa 17 sm bo'lgan to'g'ri to'rtburchakning tomonlarini (sm) toping.  
A) 30; 4 B) 16; 12 C) 12; 10 D) 15; 8
20.  $4^{tg^2 x} + 2^{\frac{1}{\cos^2 x}} - 80 = 0$  tenglamani yeching.  
A)  $\frac{\pi}{4} + \pi k, k \in Z$   
B)  $\pi(k+1), k \in Z$   
C)  $\pi k, k \in Z$   
D)  $\pm \frac{\pi}{3} + \pi k, k \in Z$

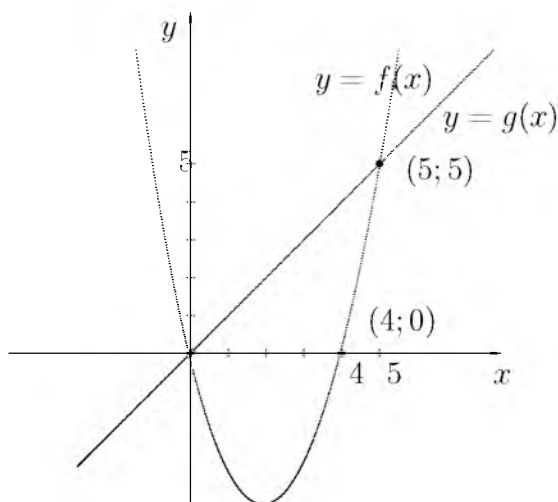
21. 
$$\begin{cases} \frac{x+3}{3-x} < 2, \\ x^3 < 16x, \\ 4 \geq x^2 \end{cases}$$
 tengsizliklar sistemasini yeching.

- A) (4; 6] B) (3; 5) C) (0; 1) D) [2; 3]

22.  $x^3 - x + 3 = 0$  bo'lsa,  $(x^3 - x + 1) \cdot (x^3 + 3)$  ning qiymatini toping.

- A)  $-2x$  B)  $-4x$  C)  $2x$  D)  $0$

23. Quyidagi chizmaga asoslanib  $\frac{f(8)}{g(8)}$  ning qiymatini toping.



- A)  $-4$  B)  $4$  C)  $3$  D)  $2$

24.  $\frac{(x^2 + x + 1)x^2}{x^2 - 5x + 6} < 0$  tengsizlikni yeching.

- A)  $(-\infty; 2] \cup [3; \infty)$   
 B) (2; 3)  
 C)  $(-\infty; 2]$   
 D) [2; 3]

25.  $\frac{8-n}{2+\sqrt[3]{n}} : \left(2 + \frac{\sqrt[3]{n^2}}{2+\sqrt[3]{n}}\right) - \left(\sqrt[3]{n} + \frac{2\sqrt[3]{n}}{\sqrt[3]{n}-2}\right) \cdot \frac{4-\sqrt[3]{n^2}}{\sqrt[3]{n^2}+2\sqrt[3]{n}}$  ifodani soddalashtiring. ( $n \neq \pm 8$ )

- A)  $0$  B)  $\frac{1}{n}$  C)  $2$  D)  $1$

26. Tekislikdan  $h$  uzoqlikda joylashgan nuqtadan tekislikka o'tkazilgan va tekislik bilan  $30^\circ$  li burchak hosil qiladigan og'maning uzunligini toping.

- A)  $\sqrt{2}h$  B)  $\sqrt{3}h$  C)  $2h$  D)  $1,5h$

27. Muntazam o'nburchakka tashqi chizilgan aylana radiusi  $\frac{2}{\sin 18^\circ}$  ga teng bo'lsa, uning tomonini toping.

- A)  $4$  B)  $6$  C)  $2$  D)  $3$

28.  $\vec{a}(3; 4)$  vektorga perpendikular bo'lgan birlik vektorni toping.

- A)  $\left(\frac{3}{5}; \frac{4}{5}\right)$  va  $\left(-\frac{3}{5}; -\frac{4}{5}\right)$   
 B)  $\left(\frac{4}{5}; \frac{3}{5}\right)$  va  $\left(-\frac{4}{5}; -\frac{3}{5}\right)$   
 C)  $\left(\frac{3}{5}; -\frac{4}{5}\right)$  va  $\left(-\frac{3}{5}; \frac{4}{5}\right)$   
 D)  $\left(\frac{4}{5}; -\frac{3}{5}\right)$  va  $\left(-\frac{4}{5}; \frac{3}{5}\right)$

29. Basseyn ikkita quvur bilan 7,5 soatda to'ldiriladi. Birinchi quvurning yolg'iz o'zi basseynni ikkinchi quvurning yolg'iz o'zi to'ldirganidan 8 soat tezroq to'ldiradi. Birinchi quvurning alohida o'zi basseynni necha soatda to'ldira oladi?

- A)  $12$  B)  $15$  C)  $15,5$  D)  $16$

30.  $f(x) = \sin 2x + 4x$ ,  $f'(x) = ?$

- A)  $-\cos 2x + 4$  B)  $2\cos 2x + 4$  C)  $\cos x + 4$   
 D)  $\cos 2x + 4x$

31. Agar kitobdagi axborot hajmi 7 Kbayt bo'lsa, uni nechta "Axborot" so'zi bilan almashtirish mumkin?

- A)  $1024$  B)  $2048$  C)  $2000$  D)  $14336$

32. Sakkizlik sanoq sistemasidan ikkilik sanoq sistemasiga o'tkazishni bajaring:  $567_8 \rightarrow x_2$

- A)  $10110101_2$  B)  $101110111_2$  C)  $1111101_2$   
 D)  $11101110_2$

33. MS Word dasturi kompyuterda ishlayotgan bo'lsa, u holda ...

- A) MS Word dasturi boshqa kompyuterdan ko'chirib o'tkazilgan  
 B) MS Office paketi installyatsiya qilingan  
 C) MS Office paketi deinstallyatsiya qilingan  
 D) MS Office paketi ko'chirib o'tkazilgan

34. MS Word 2003 dasturida uskunalar panelini sozlash bo'limi qaysi menyuda joylashgan?

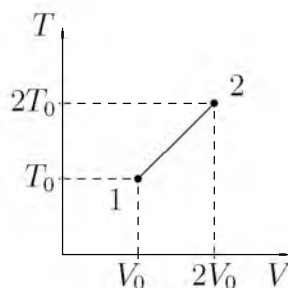
- A) Файл (Fayl) B) Правка (Tahrir)  
 C) Вид (Ko'rinish) D) Формат (Format)

35. Nuqtalar o'rniga kerakli iborani tanlang:  
Foydalanuvchi elektron pochta qutisini  
Internetga ulangan ... ocha oladi.  
A) faqat o'z kompyuterida  
B) faqat shu pochta ochilgan kompyuterda  
C) ixtiyoriy kompyuterda  
D) faqat server kompyuterda
36. Paskal dasturi lavhasidagi hisob natijasini  
aniqlang.  
begin a:=12; b:=14; c:=10; if(a>b) or (b>c)  
then y:=a+b-c else y:=a-b+c; writeln(y); end.  
A) 8 B) 6 C) 16 D) 14

### FIZIKA

1. 60 N kuch jismga  $0,8 \text{ m/s}^2$  tezlanish beradi.  
Qanday kuch (N) bu jismga  $0,2 \text{ m/s}^2$  tezlanish  
beradi?  
A) 15 B) 20 C) 10 D) 30
2. Elektropoyezdning uchinchi vagoni oldida  
turgan kuzatuvchi harakat boshlagan vagonning  
5 s davomida o'tganini, poyezdning oxiri  
o'tguncha esa 20 s vaqt o'tganini aniqlagan  
bo'lsa, poyezdning vagonlari soni nechta?  
(Poyezd harakati tekis tezlanuvchan.)  
A) 15 B) 16 C) 14 D) 18
3. Malus qonuni ifodalovchi formulani ko'rsating.  
A)  $I = I_0 \cos \alpha$  B)  $I = I_0 + I \cos \alpha$   
C)  $I = I_0 \cos^2 \alpha$  D)  $I = I_0 \sin \alpha$
4. Balandligi 210 m bo'lgan sharsharadan  
tushayotgan suvning pastdagi temperaturasi  
sharshara boshidagi temperaturasidan qancha  
(°C) ortiq? Suvning solishtirma issiqlik sig'imi  
 $4200 \text{ J/(kg}\cdot\text{K)}$ . Mexanik energiya suvning isishi  
uchun sarf bo'ladi.  
A) 1,2 B) 0,5 C) 2 D) 1
5. Prujinaga mahkamlangan shar muvozanat  
vaziyatidan chiqarib qo'yib yuborildi. Prujina  
muvozanat vaziyatidan amplitudaning  
yarmigacha ( $v_1$ ) va to'rttdan bir qismigacha ( $v_2$ )  
uzoqlashgan nuqtalardagi tezliklari nisbati  
 $v_1/v_2$  ni toping. Tebranishlar kosinus qonuni  
asosida ro'y bermoqda.  $\sin 30^\circ = 1/2$ ;  
 $\sin 82^\circ = 0,99$ ;  $\sin 60^\circ = \sqrt{3}/2$ ;  $\sin 75^\circ = 0,96$   
A) 2 B)  $\sqrt{5}/5$  C)  $\sqrt{3}/2$  D)  $2\sqrt{5}$

6.  $v$  va  $2v$  tezlik bilan bir-birini quvib ketayotgan  
ikkita bir xil sharcha absolyut noelastik  
to'qnashdi. Ularning to'qnashuvdan keyingi  
tezligini toping.  
A)  $v/2$  B)  $2v$  C)  $1,25v$  D)  $1,5v$
7. O'zgaras tok manbaiga avval  $9 \Omega$  qarshilik  
so'ngra  $4 \Omega$  qarshilik ulandi. Har ikkala holda  
birday vaqt ichida qarshiliklarda bir xil  
miqdorda issiqlik ajraladi. Manbaning ichki  
qarshiligini ( $\Omega$ ) aniqlang.  
A) 6 B) 3 C) 36 D)  $\sqrt{6}$
8. Ishlab chiqarilgan o'zgaruvchan elektr toki  
kuchlanishining ta'sir qiymati 220 V ga teng  
bo'lsa, uning maksimal qiymatini (V) toping.  
A) 300 B) 330 C) 320 D) 310
9. Elektr sig'implari  $C_1 = C_2 = C_3 = 10 \mu\text{F}$  dan  
bo'lgan kondensatorlardan ikkitasi o'zaro  
paralell, uchinchi esa ularga ketma-ket  
ulangan kondensatorlar bateriyasi o'zgaras  
kuchlanish manбайдan zaryadlangan. Birinchi  
kondensator olgan elektr zaryadi 5 nC ga teng  
bo'lsa, uchinchi kondensatorning elektr  
zaryadini (nC) toping.  
A) 5 B) 7,5 C) 10 D) 15
10. Chuqurligi 5 m bo'lgan ko'ldagi suvning bosimi  
necha (kPa) teng? Atmosfera bosimi  $p_0 = 10^5 \text{ Pa}$ .  
A) 150 B) 50 C) 5 D) 15
11. Rasmda bir atomli ideal gaz 1 holatdan ikkinchi  
holatga o'tish jarayonida temperaturasini  
hajmga bog'lanishini grafigi tasvirlangan. Bu  
jarayonda gazning ichki energiyasi 45 kJ ga  
ortgan bo'lsa, gaz jami qancha issiqlik (kJ)  
qabul qilgan?



- A) 90 B) 0 C) 45 D) 75
12. Elektr dvigatelga ulangan iste'molchidan 0,5 A  
tok o'tmoqda, undagi kuchlanish 20 V. Dvigatel  
1 soatda qancha ish (kJ) bajaradi?  
Dvigatelning FIK 80% ga teng.  
A) 28,8 B) 32,5 C) 30 D) 34

13.  $m$  massali zarraning kinetik energiyasi  $W$  bo'lsa, tezligi qanday?

A)  $v = c\sqrt{1 - \left(\frac{mc^2}{mc^2 + W}\right)^2}$

B)  $v = c\sqrt{1 + \left(\frac{mc^2}{mc^2 + W}\right)^2}$

C)  $v = \sqrt{2W/m}$

D)  $v = c^2p/W$

14. 108 km/soat tezlik bilan ketayotgan 1 t li avtomobilni to'xtatish uchun qancha ish (kJ) bajarish kerak?

A) -45 B) -445 C) -450 D) -455

15. Kuzatuvchidan 1060 m uzoqlikda temir yo'l relsiga bolg'a bilan urildi. Kuzatuvchi relsiga quloq tutib, tovushni havo orqali eshitgan vaqtidan 30 s oldin eshitgan bo'lsa, tovushning po'latdagi tarqalish tezligini (m/s) toping.

A) 2500 B) 500 C) 10000 D) 5000

16. To'liq uzunligi 6,6 nm bo'lganida fotoeffektni to'xtatuvchi potensial 100 V ga teng bo'lsa, u holda elektronning shu moddadan chiqish ishini (J) aniqlang.  $h=6,62 \cdot 10^{-34}$  J·s,  $c=3 \cdot 10^8$  m/s,  $m_e = 9,1 \cdot 10^{-31}$  kg

A)  $1,4 \cdot 10^{-17}$  B)  $1,4 \cdot 10^{-15}$  C)  $1,4 \cdot 10^{-16}$   
D)  $14 \cdot 10^{-17}$

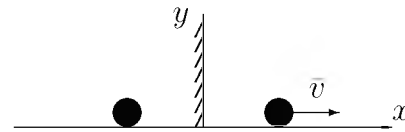
17. 100 m balandlikdan tushgan jism Yerga 40 m/s tezlik bilan tushdi. Agar jism massasi 2 kg bo'lsa havoning qarshilik kuchiga qarshi qanday ish (J) bajarilgan?

A) 200 B) 300 C) 450 D) 360

18. Tomonlarining uzunliklari bir xil bo'lgan to'g'ri to'rtburchak shaklidagi yassi g'altaklarning birinchisi 340 ta, ikkinchisi 100 ta o'ramga ega. Bir jinsli magnit maydonida ikkinchi g'altakka ta'sir etuvchi maksimal aylantiruvchi moment birinchi g'altakka nisbatan 2 marta katta. Agar ikkinchi g'altakdagi tok kuchi 170 mA ga teng bo'lsa, birinchi g'altakdagi tok kuchini toping (mA).

A) 85 B) 50 C) 25 D) 34

19. Sharcha yassi ko'zgu bilan bog'langan sistemada  $\vec{v}$  tezlik bilan kuzgudan uzoqlashmoqda. Sharcha tasvirini tezligi nimaga teng?



A)  $v$  B)  $-v$  C)  $-2v$  D)  $2v$

20. Yukni qiyaligi  $30^\circ$  bo'lgan qiya tekislik bo'ylab 100 m masofaga tortib chiqarishda 20 kJ ish bajarilgan bo'lsa, qiya tekislikni FIKi (%) qanday?

A) 75 B) 50 C) 55 D) 25

21. Elementlari parallel ulangan zanjirning o'zgaruvchan tokka nisbatan qarshiligi  $\left(\frac{1}{R^2} + \left(\omega C - \frac{1}{\omega L}\right)^2\right)^{-1/2}$  ga teng. Rezonans paytida bu qarshilik qanday bo'ladi?

A) 0

B)  $R$

C)  $\infty$

D)  $\sqrt{R^2 + (\omega C + 1/\omega L)^2}$

22. Harorati  $20^\circ\text{C}$  va bosimi 100 kPa bo'lgan  $1,45 \text{ m}^3$  havo suyuq holatga keltirildi. Agar suyuq havoning zichligi  $860 \text{ kg/m}^3$  bo'lsa, u qanday hajmni (l) egallaydi. Havoning molyar massasi 29 g/mol.

A) 2 B) 1,5 C) 4 D) 3

23. Harorati  $-73^\circ\text{C}$  bo'lgan gaz molekullari ilgarilanma harakat kinetik energiyasini 3 marta ortirish uchun gazni qanday haroratgacha ( $^\circ\text{C}$ ) qizdirish kerak?

A) 327 B) 600 C) 219 D) 200

24. 4 g vodoroddagi modda miqdorini (mol) toping.

A) 3 B) 4 C) 1 D) 2

25. Chang'ichi  $0,2 \text{ m/s}^2$  tezlanish bilan harakatlanib, uzunligi 50 m bo'lgan qiyalikni 10 s da o'tdi. Uning qiyalik boshidagi tezligi (m/s) qanday bo'lgan?

A) 4 B) 5 C) 3 D) 2

26. 0,5 g vodorod va 32 g kislorod aralashmasining bosimi 93 kPa, harorat esa 280 K bo'lgandagi zichligi ( $\text{kg/m}^3$ ) toping. Vodorod va kislorodning molyar massasi mos ravishda 2 va 32 g/mol.  
A) 0,5 B) 1,04 C) 2 D) 1,5
27. Radiopredatchik 30 m to'liq uzunlikda ishlaydi. Uning chastotasini (Hz) toping.  $c=3 \cdot 10^8$  m/s  
A)  $10 \cdot 10^6$  B) 1000 C)  $100 \cdot 10^6$  D) 10
28. Qiya tekislikda yukni balandlikka ko'tarish uchun 20 J ish bajarildi. Bunda FIK 80% bo'lganda foydali ishni (J) toping.  
A) 15 B) 16 C) 18 D) 20
29. Uzunligi 500 km, ko'ndalang kesim yuzi  $5 \text{ mm}^2$  bo'lgan aluminiy simdan 10 mA tok o'tayotgan bo'lsa, uning uchlaridagi kuchlanishni (V) toping. Aluminiyning solishtirma qarshiligi  $2,8 \cdot 10^{-8} \Omega \cdot \text{m}$ .  
A) 14 B) 21 C) 25 D) 28
30. Uzunligi 3,5 m, diametri 30 sm bo'lgan g'ola suvda suzayapti. G'olaning ustida turgan odamning massasi (kg) maksimal qancha bo'lishi mumkin? G'olaning zichligi  $0,7 \text{ g/cm}^3$ .  
A) 74 B) 35 C) 85 D) 69
31. Vakuumba elektr tokining qanday ta'sirlari namoyon bo'ladi?  
A) barcha ta'sirlari B) kimyoviy C) issiqlik D) magnit
32. 100 V va 50 V kuchlanishgacha zaryadlangan  $2 \mu\text{F}$  va  $0,5 \mu\text{F}$  sig'imli kondensatorlarni bir xil ishorali qoplamalari bilan o'zaro ulanganda issiqlikka aylangan elektr energiyasi miqdorini (J) aniqlang.  
A)  $5 \cdot 10^{-4}$  B)  $25 \cdot 10^{-4}$  C)  $2,5 \cdot 10^{-4}$  D)  $0,5 \cdot 10^{-4}$
33. Yerni radiusi 6380 km bo'lgan shar deb hisoblab, 1 kg massali jism vaznining jismni qutbdan ekvatorga ko'chirilgandagi o'zgarishini (N) aniqlang.  
A) -0,034 B) -0,043 C) -0,26 D) 0,34
34. Qavariq sferik ko'zguning egrilik radiusi 1,6 m predmet tasviri o'zi turgan masofaga qaraganda 1,5 marta yaqin bo'lishi uchun uni ko'zgundan qanday masofada (?) joylashtirish kerak?  
A) 0,4 B) 0,3 C) 0,5 D) 0,6
35. Kislorod atomining massasi uning yadrosi massasidan necha marta katta?  
A)  $\approx 1840$  B)  $\approx 16 \cdot 1840$  C)  $\approx 10^5$  D)  $\approx 1$
36. Gaz razryadi jarayonida qanday zarrachalar ishtirok etadi?  
A) elektronlar, musbat va manfiy ionlar  
B) faqat ionlar  
C) elektronlar va kovaklar  
D) faqat elektronlar

### INGLIZ TILI

- Choose the answer which correctly completes the sentence.  
Had she found the right buyer, she ... the house.  
A) sold B) would have sold C) would sell D) will sell
- Choose the answer which correctly completes the sentence.  
The best time to go shopping is in the morning ... shops are not busy then.  
A) that B) what C) when D) which
- Choose the answer which correctly completes the sentence.  
Once a busy city, Pompeii was destroyed by the eruption of ... Mount Vesuvius in 79 A.D.  
A) - B) a C) the D) an
- Choose the answer which correctly completes the sentence.  
When did you ... the books back?  
A) have to give B) had to give  
C) must give D) can give
- Choose the answer which correctly completes the sentence.  
The Great Wall of China is ... structure that has ever been built.  
A) the longest B) long C) longest D) longer
- Choose the answer which correctly complete the sentence.  
My feet are killing me. I ... to standing in queues for long periods of time.  
A) am not used B) used not C) didn't use D) don't use

7. Choose the answer which correctly completes the sentence.  
The class got ... when the professor entered.  
A) *quietness* B) *quiet* C) *quietly*  
D) *quieting*
8. Choose the answer which correctly complete the sentence.  
I visited Brazil in April. I ... at a nice hotel for a fortnight.  
A) *was staying* B) *had stayed*  
C) *had been staying* D) *stayed*
9. Choose the answer which correctly completes the sentence.  
He'll never forgive her for lying to him, ... he?  
A) *wouldn't* B) *will* C) *won't* D) *would*
10. Choose the answer which correctly completes the sentence.  
The historical places ... last year.  
A) *are visited* B) *were visiting* C) *visit*  
D) *were visited*
11. Choose the answer which correctly completes the sentence.  
Scientists say that the satellite ... to Earth some time this afternoon.  
A) *falls* B) *is going to fall* C) *would fall*  
D) *had fallen*
12. Choose the answer which correctly complete the sentence.  
We usually have ... breakfast at 8 o'clock.  
A) *a* B) *-* C) *the* D) *an*
13. Choose the answer which correctly complete the sentence.  
We have just heard on TV that, hurricane Jefferey ... hit the Caribbean, causing widespread damage in Puerto Rico.  
A) *have* B) *has* C) *-* D) *was*
14. Choose the answer which correctly completes the sentence.  
How can he phone her ... he remember her number?  
A) *if* B) *despite* C) *in case* D) *unless*
15. Choose the answer which correctly completes the sentence.  
The twins were difficult to tell apart, particularly when they wore very ... clothing.  
A) *different* B) *the same* C) *alike*  
D) *similar*
16. Choose the answer which correctly completes the sentence.  
When she ran ... of tea, her neighbour gave her some.  
A) *in* B) *up* C) *out* D) *by*
17. Choose the answer which correctly completes the sentence.  
That film was released only two days ago, so you ... the film last week.  
A) *couldn't have seen* B) *mustn't see*  
C) *needn't see* D) *couldn't see*
18. Choose the answer which correctly completes the sentence.  
Whose spectacles are these? - ... are on the table, and these are my spectacles.  
A) *Their* B) *Yours* C) *Your* D) *Our*
19. Choose the answer which correctly completes the sentence.  
Mary said she was worried that her son ... studying very well that year.  
A) *hasn't* B) *was* C) *isn't* D) *wasn't*
20. Choose the answer which correctly complete the sentence.  
I wish I ... taller, because I am not very tall.  
A) *will be* B) *were* C) *would have been*  
D) *would be*
21. Choose the answer which correctly complete the sentence.  
We went home so that we could hear the news of Eurovision ... the radio.  
A) *on* B) *in* C) *from* D) *for*
22. Choose the answer which correctly completes the sentence.  
A telephone recorder tells callers what time ..., so you needn't go specially to find out the time.  
A) *does the movie start* B) *start the movie*  
C) *starts the movie* D) *the movie starts*



23. Choose the answer which correctly complete the sentence.

If you can't start the car, why don't you try ... it with all your force?

- A) *pushes*    B) *pushing*    C) *push*  
D) *pushed*

Read the text. Then choose the correct answer to question 24-26.

Babies whose mothers smoke during pregnancy could be at higher risk of growing up to be criminals, new research suggests. This is the first study to examine the relationship between mothers who smoke and their children's adult behaviour. The findings were based on data for 4,169 males born in Copenhagen between September 1959 and December 1961. Their arrest records at age 34 were studied. It was discovered that the number of cigarettes their mothers had smoked during the last third of their pregnancy affected the men's arrests for both violent and non-violent crimes. This was true even when other possible causes, such as use of alcohol, divorce, income, and home environment had been taken into consideration.

24. The main idea of the passage is that ...

- A) *smoking during pregnancy increases the possibility of the child committing crimes in adult life.*  
B) *4,169 males were born in Copenhagen between the years 1959 and 1961*  
C) *most criminals are heavy smokers*  
D) *pregnant women who smoke should be regarded as criminals and be punished.*

25. The research mentioned in the passage ...

- A) *studied only the last third of a mother's pregnancy.*  
B) *mainly dealt with the adult behaviour of the children of smoking mothers.*  
C) *concentrated on the effects of smoking before and after pregnancy.*  
D) *was a repetition of several previous studies, which were inconclusive.*

26. From the passage, we can say that the researchers were careful because ...

- A) *they chose subjects who had only committed minor crimes.*  
B) *all men born between September 1959 and December 1961 were studied.*  
C) *they studied so many men from so many different countries.*  
D) *other possible causes of crime were also considered.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Although they were described as the (27)... designs in many years, there isn't anything very new about the latest line of shoes from Santorelli. As one of the most famous designers in Italy, Salvatore Santorelli is expected to do more than simply repeat the previous year's (28)... formula of "smart, but casual" sandals in a range of pastels.

- 27.

- A) *first new Italian*    B) *new first Italian*  
C) *first Italian new*    D) *Italian first new*

- 28.

- A) *success*    B) *successful*    C) *successfully*  
D) *succession*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

- 29.

- A) *familiar*    B) *familiarize*    C) *familiarity*  
D) *familiarly*

- 30.

- A) *are*    B) *will be*    C) *is*    D) *have been*

31.

- A) *with*    B) *into*    C) *of*    D) *towards*

Read the text. Then choose the correct answer to question 32-33

One chilly autumn morning in 1945, five thousand shoppers crowded the pavements outside Gimbels Department Store in New York City. The day before, Gimbels had taken out a full-page newspaper advertisement in the *New York Times*, announcing the sale of the first ballpoint pens in the United States. Within six hours, Gimbels had sold its entire stock of ten thousand ballpoints at \$12.50 each—approximately \$130 at today's prices.

In fact this “new” pen was not new after all, and was just the latest development in a long search for the best way to deliver ink to paper. In 1884 Lewis Waterman had patented the fountain pen, giving him the sole rights to manufacture it. This marked a significant leap forward in writing technology, but fountain pens soon became notorious for leaking. In 1888, a leather tanner named John Loud devised and patented the first “rolling-pointed marker pen” for marking leather. Loud's design contained a reservoir of ink in a cartridge and a rotating ball point that was constantly bathed on one side with ink.

Loud's pen was never manufactured, however, and over the next five decades, 350 additional patents were issued for similar ball-type pens, though none advanced beyond the design stage. Each had their own faults, but the major difficulty was the ink: if the ink was thin, the pens leaked, and if it was too thick, they clogged. Depending on the climate or air temperature, sometimes the pens would do both. Almost fifty years later, Ladislav and Georg Biro, two Hungarian brothers, **came up with** a solution to this problem. In 1935 Ladislav Biro was working as a journalist, editing a small newspaper. He became frustrated by the amount of time he wasted filling fountain pens with ink and cleaning up ink smudges. Ladislav and Georg set about making models of new pen designs and creating better inks to use in them. Ladislav observed the ink in newspaper printing dried rapidly, leaving the paper dry and smudge-free. He was determined to construct a pen using the same type of ink. However, the thicker ink would not flow from a regular pen nib so he had to develop a new type of point. Biro came up with the idea of fitting his

pen with a tiny ball bearing in its tip. As the pen moved along the paper, the ball bearing rotated and picked up ink from the ink cartridge which it delivered to the paper.

32. The problem with the ballpoint pens invented between 1888 and 1935 was that ...
- A) *they cost a great deal of money to manufacture*  
 B) *the technology to manufacture them did not exist*  
 C) *they could not write on ordinary paper*  
 D) *they were affected by weather conditions*
33. What does “**came up with**” in bold mean?
- A) *to reject*    B) *to suggest*    C) *to get rid of*  
 D) *to move towards*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deimos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?
- A) *Mars is larger than Earth*
  - B) *Mars has two moons*
  - C) *Martian soil is rocky*
  - D) *It takes longer for Mars to circle the Sun than it takes Earth*
35. Man-made canals were supposedly discovered by ...
- A) *Viking I*
  - B) *Phobos*
  - C) *Martian*
  - D) *Schiaparelli*
36. Mars has been nicknamed as ...
- A) *Viking I*
  - B) *The Red Planet*
  - C) *Martian*
  - D) *Deimos*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000043**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1.  $ABC$  uchburchak berilgan.  $AB$  to'g'ri chiziqqa parallel tekislik bu uchburchakning  $AC$  tomonini  $A_1$  nuqtada,  $BC$  tomonini  $B_1$  nuqtada kesib o'tadi.  $AB=15$  sm,  $AA_1 : AC = 2 : 3$  bo'lsa,  $A_1B_1$  kesma uzunligini (sm) toping.  
A) 5 B) 2 C) 4 D) 3
2.  $\left((-15)^{-3}\right)^{-8} : \left((-15)^{-13}\right)^{-2} - \left(-\frac{1}{15}\right)^2$  ni hisoblang.  
A)  $-\frac{1}{225}$  B) 0 C)  $\frac{2}{225}$  D) 50
3. Sotuvchi kilosi 1500 so'mdan 100 kg olma sotib oldi. 20 kg maydaroq olmalarni sotuvchi 1750 so'mdan, qolganlarini 2000 so'mdan sotdi. Bu tijoratda sotuvchi necha foiz foyda qilgan?  
A) 27 B) 25 C) 30 D) 35
4.  $ABC$  uchburchakda  $AB = 3AC$ . Uchburchakning  $C$  va  $B$  uchlaridan o'tkazilgan balandliklarining nisbati qanday?  
A) 3:1 B) 1:4 C) 2:3 D) 1:3
5.  $|(x+3)(x+1)+1| \leq 0$  tengsizlikni yeching.  
A) 0 B) -2 C)  $\emptyset$  D) 2
6. Radiusi 5 ga teng bo'lgan doiradagi uzunligi 8 ga teng vatar doira markazidan qancha uzoqlikda bo'ladi?  
A) 3,2 B) 4 C) 3,6 D) 3
7. O'suvchi geometrik progressiyaning dastlabki uchta hadi yig'indisi 35 ga teng. Agar ulardan mos ravishda 2; 2 va 7 ni ayirsak, hosil bo'lgan sonlar arifmetik progressiyaning dastlabki uchta hadini tashkil qiladi. Shu arifmetik progressiyaning ikkinchi hadini toping.  
A) 8 B) 10 C) 5 D) 6
8.  $ax = by = cz = 6$  va  $x + y + z = 36$  ekani ma'lum bo'lsa,  $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$  ni toping.  
A) 6 B) 5 C) 9 D) 12
9. Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.  
A) 15 B) 10 C) 30 D) 20
10. Uchlari  $A(1; 1)$ ,  $B(-2; 3)$  va  $C(-1; -2)$  nuqtalarda bo'lgan uchburchakning  $A$  va  $B$  burchaklarini toping.  
A)  $90^\circ; 45^\circ$  B)  $45^\circ; 90^\circ$  C)  $30^\circ; 90^\circ$   
D)  $60^\circ; 30^\circ$
11.  $\frac{8-n}{2+\sqrt[3]{n}} : \left(2 + \frac{\sqrt[3]{n^2}}{2+\sqrt[3]{n}}\right) - \left(\sqrt[3]{n} + \frac{2\sqrt[3]{n}}{\sqrt[3]{n}-2}\right) \cdot \frac{4-\sqrt[3]{n^2}}{\sqrt[3]{n^2}+2\sqrt[3]{n}}$  ifodani soddalashtiring. ( $n \neq \pm 8$ )  
A) 1 B) 0 C) 2 D)  $\frac{1}{n}$
12. To'g'ri burchakli uchburchakning gipotenuzasi  $c$  ga, unga ichki chizilgan aylana radiusi  $r$  ga teng bo'lsa, uchburchakning yuzini toping.  
A)  $2cr$  B)  $r^2 + cr$  C)  $r^2 + c^2$  D)  $c^2 + cr$
13.  $x, y, z$  - butun sonlar bo'lib,  $\begin{cases} \frac{xy}{x-y} = -6 \\ \frac{yz}{y-z} = -\frac{15}{2} \\ \frac{xz}{x-z} = -\frac{10}{3} \end{cases}$  bo'lsa,  $x - y - z = ?$   
A) 6 B) -8 C) -6 D) 10
14. Agar tengyonli trapetsiyaning perimetri 72 ga hamda yon tomoni o'rta chizig'ining yarmiga teng bo'lsa, shu trapetsiyaning yon tomonini toping.  
A) 12 B) 10 C) 9 D) 16
15.  $\frac{x^2 - (m-4)x - 4m}{x^2 + (1-m)x - m}$  ni hisoblang.  
A)  $\frac{x-4}{x-2}$  B)  $\frac{x+4}{x+1}$  C)  $\frac{x-1}{x+2}$  D)  $\frac{x-4}{x-1}$
16. Talaba besh yilda 31 ta imtihon topshirdi. U har keyingi yilda oldingi yildagiga qaraganda ko'p imtihon topshirgan. Beshinchi kursda birinchi kursdagidan 3 marta ko'p imtihon topshirgan bo'lsa, to'rtinchi kursda nechta imtihon topshirgan?  
A) 8 B) 6 C) 7 D) 9
17. Aylananing uzunligi shu aylananing  $40^\circ$  li yoyi uzunligidan necha foiz ko'p?  
A) 800 B) 900 C) 600 D) 700
18.  $\begin{cases} x - y = 2 \\ xy = 15 \end{cases}$  tenglamalar sistemasini yeching.  
A)  $(-5; -3); (3; -5)$  B)  $(5; 3); (-5; -3)$   
C)  $(-5; 3); (3; -5)$  D)  $(5; 3); (-3; -5)$

19. Uchburchakli piramidaning yon yoqlari asos tekisligi bilan  $60^\circ$  li burchak tashkil etadi. Agar piramida asosining yuzi 40 ga teng bo'lsa, piramidaning to'la sirtini toping.

A) 80 B) 128 C) 72 D) 120

20.  $a = \left(1 + \frac{1}{2}\right) \left(1 + \frac{1}{3}\right) \left(1 + \frac{1}{4}\right) \dots \left(1 + \frac{1}{2011}\right)$ ,  
 $b = \left(1 - \frac{1}{2}\right) \left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{4}\right) \dots \left(1 - \frac{1}{2012}\right)$   
berilgan,  $a \cdot b$  ko'paytmani toping.

A) 3 B)  $\frac{1}{2}$  C) 2 D) 1

21. To'g'ri burchakli  $ABC$  uchburchakda  $\angle A = 30^\circ$  bo'lib,  $AB=6$  sm li gipotenuzasini diametri qilib, doira chizildi. Hosil bo'lgan eng kichik segmentning yuzini toping.

A)  $18\pi$  B)  $36\pi$  C)  $\frac{12\pi - 9\sqrt{3}}{4}$

D)  $\frac{6\pi - 9\sqrt{3}}{4}$

22.  $ABCDEFGH$  muntazam sakkizburchakning yuzi 1 ga teng bo'lsa,  $ABEF$  to'g'ri to'rtburchakning yuzini toping.

A)  $\frac{\sqrt{2}}{4}$  B)  $\frac{1 + \sqrt{2}}{4}$  C)  $\frac{3}{2}$  D)  $\frac{1}{2}$

23.  $\sqrt{x^2 - x - 12} + \sqrt{5x - x^2 - 4} + \operatorname{tg} \frac{\pi}{2x - 4} = 1$   
tenglamani yeching.

A) 4 B) 1 C) 1; 3 D) 3

24.  $\int_{-1}^2 (x^2 - 1) dx$  ni hisoblang.

A) 1 B) -2 C) 0 D) 2

25. Agar arifmetik progressiyada  $s_{2n} = 2013$ ,  $S_{3n} = 2001$  bo'lsa,  $S_n$  ni toping.

A) 1344 B) 1354 C) 1346 D) 1350

26.  $\log_{x-1}(x+1) > 2$  tengsizlikni yeching.

A)  $(-\infty; 0) \cup (3; \infty)$

B) (2; 3)

C)  $(2; 3) \cup (3; \infty)$

D)  $(0; 1) \cup (2; 3)$

27.  $f(x) = \cos^4 x - \sin^4 x$  berilgan,  $f' \left( \frac{\pi}{4} \right)$  ni toping.

A) 1 B) -2 C) 2 D) 0

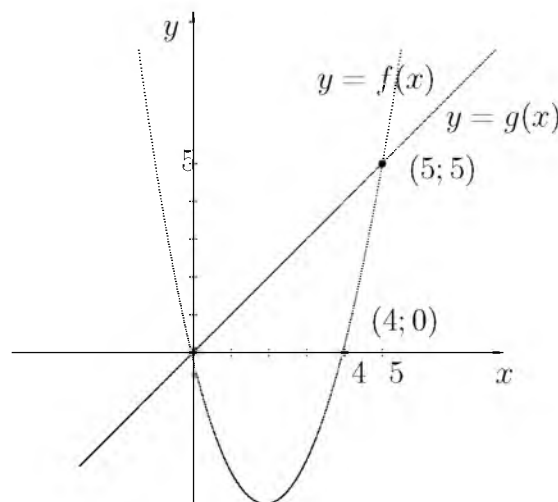
28.  $y = \log_{0,5} x$  funksiyaga teskari funksiyani toping.

A)  $x = \log_{0,5} y$  B)  $x = \log_2 y$  C)  $y = (0,5)^x$   
D)  $x = (0,5)^y$

29.  $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \dots \cdot \sin 45^\circ}{\cos 46^\circ \cdot \cos 47^\circ \cdot \dots \cdot \cos 89^\circ}$  ni hisoblang.

A)  $\frac{1}{2}$  B)  $\frac{\sqrt{3}}{2}$  C)  $\frac{\sqrt{2}}{2}$  D) 1

30. Quyidagi chizmaga asoslanib  $\frac{f(8)}{g(8)}$  ning qiymatini toping.



A) -4 B) 3 C) 4 D) 2

31. "Mantiq insonga shunday bir qoida beradiki, bu qoida yordamida xulosa chiqarishda xatolardan saqlanadi". Ushbu fikr kimga tegishli?

A) Abu Nasr Farobiy B) Alisher Navoiy

C) Kamoliddin Behzod D) Abu Ali Ibn Sino

32. Protsessorlardan ma'lumotlarni baytlarda olib, qurilmalarga bitlarda uzatadigan port turini aniqlang.

A) parallel B) ketma-ket C) slot

D) shina

33. MS Word dasturi kompyuterda ishlayotgan bo'lsa, u holda ...

A) MS Word dasturi boshqa kompyuterdan ko'chirib o'tkazilgan

B) MS Office paketi installyatsiya qilingan

C) MS Office paketi deinstallyatsiya qilingan

D) MS Office paketi ko'chirib o'tkazilgan

34. MS Word 2003 dasturida uskunalar panelini sozlash bo'limi qaysi menyuda joylashgan?  
 A) *Файл(Fayl)* B) *Правка(Tahrir)*  
 C) *Вид(Ko'rinish)* D) *Формат(Format)*

35. Nuqtalar o'rniga kerakli iborani tanlang:  
 Foydalanuvchi elektron pochta qutisini Internetga ulangan ... ocha oladi.

- A) *faqat o'z kompyuterida*  
 B) *faqat shu pochta ochilgan kompyuterda*  
 C) *ixtiyoriy kompyuterda*  
 D) *faqat server kompyuterda*

36. Dastur lavhasida X qaysi qiymatni qabul qiladi?  
 VAR i,j,X: integer;  
 BEGIN FOR i:=1 TO 2 DO;  
 FOR j:=2 DOWNTO 1 DO X:=i+j; END.  
 A) 3 B) 7 C) 4 D) 10

### FIZIKA

1. 220 V kuchlanishga mo'ljallangan 180 W quvvatli televizorga qo'yilgan eruvchan saqlagichga 1 A deb yozib qo'yilgan. Bu saqlagich kun bo'yi qancha kuchlanishga (V) bardosh beradi?  
 A) 268,8 B) 230 C) 240 D) 260,8
2. Nyutonning ikkinchi qonunini impuls yordamida ifodalangan formulasini belgilang.  
 A)  $F \cdot t = \Delta p$  B)  $F = \frac{dp}{dt}$  C)  $F = m \frac{v}{t}$   
 D)  $F = ma$
3. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 11-sekundda bosib o'tgan yo'li 10-sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
 A) 21/17 B) 21/19 C) 7/3 D) 121/100

4. Izobarik jarayonda bir atomli gazga berilgan issiqlik miqdorining qancha qismi ichki energiyaning ortishiga va qancha qismi ish bajarishga sarf bo'ladi?

- A)  $\frac{2}{3}; \frac{1}{3}$   
 B)  $\frac{3}{5}; \frac{2}{5}$   
 C)  $\frac{1}{5}; \frac{4}{5}$   
 D)  $\frac{1}{3}; \frac{2}{3}$

5. Ballonda 20 mol gaz bo'lsa, undagi molekulalar sonini toping.

- A)  $12 \cdot 10^{25}$  B)  $1,2 \cdot 10^{25}$  C)  $1,2 \cdot 10^{24}$   
 D)  $12 \cdot 10^{24}$

6. Teleminora soyasining uzunligi 50 m, balandligi 7,5 m bo'lgan sim yog'och sayasining uzunligi esa 1 m bo'lsa, teleminoraning balandligini (m) toping.

- A) 750 B) 667 C) 150 D) 375

7. Aylana bo'ylab tekis harakat qilayotgan moddiy nuqtaning chiziqli tezligi 2 m/s va burchak tezligi 5 rad/s bo'lsa, markazga intilma tezlanishini ( $m/s^2$ ) toping.

- A) 20 B) 15 C) 10 D) 5

8. Gaz razryadi jarayonida qanday zarrachalar ishtirok etadi?

- A) *faqat elektronlar*  
 B) *faqat ionlar*  
 C) *elektronlar, musbat va manfiy ionlar*  
 D) *elektronlar va kovaklar*

9. O'zgaruvchan tok o'tayotgan zanjir qismidagi kuchlanishi vaqt o'tish bilan  $U = U_0 \sin(\omega t + \pi/6)$  qonun bo'yicha o'zgaradi. Vaqtning  $T/12$  qiymatida kuchlanishning oniy qiymati 10 V ga teng. Kuchlanishning amplituda qiymatini (V) toping.

- A) 11 B) 11,1 C) 11,54 D) 12

10. Radioperedatchik 30 m to'lqin uzunlikda ishlaydi. Uning chastotasini (Hz) toping.  
 $c=3 \cdot 10^8$  m/s

- A)  $100 \cdot 10^6$  B)  $10 \cdot 10^6$  C) 10 D) 1000

11.  $27^{\circ}\text{C}$  da bir atomli 10 mol gazning ichki energiyasi qanday (kJ)?  
A) 37,4 B) 29,4 C) 30,4 D) 38,4
12. Elektr dvigatelga ulangan iste'molchidan 0,5 A tok o'tmoqda, undagi kuchlanish 20 V. Dvigatel 1 soatda qancha ish (kJ) bajaradi? Dvigatelning FIK 80% ga teng.  
A) 28,8 B) 34 C) 32,5 D) 30
13. G'altakning o'lchamlarini uning induktivligi 2 marta ortadigan qilib o'zgartirildi. G'altakdan o'tayotgan tokni 2 marta kamaytirildi. G'altakning magnit maydon energiyasi qanday o'zgaradi?  
A) 2 marta ortadi B) o'zgarmaydi  
C) 4 marta ortadi D) 2 marta kamayadi
14. Tok manbaining EYuK 2 V ga, ichki qarshiligi  $1\ \Omega$  ga teng. Tashqi zanjir 0,75 W quvvat iste'mol qilsa, manbaining tok kuchini (A) aniqlang.  
A) 0,5 yoki 1,5 B) 1,5 C) 1 D) 0,5
15. Atom holatidagi kislorod zarrachalarining  $138^{\circ}\text{C}$  dagi o'rtacha kvadratik tezliklarini (m/s) aniqlang.  $M_{atom}=16\ \text{g/mol}$ ,  $R=8,3\ \frac{\text{J}}{\text{K}\cdot\text{mol}}$   
A) 800 B) 840 C) 650 D) 540
16. To'lqin uzunligi 6,6 nm bo'lganida fotoeffektni to'xtatuvchi potensial 100 V ga teng bo'lsa, u holda elektronning shu moddadan chiqish ishini (J) aniqlang.  $h=6,62\cdot 10^{-34}\ \text{J}\cdot\text{s}$ ,  $c=3\cdot 10^8\ \text{m/s}$ ,  $m_e = 9,1\cdot 10^{-31}\ \text{kg}$   
A)  $1,4\cdot 10^{-15}$  B)  $14\cdot 10^{-17}$  C)  $1,4\cdot 10^{-17}$   
D)  $1,4\cdot 10^{-16}$
17. Matematik mayatnik 3 s da 2 marta tebranmoqda. Mayatnik ipining uzunligini (sm) toping.  $g=10\ \text{m/s}^2$ ,  $\pi=3,14$   
A) 6 B) 57 C) 55 D) 50
18. Yopiq idishda suv va uning to'yingan bug'i bor. Harorat pasayganda to'yingan bug'ning zichligi qanday o'zgaradi?  
A) boshlang'ich haroratga bog'liq B) ortadi  
C) o'zgarmaydi D) kamayadi
19. Yuqoriga tik otilgan 1 kg massali jismning 10 m balandlikdagi kinetik energiyasi 100 J bo'lsa, u qanday boshlang'ich tezlik bilan (m/s) otiladi?  
A) 50 B) 20 C) 30 D) 25
20. Elektr sig'implari  $C_1 = C_2 = C_3=10\ \mu\text{F}$  dan bo'lgan kondensatorlardan ikkitasi o'zaro paralell, uchinchi esa ularga ketma-ket ulangan kondensatorlar bateriyasi o'zgarmas kuchlanish manbaidan zaryadlangan. Birinchi kondensator olgan elektr zaryadi 5 nC ga teng bo'lsa, uchinchi kondensatorning elektr zaryadini (nC) toping.  
A) 7,5 B) 10 C) 15 D) 5
21. Radiusi  $R$  bo'lgan shar yerda tinch turibdi. O'lchami sharning o'lchamidan ancha kichik jism sharning yuqorigi nuqtasidan tinch holatdan boshlab sirpanmoqda. Yer sirtidan qanday  $h$  balandlikda jism shardan ajraladi?  
A)  $h = 5R/3$  B)  $h = R/3$  C)  $h = 2R/3$   
D)  $h = 2,5R$
22. Temir o'zakka bir necha qavat qilib izolatsiyalangan o'tkazgich (sim) o'rab hosil qilingan g'altak nima deb ataladi?  
A) elektromagnit B) rele C) elektrodvigatel  
D) generator
23. Bikrligi 250 N/m bo'lgan prujinaga bog'lab qo'yilganda 16 s ichida 20 marta tebradigan yukning massasini (kg) toping.  $\pi^2=10$   
A) 4 B) 0,4 C) 16 D) 1,6
24. Izolatsiyalangan sistema energiyasi  $\Delta W$  ning o'zgarishi sistema bajargan  $A$  ishga teng. Quyidagi tasdiqqa mos formulasi ko'rsating.  
A)  $\Delta W - A = Q$  B)  $\Delta W = -A$   
C)  $\Delta W = Q$  D)  $\Delta W = A$
25. Oyning Yer atrofidagi orbita bo'ylab aylanishidagi tezlanishi nimaga teng (m/s<sup>2</sup>)? Yer va Oy markazlari orasidagi masofa 60 Yer radiusiga teng.  $G_{Yer}=10\ \text{m/s}^2$  deb hisoblang.  
A) 1/360 B) 1/36 C) 1/3600 D) 1/720
26. Massasi 4 kg bo'lgan jism havoda 8,3 m/s<sup>2</sup> tezlanish bilan tushmoqda. Havoning qarshilik kuchini (N) toping.  $g=9,8\ \text{m/s}^2$   
A) 33,2 B) 40 C) 6 D) 60
27. Massasi 10 kg va uzunligi 40 sm bo'lgan tayoqning uchlariga massalari 40 va 10 kg bo'lgan yuklar osilgan. Tayoq muvozanatda turishi uchun uning birinchi uchidan qanday masofada (sm) tayanch qo'yish lozim?  
A) 11 B) 12 C) 10 D) 9



28. Hajmi bir litr bo'lgan kub shaklidagi idish suv bilan to'ldirilgan. Suvning idish tubiga va to'rt devoriga bo'lgan umumiy bosim kuchini (N) aniqlang.  
A) 30 B) 28,3 C) 29,4 D) 24,4
29. 18 V kuchlanish tarmog'iga qarshiligi 40  $\Omega$  va 50  $\Omega$  ga teng bo'lgan rezistorlar ketma-ket ulandi. Ikkinchi rezistorning uchlaridagi potentsiallar farqini (V) toping.  
A) 8 B) 9 C) 12 D) 10
30. Quyoshdan Yergacha bo'lgan masofa  $150 \cdot 10^6$  km bo'lsa, Quyoshdan chiqqan yorug'lik Yerga qancha vaqtda (min) yetib keladi? Yorug'lik tezligi  $3 \cdot 10^8$  m/s ga teng.  
A) 6 B) 8,5 C) 8 D) 8,33
31.  $m$  massali zarraning kinetik energiyasi  $W$  bo'lsa, tezligi qanday?  
A)  $v = c\sqrt{1 + \left(\frac{mc^2}{mc^2+W}\right)^2}$   
B)  $v = \sqrt{2W/m}$   
C)  $v = c^2p/W$   
D)  $v = c\sqrt{1 - \left(\frac{mc^2}{mc^2+W}\right)^2}$
32. Neytronni kim va qachon topgan?  
A) E.Fermi, 1942 y.  
B) I.V.Kurchatov, 1946 y.  
C) O.Gan va F.Shtrassman, 1938 y.  
D) D.Chedvik, 1932 y.
33. Qanday sharoitda sochuvchi linzaning optik kuchi musbat bo'la oladi?  $n_1$  - atrof muhitning optik zichligi,  $n_2$  - linza yasalgan moddaning optik zichligi.  
A)  $n_1 > n_2$   
B) sochuvchi linzaning optik zichligi musbat bo'la olmaydi  
C)  $n_1 < n_2$   
D)  $n_1 = n_2$
34. Shaxta tubida barometr 82 sm.sim.ust. ni, yer sirtida 78 sm.sim.ust. ni ko'rsatayotgan bo'lsa, shaxtaning chuqurligini (m) aniqlang.  
A) 48 B) 40 C) 4,8 D) 480
35. 100 V va 50 V kuchlanishgacha zaryadlangan  $2 \mu\text{F}$  va  $0,5 \mu\text{F}$  sig'imli kondensatorlarni bir xil ishorali qoplamalari bilan o'zaro ulanganda issiqlikka aylangan elektr energiyasi miqdorini (J) aniqlang.  
A)  $0,5 \cdot 10^{-4}$  B)  $2,5 \cdot 10^{-4}$  C)  $25 \cdot 10^{-4}$   
D)  $5 \cdot 10^{-4}$
36. Ideal gazning harorati 4 marta orttirilib, hajmi 2 marta kamaytirilsa, bosim qanday o'zgaradi?  
A) 8 marta ortadi B) 4 marta ortadi  
C) 2 marta kamayadi D) 2 marta ortadi

### INGLIZ TILI

- Choose the answer which correctly complete the sentence.  
Our car stopped on the halfway to the city. We couldn't go ... because we had no petrol left.  
A) farther B) farthest C) far D) further
- Choose the answer which correctly complete the sentence.  
If you can't start the car, why don't you try ... it with all your force?  
A) pushes B) pushed C) push  
D) pushing
- Choose the answer which correctly complete the sentence.  
Everyone in the village participated ... searching the lost child.  
A) to B) for C) with D) in
- Choose the answer which correctly completes the sentence.  
If we lived in the country, we ... a lot of animals.  
A) had got B) will have C) would have  
D) had
- Choose the answer which correctly completes the sentence.  
He hardly recognised Amanda! She ... blonde.  
A) has had her hair dyed B) dyed your hair  
C) had to dye her hair  
D) had her hair to dye

6. Choose the answer which correctly completes the sentence.  
I advise you to buy a Volkswagen . . . .  
Volkswagen cars are cheap, they last a long time.  
A) *even though* B) *because* C) *as*  
D) *despite*
7. Choose the answer which correctly completes the sentence.  
I always stay at this hotel because it is the only one with facilities for . . . disabled.  
A) *the* B) *a* C) *-* D) *an*
8. Choose the answer which correctly completes the sentence.  
I am afraid there are . . . vacancies in the company at present.  
A) *neither* B) *no* C) *none* D) *not*
9. Choose the answer which correctly completes the sentence.  
She wouldn't have got wet if she . . . her umbrella.  
A) *would take* B) *had taken* C) *takes*  
D) *took*
10. Choose the answer which correctly complete the sentence.  
"Will you please hold this bag for me?" - Laura said to Helen.  
Laura asked Helen . . .  
A) *to hold the bag for her.*  
B) *that she will hold her bag for her.*  
C) *that would she hold her bag for her.*  
D) *if she would please to hold that bag.*
11. Choose the answer which correctly completes the sentence.  
Did you tell him the news? He hadn't heard the news, . . . ?  
A) *hadn't he* B) *he had* C) *had he*  
D) *had he heard*
12. Choose the answer which correctly completes the sentence.  
Can you help me look . . . my glasses. I can't find them.  
A) *after* B) *at* C) *for* D) *up*
13. Choose the answer which correctly completes the sentence.  
She went to the bank . . . to get some money.  
A) *in case* B) *even though* C) *unless*  
D) *in order*
14. Choose the answer which correctly completes the sentence.  
Before Brian started his job last month, he had been told by the manager that he . . . dress very smartly.  
A) *must* B) *could* C) *ought* D) *had to*
15. Choose the answer which correctly completes the sentence.  
The twins were difficult to tell apart, particularly when they wore very . . . clothing.  
A) *similar* B) *the same* C) *alike*  
D) *different*
16. Choose the answer which correctly completes the sentence.  
At the party I really enjoyed . . . your friends.  
A) *to meet* B) *meeting* C) *meet* D) *met*
17. Choose the answer which correctly complete the sentence.  
Vasco de Gama, accompanied by a large crew and a fleet of twenty ships, . . . trying to establish Portuguese domination in Africa in the 16-th century.  
A) *were* B) *has been* C) *have been*  
D) *was*
18. Choose the answer which correctly complete the sentence.  
We went out for a delicious meal in . . . Chinese restaurant last week.  
A) *a* B) *-* C) *the* D) *an*
19. Choose the answer which correctly complete the sentence.  
She was not interested in the book because she . . . it.  
A) *hadn't been understanding*  
B) *wasn't understanding*  
C) *hadn't understood* D) *didn't understand*

20. Choose the answer which correctly complete the sentence.  
There was a long line in front of the theatre.  
We ... wait almost an hour to buy our tickets.  
A) need B) had to C) must D) were able
21. Choose the answer which correctly completes the sentence.  
I'm finally used ... on an electric stove after having a gas one for a long time.  
A) cooked B) cooking C) to cooking  
D) to cook
22. Choose the answer which correctly complete the sentence.  
He deserved to be given an ... for bravery.  
A) award B) direction C) mark D) ticket
23. Choose the answer which correctly completes the sentence.  
Just before the university term ... I am going to have a ten-day holiday in Spain.  
A) will start B) start C) started  
D) starts
- Read the text. Then choose the correct answer to question 24-26.
- One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.
24. The passage tells us that the shrew ...  
A) lives in dense forests.  
B) is in the habit of eating every two hours.  
C) is similar to a mouse in appearance  
D) has a very short life span.

25. The passage states that shrews ...  
A) are the smallest living mammals.  
B) eat each other when they can't find any food.  
C) are found in huge numbers in Australia.  
D) eat rarely but in large amounts at a time.
26. From what is stated in the passage, we can infer that a shrewish woman is someone who ...  
A) is noticeably smaller than the average.  
B) has tiny eyes and ears.  
C) is very fond of velvet and fur.  
D) easily gets annoyed.
- Read the text. Then choose the correct answer for the gaps 27-28 in the text.
- Many famous people did not enjoy (27)... success in their early lives. Walt Disney, who was the creator of Mickey Mouse and the founder of his own movie production company, once was fired by a newspaper editor because he had (28)... good ideas.
27.  
A) immediately B) immediate  
C) immediacy D) imitate
28.  
A) any B) no C) nothing D) none
- Read the text. Then choose the correct answer for the gaps 29-31 in the text.
- Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.
29.  
A) familiarly B) familiarity C) familiarize  
D) familiar
30.  
A) will be B) have been C) is D) are

31.

- A) *towards*   B) *into*   C) *with*   D) *of*

Read the text. Then choose the correct answer to question 32-33.

Lieutenant Zachary Mayo, a 20-year old sailor in the US navy woke up and couldn't get back to sleep because of hot and stuffy air. He got off his bunk quietly so as not to wake up his shipmates. He put his blue overalls on and left the cabin and went onto the deck of a huge aircraft carrier. It was two o'clock on a Friday morning. He breathed in fresh air and looked up at the stars in the sky. And then without thinking he leaned out too far and lost his footing. Before he knew it, he was in the water, watching the huge ship disappearing into the night. Nobody had seen him fall, and for nearly 2 days not one of the crew realized he was missing.

Mayo survived because at training camp two years before he had been taught how to make clothes into life jackets, so he took off his overalls and tied the arms and legs. Then he waved his "life jacket" over his head and filled it with air so that he could stay afloat.

32. Zachary Mayo left his cabin because ...

- A) *he wanted to admire the stars in the sky*  
 B) *somebody woke him up*  
 C) *he suffered from insomnia*  
 D) *he wanted to get some fresh air*

33. How did Z. Mayo appear in the water?

- A) *he wanted to have a swim*  
 B) *lost his balance when he leaned out*  
 C) *to test his overalls if he could stay afloat*  
 D) *his shipmates pushed him into the water*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Mars is larger than Earth*  
 B) *Martian soil is rocky*  
 C) *It takes longer for Mars to circle the Sun than it takes Earth*  
 D) *Mars has two moons*

35. Man-made canals were supposedly discovered by ...

- A) *Martian*   B) *Schiaparelli*   C) *Viking I*  
 D) *Phobos*

36. Mars has been nicknamed as . . .

- A) *The Red Planet*    B) *Martian*    C) *Viking I*  
D) *Deimos*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

## REPITISION TEST TOPSHIRUVCHILAR UCHUN

# SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000044**

Toshkent – 2014

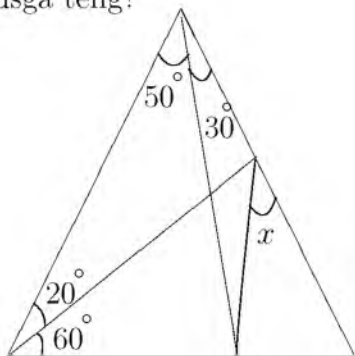
**MATEMATIKA (INFORMATIKA BILAN)**

1.  $2^{x^2+1} = 1 - x^8$  tenglamani yeching.  
A) 1 B) -1 C) 2  
D) tenglama ildizga ega emas
2.  $\sqrt{x^2 - x - 12} + \sqrt{5x - x^2 - 4} + \operatorname{tg} \frac{\pi}{2x - 4} = 1$   
tenglamani yeching.  
A) 4 B) 1; 3 C) 3 D) 1
3. To'g'ri burchakli trapetsiyaning diagonali uning yon tomoniga teng. Agar bu trapetsiyaning balandligi 2 ga, yon tomoni esa 4 ga teng bo'lsa, uning o'rta chizig'i uzunligini toping.  
A)  $6\sqrt{2}$  B)  $3\sqrt{3}$  C)  $5\sqrt{3}$  D)  $3\sqrt{2}$
4. Asosining tomonlari 12; 9 va 15 hamda asosidagi barcha ikki yoqli burchaklari  $60^\circ$  dan iborat bo'lgan uchburchakli piramidaning hajmini toping.  
A)  $54\sqrt{3}$  B)  $108\sqrt{3}$  C)  $162\sqrt{3}$  D)  $27\sqrt{3}$
5.  $x, y$  butun sonlar uchun  $-12 \leq x < 13$ ,  $-9 < y \leq 6$  va  $x + y \neq 0$  bo'lsa,  $\frac{x - y}{x + y}$  ning eng katta qiymatini toping.  
A) 17 B) 18 C) 20 D) 14
6.  $x^2 + \frac{16}{x^2} + (x - \frac{4}{x}) - 28 = 0$  tenglamaning ildizlari yig'indisini toping.  
A) 1 B) 0 C) 4 D) -1
7.  $\frac{0,725 + 0,6 + \frac{7}{40} + \frac{11}{20}}{0,128 \cdot 6\frac{1}{4} - 0,0345 : \frac{3}{25}} \cdot 0,25$  ni hisoblang.  
A) 1 B) 2 C) 4 D) 1/2
8. Geometrik progressiyada  $b_9 \cdot b_{19} = 9$  ga teng,  $b_1 \cdot b_{27} + 1$  ni toping.  
A) 4 B) 5 C) 10 D) 2
9.  $\sin x = [x]$  tenglamani yeching. (Bu yerda  $[x]$ —butun qism.)  
A) 0 va  $\frac{\pi}{2}$   
B)  $\emptyset$   
C) 0,  $\frac{\pi}{2}$ ,  $\pi$   
D)  $x = \pi k$ ;  $x = \frac{\pi}{2} + \pi k$ ;  $k \in Z$
10. Hosila uchun qaysi munosabatlar o'rinli?  
1)  $(\ln \sin x)' = \operatorname{ctg} x$ ;  
2)  $\left(\cos \frac{1}{x}\right)' = -\frac{1}{x^2} \sin \frac{1}{x}$ ;  
3)  $(\log_4 5x)' = \frac{1}{5x \ln 4}$ ;  
4)  $(2^{\sqrt{x}})' = \frac{2^{\sqrt{x}} \ln 2}{2\sqrt{x}}$   
A) 1, 4 B) 3, 4 C) 1, 2 D) 1, 3
11.  $3ax - 6x^2 - 8 + x^3$  ko'phad to'la kub bo'ladigan barcha  $a$  larni toping.  
A) -2 B) -4 C) 4 D) 2
12. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $2\sqrt{3}$  sm bo'lsa, shu aylanaga ichki chizilgan kvadratning yuzini ( $\text{sm}^2$ ) hisoblang.  
A) 12 B) 20 C) 16 D) 18
13. Agar to'g'ri to'rtburchak kichik tomoni  $a = 10\sqrt{2}$  bo'lsa, uning ixtiyoriy burchagidan katta tomonga o'tgan bissektrisasi uzunligi qancha?  
A) 20 B) 10 C) 30 D) 15
14.  $\sqrt[4]{\sqrt[3]{25}} \cdot \sqrt[6]{5^5}$  ni hisoblang.  
A)  $5\sqrt[12]{5}$  B)  $5\sqrt[6]{5}$  C) 5 D)  $\sqrt[3]{5}$
15. O'zaro tashqi urinuvchi 3 ta aylana radiuslari 1, 2 va 3 ga teng. Bu aylanalarning urinish nuqtalari orqali o'tuvchi aylananing radiusini toping.  
A) 1/2 B) 1,2 C) 1/3 D) 1
16. Radiusi  $r$  bo'lgan aylananing vatari aylana markazidan  $\frac{r\sqrt{3}}{2}$  uzoqlikda bo'lsa, bu vatar tortib turgan yoy uzunligini toping.  
A)  $\frac{\pi r}{3}$  B)  $\frac{\pi r}{4}$  C)  $\frac{\pi r}{6}$  D)  $\frac{\pi r}{2}$
17. Uzunligi 17 ga teng bo'lgan kesmaning uchlari tekislikdan 4 va 12 ga teng uzoqlikda yotishi ma'lum bo'lsa, kesmaning tekislikdagi proyeksiyasi uzunligini toping.  
A) 16 B) 12 C) 10 D) 15

18.  $f(x) = \frac{1}{\sin^2 x} + x^2$ ,  $F(x) = ?$

- A)  $\operatorname{ctgx} + \frac{2x^2}{3} + c$     B)  $\operatorname{ctgx} + 2x + c$   
 C)  $-\operatorname{ctgx} + \frac{x^3}{3} + c$     D)  $\operatorname{ctgx} + 2x^2 + c$

19. Quyidagi rasmda berilganlarga ko'ra  $x$  necha gradusga teng?



- A) 40    B) 50    C) 30    D) 45

20. Cheksiz kamayuvchi ishorasi almashinuvchi geometrik progressiyada ketma-ket kelgan uchta hadning yig'indisi  $-21$  ga, ko'paytmasi  $729$  ga teng bo'lsa, shu sonlarni toping.

- A)  $-3; 9; -27$     B)  $27; -9; 3$     C)  $-27; 9; -3$   
 D)  $-28; 14; -7$

21. Uchlari  $A(1; 1)$ ,  $B(-2; 3)$  va  $C(-1; -2)$  nuqtalarda bo'lgan uchburchakning  $A$  va  $B$  burchaklarini toping.

- A)  $45^\circ; 90^\circ$     B)  $60^\circ; 30^\circ$     C)  $30^\circ; 90^\circ$   
 D)  $90^\circ; 45^\circ$

22. Kesik konusning yon sirti  $10\pi$  ga, to'la sirti  $18\pi$  ga teng. Konusning to'la sirti unga ichki chizilgan shar sirtidan qanchaga ortiq?

- A)  $16\pi$     B)  $15\pi$     C)  $14\pi$     D)  $10\pi$

23. Agar arifmetik progressiyada  $S_{13} = 52$  bo'lsa,  $a_7$  ni toping.

- A) 3    B) 4    C) 5    D) 8

24. To'g'ri to'rtburchakning diagonali  $17$  sm, tomonlaridan biri esa  $8$  sm. To'g'ri to'rtburchakning yuzini ( $\text{sm}^2$ ) toping.

- A) 80    B) 140    C) 120    D) 160

25. Dastlabki  $n$  ta hadining yig'indisi  $S_n = 2n^2 + 3n$  rekurent formula bilan berilgan ketma-ketlikning o'ninchi hadini toping.

- A) 27    B) 42    C) 41    D) 39

26.  $y = \sqrt{\sin^3 2x}$  ning hosilasini hisoblang.

- A)  $\frac{3}{2}\sqrt{\sin 2x}$     B)  $3\cos 2x\sqrt{\sin 2x}$   
 C)  $3\sqrt{\sin 2x}$     D)  $-3\cos 2x\sqrt{\sin 2x}$

27. Muntazam o'nikkiburchakning bitta ichki burchagini hisoblang.

- A)  $140^\circ$     B)  $145^\circ$     C)  $150^\circ$     D)  $135^\circ$

28.  $\log_2(x-1) - \log_2(x+1) + \log_{\frac{x+1}{x-1}} 2 > 0$  tengsizlikni yeching.

- A)  $x < 3$     B)  $x > 4$     C)  $x > 3$     D)  $x > 6$

29.  $31 \cdot 52 - 93 \cdot 4 + 57 \cdot 25 - 19 \cdot 35 + 2 \cdot (-10)^3$

- A) 1000    B) 0    C) 4000    D) -1000

30.  $\frac{(x^2 + x + 1)x^2}{x^2 - 5x + 6} < 0$  tengsizlikni yeching.

- A)  $(-\infty; 2] \cup [3; \infty)$   
 B)  $[2; 3]$   
 C)  $(2; 3)$   
 D)  $(-\infty; 2]$

31. Agar kitobdagi axborot hajmi  $7$  Kbayt bo'lsa, uni nechta "Axborot" so'zi bilan almashtirish mumkin?

- A) 1024    B) 2048    C) 2000    D) 14336

32. Protsessorlardan ma'lumotlarni baytlarda olib, qurilmalarga bitlarda uzatadigan port turini aniqlang.

- A) *parallel*    B) *ketma-ket*    C) *slot*  
 D) *shina*

33. Tasvirli fayllarning kengaytmasi keltirilgan qatorni aniqlang.

- A) *.bmp*, *.gif*    B) *.com*, *.exe*    C) *.bas*, *.pas*  
 D) *.xls*, *.doc*

34. MS Word 2003 dasturida uskunalar panelini sozlash bo'limi qaysi menyuda joylashgan?

- A) *Файл(Fayl)*    B) *Правка(Tahrir)*  
 C) *Вид(Ko'rinish)*    D) *Формат(Format)*

35. Tashkil etish texnologiyasiga ko'ra web-sahifalar necha va qanday turga bo'linadi?

- A) 2 turga: *statik*, *dinamik*  
 B) 3 turga: *statik*, *dinamik*, *interaktiv*  
 C) 4 turga: *statik*, *dinamik*, *interaktiv*, *input type*  
 D) 2 turga: *input type* va *interaktiv*



36. Random ( $x$ ) funksiyasining vazifasini aniqlang.
- A) *Parametrli takrorlash funksiyasi*  
 B)  $[0, x]$  oraliqdagi tasodifiy sonni aniqlash funksiyasi  
 C)  $[0, 1]$  oraliqdagi tasodifiy sonni aniqlash funksiyasi  
 D) *Tasodifiy harflar generatori*

### FIZIKA

1. Yorug'lik suvda qanday tezlik (m/s) bilan tarqaladi?  $n_{suv}=1,33$   
 A)  $2,25 \cdot 10^8$  B)  $2,20 \cdot 10^8$  C)  $00000$   
 D)  $3 \cdot 10^8$
2. O'lchamlari  $60 \times 20 \times 5$  sm<sup>3</sup> bo'lgan po'lat plitani qizdirish uchun 1680 kJ issiqlik sarflangan bo'lsa, plitaning hajmi (sm<sup>3</sup>) qanchaga o'zgaragan? Po'latning zichligi 7800 kg/sm<sup>3</sup>, solishtirma issiqlik sig'imi 460 J/(kg·K), chiziqli kengayishning termik koeffitsiyenti  $1,2 \cdot 10^{-5} \text{ K}^{-1}$ .  
 A) 20 B) 13,5 C) 10,6 D) 16,9
3. Elektr lampochka yonganda undagi gazning temperaturasi 15 dan 300°C gacha ortsa, lampochka ballonidagi gazning bosimi necha marta ortadi?  
 A)  $\approx 3$  marta B)  $\approx 1,5$  marta C)  $\approx 2$  marta  
 D)  $\approx 4$  marta
4. Tebranish konturida kondensator plastinkalaridagi  $q$  zaryad  $t$  vaqt o'tishi bilan  $q = 10^{-6} \cos 10^4 \pi t$  qonun bo'yicha o'zgaradi. Zaryadning amplituda (C) qiymatini ko'rsating.  
 A)  $10^{-9}$  B)  $10^{-6}$  C)  $\pi \cdot 10^{-6}$  D)  $10^{-4}$
5. 4 g vodoroddagi modda miqdorini (mol) toping.  
 A) 2 B) 1 C) 3 D) 4
6. Muz parchasi suv sirtidan 2 sm chiqqan holda suzib yuribdi. Muz parchasi asosining yuzi 200 sm<sup>2</sup> bo'lsa, uning og'irligi (N) qancha? Muzning zichligi 0,9 g/sm<sup>3</sup>.  
 A) 45 B) 90 C) 3,6 D) 35
7. Shaxta tubida barometr 82 sm.sim.ust. ni, yer sirtida 78 sm.sim.ust. ni ko'rsatayotgan bo'lsa, shaxtaning chuqurligini (m) aniqlang.  
 A) 4,8 B) 480 C) 48 D) 40

8. Massasi 50 kg bo'lgan bola Oy sirtida turibdi deylik. U Oyga qanday kuch (N) bilan tortiladi?  $g=1,6 \text{ m/s}^2$   
 A) 500 B) 16 C) 80 D) 50
9. Balandligi 210 m bo'lgan sharsharadan tushayotgan suvning pastdagi temperaturasi sharshara boshidagi temperaturasidan qancha (°C) ortiq? Suvning solishtirma issiqlik sig'imi 4200 J/(kg·K). Mexanik energiya suvning isishi uchun sarf bo'ladi.  
 A) 2 B) 1,2 C) 0,5 D) 1
10. 2,5 Tl induksiyali bir jinsli magnit maydon o'tkazgichdagi tok kuchi 0,5 A bo'lganda induksiya vektoriga 30° burchak ostida joylashgan 50 sm uzunlikdagi o'tkazgichga qanday kuch (N) bilan ta'sir qiladi?  
 A) 0,33 B) 0,35 C) 0,3 D) 0,31
11. Havoning nisbiy namligini o'lchaydigan asbob nima?  
 A) *ariometr* B) *psixrometr* C) *barometr*  
 D) *gigrometr*
12.  $v$  tezlik bilan borayotgan odam ko'cha chiroqlari tagidan o'tib bormoqda, chiroqlar yerdan  $H$  balandlikka osilgan. Odamning balandligi  $h$  ga teng bo'lsa, uning yerdagi soyasining uchki qismi qanday tezlikda harakatlanadi?  
 A)  $\frac{H+h}{H}v$  B)  $\frac{H-h}{H}v$  C)  $v$  D)  $\frac{H}{H-h}v$
13. Bir jinsli magnit maydon induksiyasi 2 marta ortsa, bu maydonga joylashgan o'tkazgichdagi tok kuchi qanday o'zgaradi?  
 A) *o'zgarmaydi* B) *4 marta ortadi*  
 C) *2 marta kamayadi* D) *2 marta ortadi*
14. Elektr choynagi 220 V kuchlanishga ulangan holda 3,2 A tok iste'mol qilib 1 l suvni 12 minutda qaynatdi. Suvning boshlang'ich harorati 20°C bo'lsa, FIKni (%) toping.  

$$c_{suv} = 4200 \frac{\text{J}}{\text{kg} \cdot ^\circ \text{C}}$$
 A) 66 B) 84 C) 98 D) 71

15. Dengizdagi to'liqin do'ngliklari orasidagi masofa 5 m. Katerning to'liqinga qarshi harakatiga 1 s da kater korpusiga 4 marta to'liqin urildi. To'liqin bilan bitta yo'nalishda harakatlanganda 2 marta urildi. Agar kater tezligi to'liqin tezligidan katta bo'lsa kater (m/s) va to'liqin (m/s) tezligini toping.  
A) 10; 5 B) 20; 10 C) 25; 5 D) 15; 5
16. Ideal gazning harorati  $87^{\circ}\text{C}$  va konsentratsiyasi  $1 \cdot 10^{12} \text{ m}^{-3}$  bo'lsa, shu gazning bosimini (nPa) va molekulari ilgariharakatining o'rtacha kinetik energiyasini (J) toping.  
A) 5;  $7,45 \cdot 10^{-21}$  B) 3;  $7,4 \cdot 10^{-20}$   
C) 2;  $6 \cdot 10^{-21}$  D) 6;  $7,4 \cdot 10^{-21}$
17. Tinch turgan liftdagi matematik mayatnik tebranish davri 5 s ga teng. Tezlanish bilan harakatlanayotgan liftdagi mayatnik tebranish davri 10 s ga teng bo'lsa, liftning tezlanishini ( $\text{m/s}^2$ ) aniqlang.  
A) 5 B) 4 C) 7,5 D) 2,5
18. Yorug'lik to'liqini uzunligi qanday elektromagnit to'liqlardan (m) iborat?  
A)  $5 \cdot 10^{-8}$ - $7 \cdot 10^{-8}$   
B)  $6 \cdot 10^{-6}$ - $9 \cdot 10^{-6}$   
C)  $3 \cdot 10^{-5}$ - $8 \cdot 10^{-5}$   
D)  $4 \cdot 10^{-7}$ - $7,6 \cdot 10^{-7}$
19. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 11-sekundda bosib o'tgan yo'li 10-sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
A) 21/17 B) 21/19 C) 121/100 D) 7/3
20. Tebranish konturidagi tok kuchining vaqt bo'yicha o'zgarish tenglamasi quyidagi ko'rinishda berilgan  $I = 0,02 \sin 400\pi t$  (A). Konturning induktivligi 1 H ga teng. Kondensator qoplamalaridagi maksimal potentsiallar farqini (V), magnit va elektr maydonlarning maksimal energiyasini (J) toping.  
A) 25,1;  $2 \cdot 10^{-4}$  B) 24;  $3 \cdot 10^{-4}$  C) 26;  $9 \cdot 10^{-4}$   
D) 23;  $7 \cdot 10^{-4}$
21. Massasi 700 g bo'lgan jismni vertikal ravishda yuqoriga 15 m/s tezlik bilan otildi. U yerga 13 m/s tezlik bilan qaytib tushdi. Havoning qarshiligini yengish uchun bajarilgan ishni (J) hisoblang.  
A) 19,4 B) 19,2 C) 18,6 D) 19,6
22. Bir xil 5 nC dan elektr zaryadiga ega bo'lgan, radiuslari 2 sm va 6 sm ga teng bo'lgan metall sharlar bir-biriga tekizilsa va dastlabki holatga qaytarilsa ularning ta'sirlashuv energiyasi qanday o'zgaradi?  
A) 25% ortadi B) 25% kamayadi  
C) o'zgarmaydi D) 32% ortadi
23. Ballondagi gazning yarmi chiqib ketishi natijasida uning temperaturasi  $55^{\circ}\text{C}$  dan  $2^{\circ}\text{C}$  gacha pasaygan bo'lsa, ichki energiya necha marta kamaygan bo'ladi?  
A) 2,2 B) 2,38 C) 2,30 D) 2,36
24. 0,6c tezlik bilan harakatlanayotgan zarraning massasi tinchlikdagi massasiga qaraganda qanchaga ortgan? Zarraning tinchlikdagi massasi  $m_0$ .  
A)  $1,6m_0$  B)  $0,25m_0$  C)  $1,25m_0$  D)  $0,8m_0$
25. Avtomobil yo'lining birinchi yarmini 10 m/s, ikkinchi yarmini esa 15 m/s tezlik bilan o'tdi. Butun yo'l davomida o'rtacha tezlikni (m/s) toping.  
A) 25 B) 12,5 C) 12 D) 5
26. Quduqdan chelakda suv tortilmoqda. Chelak hajmi 10 l. Arqon o'raladigan baraban radiusi 10 sm va dastak tirsagi 50 sm ga teng. Suv chiqarish uchun tirsakka qanday kuch (N) bilan ta'sir etish kerak? Suvning zichligi  $1000 \frac{\text{kg}}{\text{m}^3}$ .  
A) 50 B) 20 C) 10 D) 100
27. Tezligi 10 m/s, massasi 10 kg bo'lgan granata ikki bo'lakka ajraldi. Katta bo'lakning tezligi 25 m/s bo'lib granataning harakat yo'nalishida, kichik bo'lakning tezligi 12,5 m/s bo'lib qarama-qarshi yo'nalishda harakatlansa, bo'laklarning massalarini (kg) toping.  
A) 7 va 3 B) 8 va 2 C) 6 va 4 D) 9 va 1

28. 120 V ga mo'ljallangan 40 Vt li lampochka 220 V li tarmoqqa ulanganda normal yonishi uchun unga ketma-ket qilib necha metr  $3 \cdot 10^{-4}$  m diametrli nixrom simdan ulash kerak bo'ladi? Nixromning solishtirma qarshiligi  $1,1 \cdot 10^{-6}$  Om·m.

A) 15,3 B) 9,3 C) 10,6 D) 19,3

29. Yadro nuklonlarga ajratib yuborildi. Bunda energiya yutiladimi yoki ajraladimi?

A) og'ir yadrolarda yutiladi, yengil yadrolarda ajraladi

B) ajraladi

C) yutilishi ham, ajralishi ham mumkin

D) yutiladi

30. Agar ichki qarshiligi  $1 \Omega$  bo'lgan ampermetrga  $0,2 \Omega$  qarshilik parallel ulansa, uning o'lchash chegarasi necha marta orttirilgan bo'ladi?

A) 4 B) 2 C) 6 D) 8

31. Simni cho'zadigan stanokdan o'tkazib 2 marta uzaytirilsa, uning qarshiligi qanday o'zgaradi?

A) 4 marta ortadi B) 2 marta ortadi

C) 2 marta kamayadi D) o'zgarmaydi

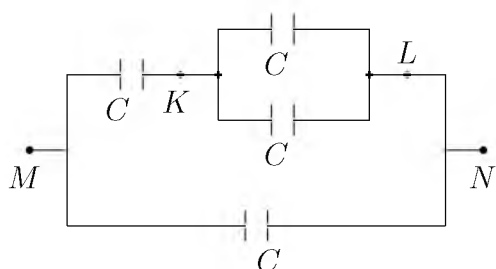
32. Qizil yorug'lik nuri ( $\lambda = 700$  nm) va rentgen nuri ( $\lambda = 10^{-10}$  m) ning energiyalari nisbati  $\frac{E_c}{E_r}$  qanchaga teng?

A)  $7 \cdot 10^{-5}$  B)  $1,4 \cdot 10^{-4}$  C)  $1,4 \cdot 10^{-3}$   
D)  $7 \cdot 10^{-4}$

33. Vakuimli diodning to'yinish toki 32 mA ga teng bo'lganda, katoddan 2 s ichida nechta elektron ajralib chiqadi?

A)  $2 \cdot 10^{17}$  B)  $2 \cdot 10^{16}$  C)  $4 \cdot 10^{16}$  D)  $4 \cdot 10^{17}$

34. Rasmdagi har bir kondensatorning sig'imi C ga teng. M va N nuqtalar orasidagi potentsiallar farqi 120 V bo'lsa, K va L nuqtalar orasidagi potentsiallar farqini (V) toping.



A) 20 B) 40 C) 30 D) 60

35. 72 km/h tezlikda harakatlanayotgan poyezd dvigateli o'chirilsa, qancha masofa (m) yo'l o'tib to'xtaydi? Ishqalanish koeffitsienti  $\mu = 0,02$ .

A) 1440 B) 500 C) 1000 D) 720

36. Massasi 5000 t bo'lgan poyezd 36 km/soat tezlik bilan harakatlanmoqda. Agar tormozlanish kuchi 0,25 MN ga teng bo'lsa, tormozlangandan keyin bir minut ichida poyezd qancha masofani (m) o'tadi?

A) 5100 B) 5000 C) 51 D) 510

## INGLIZ TILI

1. Choose the answer which correctly complete the sentence.

They were tired because they ... hard all morning.

A) studied B) had been studying

C) had studied D) were studying

2. Choose the answer which correctly completes the sentence.

I'm finally used ... on an electric stove after having a gas one for a long time.

A) to cooking B) cooking C) cooked

D) to cook

3. Choose the answer which correctly completes the sentence.

Lizzie's sister got engaged ... a fashion designer last month.

A) with B) for C) at D) to

4. Choose the answer which correctly completes the sentence.

Your friend can borrow my ... camera for the weekend.

A) fathers-in-law B) father's-in-law

C) father-in-law D) father-in-law's

5. Choose the answer which correctly completes the sentence.

Once a busy city, Pompeii was destroyed by the eruption of ... Mount Vesuvius in 79 A.D.

A) a B) - C) an D) the

6. Choose the answer which correctly completes the sentence.

They closed down the factory because it ... money for years.

A) has lost B) was losing C) lost

D) had been losing

7. Choose the answer which correctly completes the sentence.  
Nobody can always do whatever ... please in life.  
A) *he* B) *you* C) *she* D) *they*
8. Choose the answer which correctly completes the sentence.  
George's father gives him enough money to go to school, so he ... work.  
A) *ought not to* B) *doesn't have to*  
C) *has to* D) *didn't have to*
9. Choose the answer which correctly completes the sentence.  
That is not ... Stephen Frazer that I went to school with.  
A) *these* B) *a* C) *the* D) *-*
10. Choose the answer which correctly completes the sentence.  
He never found his key ... he looked in every pocket and every drawer.  
A) *as* B) *because* C) *though* D) *despite*
11. Choose the answer which correctly completes the sentence.  
As a rule, the smaller the town, ... it is to park your car.  
A) *cheaper* B) *the cheaper* C) *cheap*  
D) *the cheapest*
12. Choose the answer which correctly completes the sentence.  
"Did it rain last week?"  
Do you know ... last week.  
A) *if it had rained* B) *whether it rained*  
C) *did it rain* D) *if did it rain*
13. Choose the answer which correctly completes the sentence.  
He hardly recognised Amanda! She ... blonde.  
A) *has had her hair dyed*  
B) *had her hair to dye* C) *dyed your hair*  
D) *had to dye her hair*
14. Choose the answer which correctly completes the sentence.  
I wish I ... everything to you yesterday.  
A) *explained* B) *could explain*  
C) *could have explained* D) *have explained*
15. Choose the answer which correctly completes the sentence.  
Mr. Parris said he would like ... by Monday if that was possible.  
A) *the report will be finished*  
B) *finished the report*  
C) *to have the report finished*  
D) *the report finishing*
16. Choose the answer which correctly completes the sentence.  
Isabel travels by train because she is terrified ... flying.  
A) *from* B) *of* C) *by* D) *for*
17. Choose the answer which correctly complete the sentence.  
Sarah wished she ... late for the meeting.  
A) *weren't* B) *hasn't been* C) *hadn't been*  
D) *isn't*
18. Choose the answer which correctly completes the sentence.  
Until last week I never ... motorbike before.  
A) *was riding* B) *rode* C) *rides*  
D) *had ridden*
19. Choose the answer which correctly completes the sentence.  
I advise you to buy a Volkswagen ...  
Volkswagen cars are cheap, they last a long time.  
A) *despite* B) *as* C) *even though*  
D) *because*
20. Choose the answer which correctly completes the sentence.  
The children shouldn't play outside in cold weather, and ...  
A) *she should either* B) *neither she should*  
C) *she should neither* D) *neither should she*
21. Choose the answer which correctly complete the sentence.  
They have promised to lend me a tennis racket so I ... take mine.  
A) *mustn't* B) *can't* C) *don't have to*  
D) *daren't*

22. Choose the answer which correctly complete the sentence.  
The policeman asked who was the ... person to see the man alive?  
A) *latest* B) *last* C) *later* D) *late*

23. Choose the answer which correctly completes the sentence.  
There was a conference in the Institute.  
A number of teachers ... there.  
A) *are sent* B) *is sent* C) *were sent*  
D) *be sent*

Read the text. Then choose the correct answer to question 24-26.

One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.

24. The passage tells us that the shrew ...  
A) *has a very short life span.*  
B) *is in the habit of eating every two hours.*  
C) *lives in dense forests.*  
D) *is similar to a mouse in appearance*
25. The passage states that shrews ...  
A) *eat each other when they can't find any food.*  
B) *are found in huge numbers in Australia.*  
C) *are the smallest living mammals.*  
D) *eat rarely but in large amounts at a time.*

26. From what is stated in the passage, we can infer that a shrewish woman is someone who ...  
A) *has tiny eyes and ears.*  
B) *is very fond of velvet and fur.*  
C) *is noticeably smaller than the average.*  
D) *easily gets annoyed.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Although they were described as the (27)... designs in many years, there isn't anything very new about the latest line of shoes from Santorelli. As one of the most famous designers in Italy, Salvatore Santorelli is expected to do more than simply repeat the previous year's (28)... formula of "smart, but casual" sandals in a range of pastels.

27.  
A) *new first Italian* B) *first Italian new*  
C) *first new Italian* D) *Italian first new*
28.  
A) *successfully* B) *success* C) *succession*  
D) *successful*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

A forest is a thickly wooded area. Forests have a wide (29)... of plants and animals living among the trees. Forests that like cooler climates (30)... largely in the northern hemisphere, far north of the equator. Forest floors are shady places and it can be hard (31)... plants to grow.

29.  
A) *variety* B) *vary* C) *various*  
D) *variable*
30.  
A) *were found* B) *find* C) *are found*  
D) *found*

31.

- A) *of*   B) *from*   C) *for*   D) *by*

Read the text. Then choose the correct answer to question 32-33.

Lieutenant Zachary Mayo, a 20-year old sailor in the US navy woke up and couldn't get back to sleep because of hot and stuffy air. He got off his bunk quietly so as not to wake up his shipmates. He put his blue overalls on and left the cabin and went onto the deck of a huge aircraft carrier. It was two o'clock on a Friday morning. He breathed in fresh air and looked up at the stars in the sky. And then without thinking he leaned out too far and lost his footing. Before he knew it, he was in the water, watching the huge ship disappearing into the night. Nobody had seen him fall, and for nearly 2 days not one of the crew realized he was missing.

Mayo survived because at training camp two years before he had been taught how to make clothes into life jackets, so he took off his overalls and tied the arms and legs. Then he waved his "life jacket" over his head and filled it with air so that he could stay afloat.

32. Zachary Mayo left his cabin because ...

- A) *somebody woke him up*  
 B) *he suffered from insomnia*  
 C) *he wanted to get some fresh air*  
 D) *he wanted to admire the stars in the sky*

33. How did Z. Mayo appear in the water?

- A) *his shipmates pushed him into the water*  
 B) *he wanted to have a swim*  
 C) *lost his balance when he leaned out*  
 D) *to test his overalls if he could stay afloat*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Mars has two moons*  
 B) *Mars is larger than Earth*  
 C) *It takes longer for Mars to circle the Sun than it takes Earth*  
 D) *Martian soil is rocky*

35. Man-made canals were supposedly discovered by ...

- A) *Martian*   B) *Viking I*   C) *Schiaparelli*  
 D) *Phobos*

36. Mars has been nicknamed as ...

- A) *Deimos*
- B) *Martian*
- C) *The Red Planet*
- D) *Viking I*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000045**

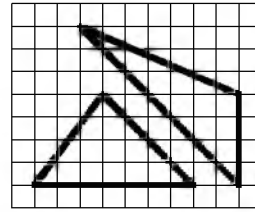
Toshkent – 2014



## MATEMATIKA (INFORMATIKA BILAN)

- Asosi  $a$ , perimetri 42 bo'lgan to'g'ri to'rtburchakning yuzini hisoblash uchun ifoda tuzing.  
A)  $S = a(a - 21)$  B)  $S = a(21 - a)$   
C)  $S = ax$  D)  $S = a^2 - 21$
- $\frac{x^2 - 5x - 6}{x^2 - 4x + 10} \leq 0$  tengsizlikni yeching.  
A)  $\left(\frac{1}{2}; 6\right)$   
B)  $(0; 3)$   
C)  $[0; 5]$   
D)  $[-1; 6]$
- $ABC$  uchburchak berilgan.  $AB$  to'g'ri chiziqqa parallel tekislik bu uchburchakning  $AC$  tomonini  $A_1$  nuqtada,  $BC$  tomonini  $B_1$  nuqtada kesib o'tadi.  $AB=15$  sm,  $AA_1 : AC = 2 : 3$  bo'lsa,  $A_1B_1$  kesma uzunligini (sm) toping.  
A) 5 B) 3 C) 2 D) 4
- $\frac{712^2 - 289}{695}$  ni hisoblang.  
A) 725 B) 765 C) 695 D) 729
- Teng yonli uchburchakning uchidagi tashqi burchagi ichki burchagi bilan 7:5 nisbatda bo'lsa, asosidagi tashqi burchagini toping.  
A)  $127,5^\circ$  B)  $120,5^\circ$  C)  $127^\circ$  D)  $120^\circ$
- $x^3 - x + 3 = 0$  bo'lsa,  $(x^3 - x + 1) \cdot (x^3 + 3)$  ning qiymatini toping.  
A)  $-2x$  B) 0 C)  $2x$  D)  $-4x$
- Dastlabki o'nta hadining yig'indisi 55 ga teng bo'lgan arifmetik progressiyaning o'ninchi hadi 19 ga teng bo'lsa, uning ayirmasini toping.  
A) 3 B) 2 C) -3 D) -2
- Ikki xonali son raqamlari kvadratlarining yig'indisi 13 ga teng. Agar undan 9 ni ayirsak, shu son raqamlarining teskari tartibda yozilgani kelib chiqsa, ikki xonali sonning raqamlari yig'indisini toping.  
A) 5 B) 6 C) 7 D) 8

- Rasmda qanday uchburchaklar tasvirlangan?



- tengdosh
  - yuzalari har xil
  - perimetrlari bir xil
  - uchburchaklardan biri to'g'ri burchakli
- $\log_2(x^2 + 2x + 4) + \log_2(x - 2) < \log_2(x^3 - x^2 + 4x - 3)$  tengsizlikni yeching.  
A) (1; 5) B) (2; 5) C) (-1; 2) D) (-1; 5)
  - $0,725 + 0,6 + \frac{7}{40} + \frac{11}{20} \cdot 0,25$  ni hisoblang.  
 $0,128 \cdot 6\frac{1}{4} - 0,0345 : \frac{3}{25}$   
A)  $1/2$  B) 4 C) 1 D) 2
  - $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \dots \cdot \sin 45^\circ}{\cos 46^\circ \cdot \cos 47^\circ \cdot \dots \cdot \cos 89^\circ}$  ni hisoblang.  
A) 1 B)  $\frac{\sqrt{3}}{2}$  C)  $\frac{1}{2}$  D)  $\frac{\sqrt{2}}{2}$
  - Agar  $x \in [-1; 2]$  bo'lsa,  $y = 5^x$  funksiya qaysi oraliqda yotadi?  
A) [1; 5] B) (0; 25] C) [0, 2; 25] D) (0;  $\infty$ )
  - $\overline{aa}$  va  $\overline{bb}$  ikki xonali sonlar bo'lib,  $(\overline{aa})^2 + (\overline{bb})^2 = 2057$  va  $a + b = 5$  bo'lsa,  $a \cdot b$  ni toping.  
A) 8 B) 15 C) 4 D) 6
  - Teng yonli uchburchakning yon tomoni 10 sm, asosi 12 sm ga teng. Uchburchakka ichki chizilgan aylanaga o'tkazilgan urinmalar uchburchakning asosiga tushirilgan balandligiga parallel va berilgan uchburchakdan ikkita to'g'ri burchakli uchburchak ajratadi. Ushbu uchburchakning tomonlarini (sm) toping.  
A) 3; 3; 5 B) 2; 2; 3 C) 3; 4; 5 D) 2; 3; 4

16.  $a = \left(1 + \frac{1}{2}\right) \left(1 + \frac{1}{3}\right) \left(1 + \frac{1}{4}\right) \dots \left(1 + \frac{1}{2011}\right)$ ,  
 $b = \left(1 - \frac{1}{2}\right) \left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{4}\right) \dots \left(1 - \frac{1}{2012}\right)$   
berilgan,  $a \cdot b$  ko'paytmani toping.  
A) 3 B)  $\frac{1}{2}$  C) 1 D) 2
17. Avtomashina Toshkentdan Samarqandga tomon yo'lga chiqdi. Yo'lning  $\frac{2}{5}$  qismini rejadagi tezlikda o'tgach, tezligini 20% ga oshirdi va Samarqandga mo'ljaldagidan yarim soat oldin keldi. Avtomashina ikki shahar orasidagi masofani necha soatda o'tgan?  
A) 4 B) 4,5 C) 2,5 D) 3
18. Cheksiz kamayuvchi geometrik progressiyaning ikkinchi hadi beshinchi hadidan 8 marta katta. Agar bu geometrik progressiya hadlari yig'indisi 6 ga teng bo'lsa, uning birinchi hadini toping.  
A) 2 B) 6 C) 3 D) 4
19.  $y = \frac{2}{\sqrt[4]{2x+5}}$  funksiyaning boshlang'ich funksiyasini toping.  
A)  $\frac{4}{3}\sqrt[4]{2x+5} + c$   
B)  $-\frac{4}{3}\sqrt[4]{(2x+5)^3} + c$   
C)  $\frac{4}{3}\sqrt[4]{(2x+5)^3} + c$   
D)  $\frac{8}{3}\sqrt[4]{(2x+5)^3} + c$
20. O'suvchi geometrik progressiyada  $a_3 \cdot a_{10} = 16$  bo'lsa,  $a_1 \cdot a_{12}$  ni toping.  
A) 24 B) 8 C) 16 D) 14
21. Uchlari  $A(1; 1)$ ,  $B(-2; 3)$  va  $C(-1; -2)$  nuqtalarda bo'lgan uchburchakning  $A$  va  $B$  burchaklarini toping.  
A)  $90^\circ; 45^\circ$  B)  $30^\circ; 90^\circ$  C)  $60^\circ; 30^\circ$   
D)  $45^\circ; 90^\circ$
22. Oltiburchakli muntazam prizma eng katta diagonal kesimining yuzi  $Q$ , prizmaning qarama-qarshi yon yoqlari orasidagi masofa  $b$  bo'lsa, prizmaning hajmini hisoblang.  
A)  $\frac{4bQ}{3}$  B)  $\frac{3bQ}{2}$  C)  $\frac{bQ}{2}$  D)  $\frac{3bQ}{4}$
23.  $\left(\frac{1}{8} \cdot 4^x\right)^x - \frac{8^x}{16} = 0$  tenglama ildizlarining o'rta arifmetigini toping.  
A) 1,5 B) 2,5 C) 2 D) 3
24.  $x, y, z$  - butun sonlar bo'lib,  $\begin{cases} \frac{xy}{y-x} = -\frac{15}{2} \\ \frac{yz}{z-y} = \frac{21}{4} \\ \frac{xz}{z-x} = \frac{35}{2} \end{cases}$   
bo'lsa,  $x + y - z = ?$   
A) 1 B) 15 C) 9 D) 4
25.  $\sqrt{x-3} - 2\sqrt{x-4} + \sqrt{x-4} - 4\sqrt{x-4} = 1$   
tenglamaning ildizlarini toping.  
A) [5; 8] B) [3; 4] C) [6; 9] D) [6; 8]
26. To'g'ri burchakli trapetsiyaga radiusi 5 ga teng aylana ichki chizilgan. Agar trapetsiyaning katta asosi 17 ga teng bo'lsa, aylana markazidan trapetsiyaning o'tkir burchagigacha bo'lgan masofani toping.  
A) 7 B) 12 C) 9 D) 13
27. Balandligi 12 ga, asosining radiusi 5 ga teng bo'lgan konusga ichki chizilgan oltiburchakli muntazam piramidaning katta diagonal kesimi yuzini hisoblang.  
A) 60 B) 72 C) 38 D) 50
28.  $f(x) = \frac{1}{4}\sin 4x - x$  funksiya uchun  $f'(x) = 0$  bo'lsa,  $x$  ning qiymatini toping.  
A)  $x = \pi + 2\pi n; n \in Z$   
B)  $x = \frac{\pi}{2} + 2\pi n; n \in Z$   
C)  $x = -\frac{\pi}{2} + 2\pi n; n \in Z$   
D)  $x = \frac{\pi n}{2}; n \in Z$
29.  $\frac{8-n}{2+\sqrt[3]{n}} : \left(2 + \frac{\sqrt[3]{n^2}}{2+\sqrt[3]{n}}\right) - \left(\sqrt[3]{n} + \frac{2\sqrt[3]{n}}{\sqrt[3]{n}-2}\right) \cdot \frac{4-\sqrt[3]{n^2}}{\sqrt[3]{n^2}+2\sqrt[3]{n}}$  ifodani soddalashtiring. ( $n \neq \pm 8$ )  
A) 1 B)  $\frac{1}{n}$  C) 0 D) 2
30. Radiusi 5 ga teng bo'lgan doiradagi uzunligi 8 ga teng vatar doira markazidan qancha uzoqlikda bo'ladi?  
A) 4 B) 3,2 C) 3 D) 3,6

31. Agar kitobdagi axborot hajmi 7 Kbayt bo'lsa, uni nechta "Axborot" so'zi bilan almashtirish mumkin?  
A) 1024 B) 2048 C) 2000 D) 14336
32. Tashkil etuvchi barcha sodda mulohazalar rost bo'lganda quyidagilardan qaysi birining natijasi rost bo'ladi?  
A)  $(A \vee \neg B) \wedge \neg (C \vee D)$   
B)  $A \wedge \neg B \vee C \wedge \neg D$   
C)  $A \vee B \wedge \neg C \vee \neg D$   
D)  $\neg A \vee (B \vee C) \wedge \neg D$
33. Kompyuter uchun yangi dasturlar tayyorlash va tahrirlashni yengillashtiruvchi dasturlar qanday nomlanadi?  
A) *Sistema dasturlari* B) *Amaliy dasturlar*  
C) *Uskunaviy dasturlar* D) *Utilitalar*
34. MS Excelning A5:C12 katakchalar blokida nechta katakcha bor?  
A) 22 ta B) 18 ta C) 21 ta D) 24 ta
35. Nuqtalar o'rniga kerakli iborani tanlang: Foydalanuvchi elektron pochta qutisini Internetga ulangan ... ocha oladi.  
A) *faqat o'z kompyuterida*  
B) *faqat shu pochta ochilgan kompyuterda*  
C) *ixtiyoriy kompyuterda*  
D) *faqat server kompyuterda*
36. Paskal dasturi lavhasidagi hisob natijasini aniqlang.  
begin a:=12; b:=14; c:=10; if(a>b) or (b>c) then y:=a+b-c else y:=a-b+c; writeln(y); end.  
A) 8 B) 6 C) 16 D) 14
3. Chaqmoq gaz razryadining qaysi turiga misol bo'ladi?  
A) *toj razryad* B) *uchqun razryad*  
C) *miltillama razryad* D) *elektr yoy razryad*
4. Suyuqlikning idish devoriga bosim kuchi  $F$  idish tubiga bo'lgan bosim kuchiga teng bo'lishi uchun  $R$  radiusli silindrik idishga qanday balandlik  $H$  gacha suv qiyish kerak?  
A)  $R = 2H$  B)  $R = 4H$  C)  $R = H$   
D)  $R = H/2$
5. Rentgen trubkasiga 10 kV kuchlanish qo'yilgan. Nurlanish to'lqin uzunligi 1Å bo'lishi mumkinmi?  
A) *mumkin emas*  
B) *bu nurlanish chastotasiga bog'liq*  
C) *mumkin*  
D) *bu nurlanish intensivligiga bog'liq*
6. O'quvchi 50 kg massali yukni gorizontga nisbatan  $30^\circ$  burchak ostida yo'nalgan  $F$  kuch bilan tortib ketmoqda. Agar harakat tekis va yuk bilan sirt orasidagi ishqalanish koeffitsienti 0,26 ga teng bo'lsa,  $F$  ni (N) toping.  
 $\cos 30^\circ = 0,87$ ,  $\cos 60^\circ = 0,5$   
A) 130 B) 500 C) 433 D) 300
7. Metallarda erkin elektronlarning tezligi  $1,1 \cdot 10^5$  m/s bo'lsa, uning kinetik energiyasi (J) nimaga teng?  
A)  $5,5 \cdot 10^{-20}$  B)  $5,5 \cdot 10^{-21}$  C)  $6 \cdot 10^{20}$   
D)  $5 \cdot 10^{-20}$
8. Karno sikli nechta izojarayondan iborat?  
A) *1 ta adiabatik; 3 ta izotermik*  
B) *1 ta izobarik; 3 ta izoxorik*  
C) *2 ta izoxorik; 2 ta izotermik*  
D) *2 ta izotermik; 2 ta adiabatik*
9. Prujinaga birinchi jism osilganda prujina 2 sm ga cho'zildi, ikkinchi jism osilganda yesa 3 sm ga cho'zildi. Ikkala jism birgalikda osilganda prujina qancha (sm) cho'ziladi?  
A) 2,5 B) 2,0 C) 5,0 D) 1,2
10. Agar ichki qarshiligi  $1 \Omega$  bo'lgan ampermetrga  $0,2 \Omega$  qarshilik parallel ulansa, uning o'lchash chegarasi necha marta orttirilgan bo'ladi?  
A) 2 B) 8 C) 4 D) 6

### FIZIKA

1. Bikrligi 250 N/m bo'lgan prujinaga bog'lab qo'yilganda 16 s ichida 20 marta tebradigan yukning massasini (kg) toping.  $\pi^2 = 10$   
A) 4 B) 16 C) 1,6 D) 0,4
2. Silindrdagi  $0,3 \text{ dm}^3$  ideal gazni porshen o'zining og'irlik kuchi 4 N bilan bosib turibdi. Gaz hajmini  $0,1 \text{ dm}^3$  ga kamaytirish uchun porshenga ta'sir etadigan qo'shimcha kuch qiymatini (N) toping. Jarayon - izotermik deb hisoblang.  
A) 2 B) 4 C) 3 D) 5

11. Gorizontga nisbatan  $53^\circ$  burchak ostida  $v_0$  tezlik bilan otilgan jismning 20 m balandlikdan erkin tushgan jism bilan uchish vaqtlari teng bo'lsa,  $v_0$  ni (m/s) toping.  $\cos 53^\circ = 0,6$   
A) 13,4 B) 16,3 C) 12,5 D) 19,2
12. Harorati  $20^\circ\text{C}$  va bosimi 100 kPa bo'lgan  $1,45\text{ m}^3$  havo suyuq holatga keltirildi. Agar suyuq havoning zichligi  $860\text{ kg/m}^3$  bo'lsa, u qanday hajmni (l) egallaydi. Havoning molyar massasi  $29\text{ g/mol}$ .  
A) 3 B) 4 C) 2 D) 1,5
13. Elektr choynagi  $220\text{ V}$  kuchlanishga ulangan holda  $3,2\text{ A}$  tok iste'mol qilib 1 l suvni 12 minutda qaynatdi. Suvning boshlang'ich harorati  $20^\circ\text{C}$  bo'lsa, FIKni (%) toping.  
$$c_{\text{suv}} = 4200 \frac{\text{J}}{\text{kg} \cdot ^\circ\text{C}}$$
  
A) 71 B) 66 C) 98 D) 84
14. Ko'ndalang kesim yuzasi  $10\text{ mm}^2$  bo'lgan simni  $1^\circ\text{C}$  ga isitganda qanchaga uzaysa, shuncha uzaytirish uchun bu simni qanday kuch (N) bilan cho'zish kerak? Po'latning elastiklik moduli  $2,1 \cdot 10^{11}\text{ Pa}$ . Chiziqli kengayish termik koeffitsienti  $1,2 \cdot 10^{-5}\text{ K}^{-1}$ .  
A) 22,6 B) 24,6 C) 25,2 D) 23,4
15. Magnit induksiya oqimi  $0,2\text{ Wb}$  bo'lgan g'altakning induktivligi (H) qanday bo'lganda g'altakdan 1 A tok o'tadi?  
A) 0,4 B) 0,3 C) 0,2 D) 0,5
16. Harorati  $550\text{ K}$ , bosimi  $150\text{ kPa}$  bo'lgan gaz molekulalarining konsentratsiyasini ( $1/\text{m}^3$ ) toping. Boltsman doimiysi  $k = 1,38 \cdot 10^{-23}\text{ J/K}$ .  
A)  $6 \cdot 10^{25}$  B)  $5,1 \cdot 10^{26}$  C)  $10^{25}$  D)  $2 \cdot 10^{25}$
17.  $2\text{ m/s}$  boshlang'ich tezlik va  $2\text{ m/s}^2$  tezlanish bilan harakatlanayotgan jismning 4-sekunddagi ko'chishining modulini (m) toping.  
A) 10 B) 11 C) 8 D) 9
18. Induksiya vektorining moduli  $100\text{ mT}$  bo'lgan bir jinsli magnit maydonining kuch chiziqlariga  $30^\circ$  burchak ostida  $2\text{ km/s}$  tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2\text{ }\mu\text{C}$  ga teng.  
A) 0,2 B) 0,4 C) 4 D) 2
19. Velosipedchining tezligi marraga yetishiga 5 s qolganda  $27\text{ km/soat}$  edi, marraga yetganda  $36\text{ km/soat}$ ga teng bo'ldi. Harakatni tekis tezlanuvchan deb, uning tezlanishini ( $\text{m/s}^2$ ) va oxirgi 5 s da bosgan yo'lini (m) toping.  
A) 0,8; 20 B) 0,5; 44 C) 0,6; 33 D) 1; 14
20. Linzaning fokal tekisligi deb nimaga aytiladi?  
A) bosh optik o'qqa parallel o'tkazilgan tekislik  
B) linzaning fokuslaridan bosh optik o'qqa perpendikular ravishda o'tkazilgan tekislik  
C) bosh optik o'qqa  $45^\circ$  burchak ostida o'tkazilgan tekislik  
D) linza markazidan o'tgan tekislik
21. Yorug'lik to'lqini uzunligi qanday elektromagnit to'lqinlardan (m) iborat?  
A)  $4 \cdot 10^{-7}$  -  $7,6 \cdot 10^{-7}$   
B)  $6 \cdot 10^{-6}$  -  $9 \cdot 10^{-6}$   
C)  $3 \cdot 10^{-5}$  -  $8 \cdot 10^{-5}$   
D)  $5 \cdot 10^{-8}$  -  $7 \cdot 10^{-8}$
22. Proton  $q$  nuqtaviy zaryad maydonida radiusi  $a$  bo'lgan nuqtadan boshlab erkin harakatlanmoqda. Proton koordinatasi  $r$  bo'lganida uning impulsi qanday bo'ladi?  
A)  $\left(\frac{2kqem}{r}(1+r/a)\right)^{1/2}$   
B)  $\left(\frac{2kqem}{r}(1-r/a)\right)^{1/2}$   
C)  $(2kqe(1/r-1)/m)^{1/2}$   
D)  $(2kqe(1+r/a)/a)^{1/2}/m$
23. Quvvatning SI dagi o'lchov birligini belgilang.  
A) Paskal B) Volt C) Nyuton D) Vatt
24. Tutash idishga simob ( $\rho_{sm} = 13600\text{ kg/m}^3$ ) quyildi, uning ustidan bitta idishga  $20\text{ sm}$  balandlikda kerosin ( $\rho_k = 800\text{ kg/m}^3$ ) quyildi. Ikkinchisiga  $48\text{ sm}$  balandlikda moy ( $\rho_m = 900\text{ kg/m}^3$ ) quyildi. Ikkala idishdagi simob sathlarining farqini (sm) aniqlang.  
A) 1,0 B) 2,0 C) 4,4 D) 4,0

25. Qarshiliklari  $R_1=180 \Omega$  va  $R_2=360 \Omega$  bo'lgan ikkita chiroq  $U=120 \text{ V}$  kuchlanishli tarmoqqa parallel ulandi. Chiroqlarning har birida qanday quvvat ajraladi?  
A)  $P_1=60 \text{ W}$ ;  $P_2=80 \text{ W}$   
B)  $P_1=80 \text{ W}$ ;  $P_2=50 \text{ W}$   
C)  $P_1=80 \text{ W}$ ;  $P_2=40 \text{ W}$   
D)  $P_1=80 \text{ W}$ ;  $P_2=60 \text{ W}$
26. Balandligi 210 m bo'lgan sharsharadan tushayotgan suvning pastdagi temperaturasi sharshara boshidagi temperaturasidan qancha ( $^{\circ}\text{C}$ ) ortiq? Suvning solishtirma issiqlik sig'imi  $4200 \text{ J}/(\text{kg}\cdot\text{K})$ . Mexanik energiya suvning isishi uchun sarf bo'ladi.  
A) 0,5 B) 1 C) 2 D) 1,2
27. Yuqoriga tik otilgan 1 kg massali jismning 10 m balandlikdagi kinetik energiyasi 100 J bo'lsa, u qanday boshlang'ich tezlik bilan (m/s) otiladi?  
A) 20 B) 50 C) 25 D) 30
28. Radiopredatchik 30 m to'lqin uzunlikda ishlaydi. Uning chastotasini (Hz) toping.  
 $c=3\cdot 10^8 \text{ m/s}$   
A) 1000 B)  $100\cdot 10^6$  C) 10 D)  $10\cdot 10^6$
29. Tebranish konturi induktivligi  $2 \mu\text{Gn}$  bo'lgan g'altak va sig'imi  $1800 \text{ pF}$  bo'lgan kondensatordan iborat kontur qanday to'lqin uzunlikka (m) mo'ljallangan?  $c=3\cdot 10^8 \text{ m/s}$   
A) 100 B) 130 C) 110 D) 120
30. +1 elektron zaryadiga ega  $^{17}_8\text{O}$  izotopi atomining elektron qobig'ida nechta elektron bo'ladi?  
A) 17 B) 25 C) 7 D) 8
31. Massasi 8 kg bo'lgan snaryad diametri 100 mm bo'lgan to'p stvolidan 600 m/s tezlik bilan uchib chiqdi. Stvoldagi porox gazining o'rtacha bosimi 1 MPa. snaryadning stvoldagi harakat vaqtini (s) aniqlang.  
A) 0,92 B) 0,7 C) 0,55 D) 0,61
32. Bir uchiga 180 N yuk osilgan sterjen yukdan sterjen uzunligining 0,2 qismiga teng masofada tirgovuch qo'yilsa u gorizontal holatda muvozanotda buladi. Sterjen og'irligi (N) qancha?  
A) 100 B) 240 C) 180 D) 120
33. Raketa yuqoriga  $2g$  tezlanish bilan parvoz qilmoqda. Raketada osib qo'yilgan, uzunligi 0,3 m bo'lgan matematik mayatnikni tebranish davrini (ms) aniqlang.  $g=10 \text{ m/s}^2$ .  
A) 628 B) 314 C) 942 D) 157
34. Elektr sig'imlari  $C_1 = C_2=2 \mu\text{F}$  bo'lgan va o'zaro parallel ulangan kondensatorlar  $C_3=4 \mu\text{F}$  sig'imli kondensatorga ketma-ket ulanib, kondensatorlar bateriyasi hosil qilindi va zanjir 4 V kuchlanishga ega bo'lgan o'zgarmas tok manbaiga ulandi. Uchinchi kondensator olgan elektr maydon energiyasini ( $\mu\text{J}$ ) toping.  
A) 12 B) 24 C) 8 D) 16
35. 4 marta kattalashtiradigan lupaning optik kuchini (dptr) aniqlang.  
A) 1 B) 8 C) 4 D) 16
36. Jismning massasi 1 g ga ortishi uchun uning to'liq energiyasi (TJ) qanchaga ortishi kerak?  
A) 97 B) 90 C) 80 D) 100

### INGLIZ TILI

- Choose the answer which correctly completes the sentence.  
We need to be home early today so we ... at 3.30  
A) leave B) are leaving C) have left  
D) will leave
- Choose the answer which correctly complete the sentence.  
Neil Armstrong was the first man on ... Moon.  
A) a B) the C) an D) -
- Choose the answer which correctly completes the sentence.  
I wish I ... there to see Dan's face when they told him the news.  
A) have been B) would have been C) were  
D) had been
- Choose the answer which correctly completes the sentence.  
I told the doctor that I had hurt my leg ... I was playing football yesterday.  
A) while B) till C) as soon as D) during

5. Choose the answer which correctly completes the sentence.  
Mrs. Robson died in her sleep. Her doctor told me she ... from a weak heart for some time.  
A) *had been suffering* B) *was suffering*  
C) *suffered* D) *had been suffered*
6. Choose the answer which correctly complete the sentence.  
There was a long line in front of the theatre. We ... wait almost an hour to buy our tickets.  
A) *were able* B) *had to* C) *need* D) *must*
7. Choose the answer which correctly complete the sentence.  
I'm accustomed to ... with the window open.  
A) *slept* B) *sleeping* C) *to sleep* D) *sleep*
8. Choose the answer which correctly completes the sentence.  
Ann asked Helen: "Where does your friend work?"  
Ann asked Helen where...  
A) *did your friend work* B) *her friend worked*  
C) *her friend was working*  
D) *her friend had worked*
9. Choose the answer which correctly completes the sentence.  
I put salt in my tea ... mistake, thinking it was sugar.  
A) *in* B) *with* C) *for* D) *by*
10. Choose the answer which correctly completes the sentence.  
You can't go on holiday without ... money.  
A) *many* B) *no* C) *some* D) *any*
11. Choose the answer which correctly completes the sentence.  
The faster you drive, ... dangerous it is.  
A) *the more* B) *more* C) *the most*  
D) *most*
12. Choose the answer which correctly completes the sentence.  
He wanted to write to her but she ... give him her address.  
A) *don't* B) *wouldn't* C) *hadn't*  
D) *hasn't*
13. Choose the answer which correctly complete the sentence.  
In September, 2000, the people of Denmark voted "no" to joining the single European currency ... euro.  
A) *the* B) *-* C) *an* D) *a*
14. Choose the answer which correctly completes the sentence.  
The ground was ... last year.  
A) *dig* B) *dogged* C) *dug* D) *digging*
15. Choose the answer which correctly completes the sentence.  
Her son is five years old. She has a ... son.  
A) *five years older* B) *five years old*  
C) *five-year-old* D) *five year olds*
16. Choose the answer which correctly complete the sentence.  
At the circus the children were kept ... by clown acts.  
A) *amuse* B) *to amuse* C) *amused*  
D) *amusing*
17. Choose the answer which correctly complete the sentence.  
The announcement says that ... who has lost his credit card must declare about it immediately.  
A) *anyone* B) *nobody* C) *someone*  
D) *some*
18. Choose the answer which correctly completes the sentence.  
She put the sour cream in the refrigerator ... it doesn't spoil.  
A) *so that* B) *in spite of* C) *because of*  
D) *despite*
19. Choose the answer which correctly completes the sentence.  
She'll cook something delicious ... someone calls on her this evening.  
A) *in case* B) *because of* C) *in order*  
D) *so as*
20. Choose the answer which correctly completes the sentence.  
I'm starting a new job next week. I'm quite ... about it.  
A) *excited* B) *exciting* C) *excity*  
D) *excitedly*

21. Choose the answer which correctly complete the sentence.  
While Dan was washing up the dishes the girls ... the kitchen.  
A) were cleaned B) cleaned C) was cleaned  
D) were cleaning
22. Choose the answer which correctly completes the sentence.  
The last ice age ... have ended over 10,000 years ago, but from a historical point of view it was a relatively recent event.  
A) should B) was to C) may D) could
23. Choose the answer which correctly completes the sentence.  
That's the man ... wife is a doctor.  
A) which B) who C) whom D) whose

Read the text. Then choose the correct answer to question 24-26.

Babies whose mothers smoke during pregnancy could be at higher risk of growing up to be criminals, new research suggests. This is the first study to examine the relationship between mothers who smoke and their children's adult behaviour. The findings were based on data for 4,169 males born in Copenhagen between September 1959 and December 1961. Their arrest records at age 34 were studied. It was discovered that the number of cigarettes their mothers had smoked during the last third of their pregnancy affected the men's arrests for both violent and non-violent crimes. This was true even when other possible causes, such as use of alcohol, divorce, income, and home environment had been taken into consideration.

24. The main idea of the passage is that ...  
A) *smoking during pregnancy increases the possibility of the child committing crimes in adult life.*  
B) *pregnant women who smoke should be regarded as criminals and be punished.*  
C) *most criminals are heavy smokers*  
D) *4,169 males were born in Copenhagen between the years 1959 and 1961*

25. The research mentioned in the passage ...  
A) *was a repetition of several previous studies, which were inconclusive.*  
B) *studied only the last third of a mother's pregnancy.*  
C) *mainly dealt with the adult behaviour of the children of smoking mothers.*  
D) *concentrated on the effects of smoking before and after pregnancy.*
26. From the passage, we can say that the researchers were careful because ...  
A) *they studied so many men from so many different countries.*  
B) *other possible causes of crime were also considered.*  
C) *all men born between September 1959 and December 1961 were studied.*  
D) *they chose subjects who had only committed minor crimes.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Although they were described as the (27)... designs in many years, there isn't anything very new about the latest line of shoes from Santorelli. As one of the most famous designers in Italy, Salvatore Santorelli is expected to do more than simply repeat the previous year's (28)... formula of "smart, but casual" sandals in a range of pastels.

27.  
A) *Italian first new* B) *first Italian new*  
C) *first new Italian* D) *new first Italian*
28.  
A) *successfully* B) *success* C) *succession*  
D) *successful*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

A forest is a thickly wooded area. Forests have a wide (29)... of plants and animals living among the trees. Forests that like cooler climates (30)... largely in the northern hemisphere, far north of the equator. Forest floors are shady places and it can be hard (31)... plants to grow.

29.  
A) *various* B) *vary* C) *variety*  
D) *variable*

30.

- A) find    B) were found    C) found  
D) are found

31.

- A) by    B) for    C) from    D) of

Read the text. Then choose the correct answer to question 32-33

One chilly autumn morning in 1945, five thousand shoppers crowded the pavements outside Gimbels Department Store in New York City. The day before, Gimbels had taken out a full-page newspaper advertisement in the *New York Times*, announcing the sale of the first ballpoint pens in the United States. Within six hours, Gimbels had sold its entire stock of ten thousand ballpoints at \$12.50 each—approximately \$130 at today's prices.

In fact this “new” pen was not new after all, and was just the latest development in a long search for the best way to deliver ink to paper. In 1884 Lewis Waterman had patented the fountain pen, giving him the sole rights to manufacture it. This marked a significant leap forward in writing technology, but fountain pens soon became notorious for leaking. In 1888, a leather tanner named John Loud devised and patented the first “rolling-pointed marker pen” for marking leather. Loud's design contained a reservoir of ink in a cartridge and a rotating ball point that was constantly bathed on one side with ink.

Loud's pen was never manufactured, however, and over the next five decades, 350 additional patents were issued for similar ball-type pens, though none advanced beyond the design stage. Each had their own faults, but the major difficulty was the ink: if the ink was thin, the pens leaked, and if it was too thick, they clogged. Depending on the climate or air temperature, sometimes the pens would do both. Almost fifty years later, Ladislav and Georg Biro, two Hungarian brothers, **came up with** a solution to this problem. In 1935 Ladislav Biro was working as a journalist, editing a small newspaper. He became frustrated by the amount of time he wasted filling fountain pens with ink and cleaning up ink smudges. Ladislav and Georg set about making models of new pen designs and creating better inks to use in them. Ladislav observed the ink in newspaper printing dried rapidly, leaving the paper dry and smudge-free. He was determined to construct a pen using the same type of ink. However, the thicker ink would not flow from a regular pen nib so he had to develop a new type of point. Biro came up with the idea of fitting his



pen with a tiny ball bearing in its tip. As the pen moved along the paper, the ball bearing rotated and picked up ink from the ink cartridge which it delivered to the paper.

32. The problem with the ballpoint pens invented between 1888 and 1935 was that ...
- A) *the technology to manufacture them did not exist*
  - B) *they cost a great deal of money to manufacture*
  - C) *they were affected by weather conditions*
  - D) *they could not write on ordinary paper*
33. What does “**came up with**” in bold mean?
- A) *to move towards*
  - B) *to suggest*
  - C) *to get rid of*
  - D) *to reject*

Read the text. Then choose the correct answer to question 34-36.

The Great Pyramid of Giza, a monument of wisdom and prophecy, was built as a tomb for Pharaoh Cheops in 2720 B.C. Despite its antiquity, certain aspects of its construction make it one of the truly great wonders of the world. The four sides of the pyramid are aligned almost exactly on true north, south, east, and west - an incredible engineering feat. The ancient Egyptians were sun worshippers and great astronomers, so computations for the Great Pyramid were based on astronomical observations.

Explorations and detailed examinations of the base of the structure reveal many intersecting lines. Further scientific study indicates that these represent a type of time line of events past, present, and future. Many of the events have been interpreted and found to coincide with known facts of the past.

Others are prophesied for future generations and presently are under investigation.

Was this superstructure made by ordinary beings, or one built by a race superior to any known today?

34. What did the ancient Egyptians base on their calculations?
- A) *advanced technology*
  - B) *observation of the celestial bodies*
  - C) *knowledge of the earth's surface*
  - D) *advanced tools of measurement*

35. Why was the Great Pyramid constructed?
- A) *as an engineering feat*
  - B) *as a religious temple*
  - C) *as a solar observatory*
  - D) *as a tomb for the pharaoh*

36. Why is the Great Pyramid of Giza considered one of the Seven Wonders of the World?
- A) *it was built by a super race*
  - B) *it is perfectly aligned to the four cardinal points of the compass and contains many prophesies*
  - C) *it was selected as the tomb of Pharaoh Cheops*
  - D) *it is very old*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000046**

Toshkent – 2014

### MATEMATIKA (INFORMATIKA BILAN)

- $y = \frac{2x - 1}{\sqrt{x^2 - 5x + 6}}$  funksiyaning aniqlanish sohasini toping.

A) (0; 2)  
 B) (-2; 3)  
 C)  $(-\infty; 2) \cup (3; \infty)$   
 D)  $(-\infty; 3)$
- $ABC$  uchburchakda  $a=3$ ;  $b=5$ ;  $\angle C=60^\circ$  bo'lsa,  $c$  ni toping.

A)  $\sqrt{17}$  B)  $\sqrt{21}$  C)  $\sqrt{19}$  D)  $\sqrt{23}$
- $x^2 + 2\sqrt{x^2 + 6x + 13} = -6x - 5$  tenglama ildizlarining yig'indisini toping.

A) -2 B) -3 C) -6 D) -13
- Agar uch xonali sondan 6 ni ayirsak, ayirma 7 ga bo'linadi, 7 ni ayirsak, ayirma 8 ga bo'linadi, 8 ni ayirsak, ayirma 9 ga bo'linadi. Bu sonni toping.

A) 936 B) 503 C) 143 D) 167
- $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \dots \cdot \sin 45^\circ}{\cos 46^\circ \cdot \cos 47^\circ \cdot \dots \cdot \cos 89^\circ}$  ni hisoblang.

A)  $\frac{1}{2}$  B) 1 C)  $\frac{\sqrt{2}}{2}$  D)  $\frac{\sqrt{3}}{2}$
- $m$  dan katta bo'lmagan juft natural sonlarning yig'indisi  $x$ ,  $m$  dan katta bo'lmagan, lekin 10 dan katta bo'lgan juft sonlarning yig'indisi  $y$  hamda  $x + y = 810$  bo'lsa,  $m$  ning barcha qiymatlari yig'indisini toping.

A) 210 B) 83 C) 420 D) 81
- Teng yonli trapetsiyaning diagonali 10 ga teng va u asos bilan  $60^\circ$  li burchak tashkil etadi. Trapetsiyaning o'rta chizig'ini toping.

A) 5 B) 4 C)  $\frac{5\sqrt{3}}{2}$  D) 6
- $3ax - 6x^2 - 8 + x^3$  ko'phad to'la kub bo'ladigan barcha  $a$  larni toping.

A) -2 B) 2 C) -4 D) 4
- $\int x e^{-3x^2} dx$  ni hisoblang.

A)  $-\frac{1}{6}e^{-3x^2} + c$  B)  $\frac{1}{6}e^{-3x} + c$   
 C)  $\frac{1}{6}e^{-3x^2} + c$  D)  $-\frac{1}{6}e^{3x^2} + c$
- Radiusi 1 ga teng bo'lgan aylana uchta yoyga bo'lingan. Ularga mos markaziy burchaklari 1, 2 va 3 sonlariga proporsional bo'lsa, yoylardan eng kattasining uzunligini toping.

A)  $\frac{2\pi}{3}$  B)  $\frac{3\pi}{2}$  C)  $\frac{\pi}{3}$  D)  $\pi$
- Ayланaning uzunligi shu aylananing  $40^\circ$  li yoyi uzunligidan necha foiz ko'p?

A) 900 B) 700 C) 800 D) 600
- $(x - 1)^2(x^2 - 2x) = 12$  tenglamaning haqiqiy ildizlari yig'indisini toping.

A) 2 B) 4 C) 0 D) 3
- Cheksiz kamayuvchi ishorasi almashinuvchi geometrik progressiyada ketma-ket kelgan uchta hadning yig'indisi -21 ga, ko'paytmasi 729 ga teng bo'lsa, shu sonlarni toping.

A) 27; -9; 3 B) -3; 9; -27 C) -27; 9; -3  
 D) -28; 14; -7
- Idish to'g'ri burchakli parallelepiped shaklida bo'lib, uning bo'yi 60 sm, eni 45 sm va balandligi 47 sm ga teng. Agar idishdagi suv sathi 40 sm balandlikda bo'lsa, unda necha litr suv bor?

A) 108 B) 115 C) 135 D) 106
- Parallelogrammning uchta ketma-ket  $A(-3; -2; 0)$ ,  $B(3; -3; 1)$  va  $C(5; 0; 2)$  uchlari berilgan.  $\vec{AC}$  va  $\vec{BD}$  vektorlar orasidagi burchakni toping.

A)  $135^\circ$  B)  $60^\circ$  C)  $150^\circ$  D)  $120^\circ$
- Hosila uchun qaysi munosabatlar o'rinli?

  - $(\ln \sin x)' = ctgx$ ;
  - $\left(\cos \frac{1}{x}\right)' = -\frac{1}{x^2} \sin \frac{1}{x}$ ;
  - $(\log_4 5x)' = \frac{1}{5x \ln 4}$ ;
  - $(2^{\sqrt{x}})' = \frac{2^{\sqrt{x}} \ln 2}{2\sqrt{x}}$

A) 1, 4 B) 3, 4 C) 1, 2 D) 1, 3
- Agar arifmetik progressiyada  $a_1 + a_2 + a_3 = 15$  va  $a_1 a_2 a_3 = 80$  bo'lsa, uning ayirmasini toping.

A) 4 B) 2 C) 5 D)  $\pm 3$
- Uzunligi 17 ga teng bo'lgan kesmaning uchlari tekislikdan 4 va 12 ga teng uzoqlikda yotishi ma'lum bo'lsa, kesmaning tekislikdagi proyeksiyasi uzunligini toping.

A) 15 B) 16 C) 10 D) 12

19.  $f(x) = \log_4 x + 4e^{2x}$ ,  $f'(x) = ?$

A)  $\frac{1}{\ln 4} + 8e^x$     B)  $x \ln 4 + 8e^x$     C)  $\frac{1}{x \ln 4} + 8e^{2x}$

D)  $\frac{1}{x} + 8e^{2x}$

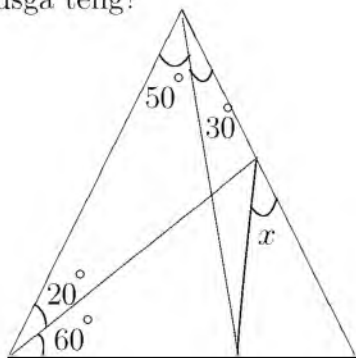
20. Xo'jayin bir kishini bir yilga yollab, unga 12 so'm pul va bir chakmon bermoqchi bo'libdi, lekin ishchi 7 oy ishlagandan keyin xo'jayin unga 5 so'm pul va bir chakmon beribdi. Chakmon necha so'm bo'lgan.

A) 4,8    B) 5,5    C) 5,2    D) 5

21. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $2\sqrt{3}$  sm bo'lsa, shu aylanaga ichki chizilgan kvadratning yuzini ( $\text{sm}^2$ ) hisoblang.

A) 18    B) 16    C) 12    D) 20

22. Quyidagi rasmda berilganlarga ko'ra  $x$  necha gradusga teng?



A) 40    B) 45    C) 50    D) 30

23.  $(2 + \frac{2}{3} - \frac{1}{2}) \cdot 6 + (\frac{8}{21} + \frac{1}{3} - \frac{5}{7}) \cdot 21 + (\frac{3}{14} - \frac{2}{7} + \frac{1}{2}) \cdot 14$  ni hisoblang.

A) 15    B) 20    C) 18    D) 19

24.  $a = \sqrt{5} + \sqrt{6}$ ,  $b = \sqrt{3} + \sqrt{8}$ ,  $c = 2 + \sqrt{7}$  sonlarni o'sish tartibida joylashtiring.

A)  $b < c < a$     B)  $c < b < a$     C)  $b < a < c$   
D)  $a < b < c$

25.  $(x^3 + 4x^2 + 4x) \cdot \sqrt{25 - x^2} \geq 0$  tengsizlikning butun sonlardan iborat yechimlari yig'indisini toping.

A) 12    B) 10    C) 8    D) 6

26.  $\frac{(2p - q)^2 + 2q^2 - 3pq}{2p^{-1} + q^2} : \frac{4p^2 - 3pq}{2 + pq^2}$  ifodani soddalashtiring va uning son qiymatini toping.  $p=0,78$ ,  $q=7/25$

A) -1    B) 1    C) 0,5    D) 0,25

27. Muntazam o'nikkiburchakka tashqi chizilgan aylana radiusi  $\sqrt{2 + \sqrt{3}}$  ga teng bo'lsa, uning tomonini toping.

A)  $\sqrt{2 + \sqrt{3}}$     B)  $\sqrt{3}$     C) 2    D) 1

28.  $x, y$  butun sonlar uchun  $-12 \leq x < 13$ ,  $-9 < y \leq 6$  va  $x + y \neq 0$  bo'lsa,  $\frac{x - y}{x + y}$  ning eng katta qiymatini toping.

A) 17    B) 14    C) 20    D) 18

29.  $y = \ln ||x| + 1|$  funksiyaning aniqlanish sohasini toping.

A)  $(1; \infty)$

B)  $(-\infty; 0)$

C)  $(0; \infty)$

D)  $(-\infty; \infty)$

30. To'g'ri to'rtburchakning diagonali 17 sm, tomonlaridan biri esa 8 sm. To'g'ri to'rtburchakning yuzini ( $\text{sm}^2$ ) toping.

A) 120    B) 80    C) 140    D) 160

31. Agar kitobdagi axborot hajmi 7 Kbayt bo'lsa, uni nechta "Axborot" so'zi bilan almashtirish mumkin?

A) 1024    B) 2048    C) 2000    D) 14336

32. Sakkizlik sanoq sistemasidan ikkilik sanoq sistemasiga o'tkazishni bajaring:  $567_8 \rightarrow x_2$

A) 10110101<sub>2</sub>    B) 101110111<sub>2</sub>    C) 1111101<sub>2</sub>

D) 11101110<sub>2</sub>

33. Tasvirli fayllarning kengaytmasi keltirilgan qatorni aniqlang.

A) .bmp, .gif    B) .com, .exe    C) .bas, .pas

D) .xls, .doc

34. MS Excel 2003 da A1 dan A10 gacha bo'lgan katakchalardagi qiymatlarni yig'indisini hisoblash formulasini aniqlang.

A)  $CYMM(A1:A10)$     B)  $=summa(A1:A10)$

C)  $A1+A10$     D)  $=CYMM(A1:A10)$

35. Elektron pochta manziliga oid mulohazalardan xatosini aniqlang.

A) E-mail manzilida @ belgisi ishtirok etmaydi

B) E-mail manzilida probel (bo'shliq) belgisi ishtirok etmaydi

C) E-mail manzilida raqamlar ishtirok etadi

D) E-mail manzilida lotin harflari ishtirok etadi

36. Paskal dasturi lavhasidagi hisob natijasini aniqlang.  
begin a:=12; b:=14; c:=10; if(a>b) or (b>c)  
then y:=a+b-c else y:=a-b+c; writeln(y); end.  
A) 8 B) 6 C) 16 D) 14

### FIZIKA

1. Garmonik tebranishlarining amplitudasi 5 sm, boshlang'ich fazasi  $\frac{3\pi}{2}$  ga teng. Tebranishlar soni minutiga 120 marta tebranadi. Garmonik tebranishlarning tenglamasini ko'rsating.

A)  $x = 0,05\cos\left(4\pi t + \frac{3\pi}{2}\right)$

B)  $x = 5\sin\left(4\pi t + \frac{\pi}{2}\right)$

C)  $x = 0,05\sin 4\pi t$

D)  $x = 5\cos\left(2\pi t + \frac{3\pi}{2}\right)$

2. Aylanma harakat uchun dinamikaning asosiy qonuni formulasini belgilang.

A)  $\vec{\mu} = I\vec{\beta}$

B)  $\Delta Fr = \Delta mr^2\beta$

C)  $M \cdot \Delta t = I\vec{\omega} - I\vec{\omega}_0$

D)  $I\omega$

3. Suyuqlikning idish devoriga bosim kuchi  $F$  idish tubiga bo'lgan bosim kuchiga teng bo'lishi uchun  $R$  radiusli silindrik idishga qanday balandlik  $H$  gacha suv qiyish kerak?

A)  $R = 2H$  B)  $R = H/2$  C)  $R = 4H$

D)  $R = H$

4. Jism  $h$  balandlikdan erkin tushmoqda. Balandlikning oxirgi  $3/4$  qismidagi o'rtacha tezligi, boshlang'ich  $1/4$  qismidagi o'rtacha tezligidan necha marta farq qiladi?

A) 8 marta katta B) 3 marta katta

C) 9 marta katta D) 6 marta kichik

5. Yopiq idishga to'yingan bug' qamalgan bo'lib bosimi 10 kPa. Agar bosimni 2 marta oshirib, hajmini 2 marta kamaytirsak to'yingan suv bug'larining zichligi qanday o'zgaradi? Jarayon izotermik.

A) o'zgarmaydi

B) 2 marta oshadi

C) haroratning qandayligicha bog'liq

D) 2 marta kamayadi

6. Prujinaga birinchi jism osilganda prujina 2 sm ga cho'zildi, ikkinchi jism osilganda yesa 3 sm ga cho'zildi. Ikkala jism birgalikda osilganda prujina qancha (sm) cho'ziladi?

A) 2,0 B) 2,5 C) 1,2 D) 5,0

7. Elektr dvigatelga ulangan iste'molchidan 0,5 A tok o'tmoqda, undagi kuchlanish 20 V. Dvigatel 1 soatda qancha ish (kJ) bajaradi? Dvigatelning FIK 80% ga teng.

A) 28,8 B) 30 C) 34 D) 32,5

8.  $v$  tezlik bilan borayotgan odam ko'cha chiroqlari tagidan o'tib bormoqda, chiroqlar yerdan  $H$  balandlikka osilgan. Odamning balandligi  $h$  ga teng bo'lsa, uning yerdagi soyasining uchki qismi qanday tezlikda harakatlanadi?

A)  $\frac{H-h}{H}v$  B)  $\frac{H+h}{H}v$  C)  $v$  D)  $\frac{H}{H-h}v$

9. Yerdan Oygacha bo'lgan masofa 384 ming km bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?

A) 1,4 B) 1,2 C) 1,5 D) 1,3

10. Atom holatidagi kislorod zarrachalarining  $138^\circ\text{C}$  dagi o'rtacha kvadratik tezliklarini (m/s) aniqlang.  $M_{atom}=16$  g/mol,  $R=8,3 \frac{\text{J}}{\text{K} \cdot \text{mol}}$

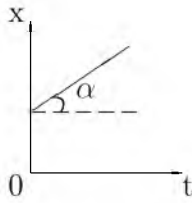
A) 840 B) 540 C) 650 D) 800

11. Jismning kinetik energiyasi 1 J, impulsi 1 kg·m/s bo'lsa, uning massasi (kg) qancha?

A) 0,25 B) 2 C) 1 D) 0,5

12. Bosim 100 Pa, molekulari konsentratsiyasi  $10^{25} \text{ m}^{-3}$  bo'lganda gazning temperaturasi (K) toping.

A) 500 B) 725 C) 650 D) 800

13. Zanjirga  $R$ ,  $L$ ,  $C$  elementlar ketma-ket ulangan va zanjirga  $U \cos(\omega t + \varphi)$  o'zgaruvchan kuchlanish berilgan. Agar chastota rezonans chastota ekanligi ma'lum bo'lsa, zanjirdan o'tuvchi tok quvvatini toping.  
A)  $U^2 RL/2C$  B)  $U^2 R$  C)  $U^2 R/2$   
D)  $U^2 R/2\omega C$
14. Induksiya vektorining moduli 0,8 T, yo'nalishi gorizontal bo'lgan bir jinsli magnit maydonida uzunligi 25 sm, massasi 16 g bo'lgan gorizontal sim muallaq turishi uchun simning ko'ndalang kesim yuzasi orqali har sekundda nechta elektron oqib o'tishi kerak?  $g=10 \text{ m/s}^2$ .  
A)  $1,2 \cdot 10^{17}$  B)  $5 \cdot 10^{18}$  C)  $2,5 \cdot 10^{18}$   
D)  $2,5 \cdot 10^{17}$
15. O'zgaruvchan tok o'tayotgan zanjir qismidagi kuchlanishi vaqt o'tish bilan  $U = U_0 \sin(\omega t + \pi/6)$  qonun bo'yicha o'zgaradi. Vaqtning  $T/12$  qiymatida kuchlanishning oniy qiymati 10 V ga teng. Kuchlanishning amplituda qiymatini (V) toping.  
A) 11,54 B) 11 C) 11,1 D) 12
16. Tezligi  $1,9 \cdot 10^7 \text{ m/s}$  bo'lgan  $\alpha$ -zarra oltin atomi yadrosi yo'nalishida harakatlanib, yadroga qanday eng kichik masofagacha (m) yaqinlashishi mumkin?  $\alpha$ -zarraning massasi  $6,6 \cdot 10^{-27} \text{ kg}$ , zaryadi  $1,3 \cdot 10^{-17} \text{ Kl}$ .  
A)  $4,9 \cdot 10^{-14}$  B)  $4 \cdot 10^{-14}$  C)  $3,1 \cdot 10^{-14}$   
D)  $3,8 \cdot 10^{-14}$
17. O'zgarimas tok manbaiga avval  $9 \Omega$  qarshilik so'ngra  $4 \Omega$  qarshilik ulandi. Har ikkala holda birday vaqt ichida qarshiliklarda bir xil miqdorda issiqlik ajraladi. Manbaning ichki qarshiligini ( $\Omega$ ) aniqlang.  
A) 3 B) 36 C) 6 D)  $\sqrt{6}$
18. Gorizontal ravishda aylanayotgan disk ustida, disk o'qidan 1 m masofada 1 m/s chiziqli tezlik bilan aylanayotgan jism ishqalanish koeffitsiyenti qanday bo'lganda joyidan qo'zg'ala boshlaydi?  
A) 0,05 B) 0,2 C) 0,01 D) 0,1
19. Solenoiddagi tok kuchi 1,5 A bo'lganda, undan 150 mWb magnit oqimi o'tsa, uning induktivligini (Hz) aniqlang.  
A) 0,3 B) 1 C) 0,5 D) 0,1
20. Energiyasi  $6 \cdot 10^{-19} \text{ J}$  ga teng bo'lgan fotonning impulsi (kg·m/s) qancha?  $c=3 \cdot 10^8 \text{ m/s}$   
A)  $2 \cdot 10^{-28}$  B)  $0,2 \cdot 10^{-28}$  C)  $2 \cdot 10^{-27}$   
D)  $0,2 \cdot 10^{-27}$
21. Yorug'lik suvda qanday tezlik (m/s) bilan tarqaladi?  $n_{\text{suv}}=1,33$   
A) 00000 B)  $2,25 \cdot 10^8$  C)  $2,20 \cdot 10^8$   
D)  $3 \cdot 10^8$
22. Tinch turgan liftdagi matematik mayatnik tebranish davri 5 s ga teng. Tezlanish bilan harakatlanayotgan liftdagi mayatnik tebranish davri 10 s ga teng bo'lsa, liftning tezlanishini ( $\text{m/s}^2$ ) aniqlang.  
A) 4 B) 7,5 C) 2,5 D) 5
23. Berilgan grafikdan foydalanib,  $\alpha=23^\circ$  bo'lganda jism tezligini (m/s) toping.  $\sin 23^\circ=0,39$ ;  $\cos 23^\circ=0,92$
- 
- A) 0,39 B) 0,4245 C) 0,92 D) 2,36
24. Hajmi bir litr bo'lgan kub shaklidagi idish suv bilan to'ldirilgan. Suvning idish tubiga va to'rt devoriga bo'lgan umumiy bosim kuchini (N) aniqlang.  
A) 30 B) 24,4 C) 28,3 D) 29,4
25. Elektr sig'implari  $C_1 = C_2 = C_3=10 \mu\text{F}$  dan bo'lgan kondensatorlardan ikkitasi o'zaro paralell, uchinchi esa ularga ketma-ket ulangan kondensatorlar bateriyasi o'zgarimas kuchlanish manbaidan zaryadlangan. Birinchi kondensator olgan elektr zaryadi 5 nC ga teng bo'lsa, uchinchi kondensatorning elektr zaryadini (nC) toping.  
A) 10 B) 5 C) 15 D) 7,5
26. Sanoq jismi ,unga bog'langan koordinatalar sistemasi va vaqt o'lchash asbobi ... deyiladi.  
A) sanoq jismi B) sanoq sistemasi  
C) koorinata boshi D) fazo
27. Metallarda erkin elektronlarning tezligi  $1,1 \cdot 10^5 \text{ m/s}$  bo'lsa, uning kinetik energiyasi (J) nimaga teng?  
A)  $5 \cdot 10^{-20}$  B)  $5,5 \cdot 10^{-20}$  C)  $6 \cdot 10^{20}$   
D)  $5,5 \cdot 10^{-21}$

28. Yadro bombasining portlashi nimadan iborat?

- A) og'ir vodorod yadrolarining sintez reaksiyasidan  
 B) poroxning portlashidan  
 C) dinamitning portlashidan  
 D) yadrolar parchalanishining zanjirli reaksiyasidan

29. 2 ta bir xil ( $A$  va  $B$ ) elektrolitik vanna mis kuporosi eritmasi bilan to'ldirildi.  $A$  vannadagi eritmaning konsentratsiyasi  $B$  vannadagidan katta. Agar ular ketma-ket ulansa qaysi vannada ko'proq mis ajraladi? Parallel ulansa-chi?

- A) bir xil,  $A$  vannada    B) bir xil, bir xil  
 C)  $A$  vannada,  $B$  vannada  
 D)  $B$  vannada,  $A$  vannada

30.  $m$  massali zarraning kinetik energiyasi  $W$  bo'lsa, tezligi qanday?

- A)  $v = c\sqrt{1 - \left(\frac{mc^2}{mc^2+W}\right)^2}$   
 B)  $v = \sqrt{2W/m}$   
 C)  $v = c^2p/W$   
 D)  $v = c\sqrt{1 + \left(\frac{mc^2}{mc^2+W}\right)^2}$

31. Ko'ndalang kesim yuzasi  $20 \text{ mm}^2$ , tok tashuvchi elektronlarining konsentratsiyasi  $2 \cdot 10^{22} \text{ sm}^{-3}$  va tartibli harakat tezligi  $0,01 \text{ mm/s}$  ga teng bo'lgan o'tkazgichning ko'ndalang kesimi orqali 5 minutda o'tgan elektronlar sonini toping.

- A)  $2,2 \cdot 10^{21}$     B)  $4 \cdot 10^{21}$     C)  $1,2 \cdot 10^{21}$   
 D)  $2 \cdot 10^{20}$

32.  $25 \text{ kg}$  toshko'mir batamom yonganda qancha issiqlik (J) ajralib chiqadi?  $q=2,7 \cdot 10^7 \text{ J/kg}$

- A)  $6,75 \cdot 10^8$     B)  $6 \cdot 10^8$     C)  $5 \cdot 10^8$     D)  $6,5 \cdot 10^8$

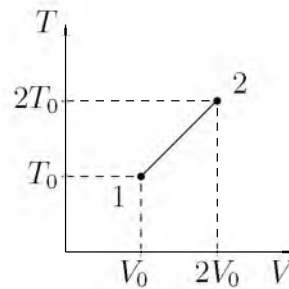
33.  $60 \text{ dm}^3$  hajmdagi ballonda  $27^\circ\text{C}$  temperaturadagi  $5 \text{ atm}$  bosim ostida vodorod bor. Vodorodni ideal deb hisoblab ,gazning massasini (g) aniqlang.

- A) 24    B) 72    C) 40    D) 12

34. Massasi  $5000 \text{ t}$  bo'lgan poyezd  $36 \text{ km/soat}$  tezlik bilan harakatlanmoqda. Agar tormozlanish kuchi  $0,25 \text{ MN}$  ga teng bo'lsa, tormozlangandan keyin bir minut ichida poyezd qancha masofani (m) o'tadi?

- A) 51    B) 5000    C) 5100    D) 510

35. Rasmda bir atomli ideal gaz 1 holatdan ikkinchi holatga o'tish jarayonida temperaturasini hajmga bog'lanishini grafigi tasvirlangan. Bu jarayonda gazning ichki energiyasi  $45 \text{ kJ}$  ga ortgan bo'lsa, gaz jami qancha issiqlik (kJ) qabul qilgan?



- A) 0    B) 90    C) 75    D) 45

36. Bir uchiga  $180 \text{ N}$  yuk osilgan sterjen yukdan sterjen uzunligining  $0,2$  qismiga teng masofada tirgovuch qo'yilsa u gorizontal holatda muvozanotda buladi. Sterjen og'irligi (N) qancha?

- A) 100    B) 240    C) 120    D) 180

### INGLIZ TILI

1. Choose the answer which correctly complete the sentence.

Peter would buy a Cadillac if it ... so expensive.

- A) hasn't been    B) weren't    C) wasn't  
 D) isn't

2. Choose the answer which correctly completes the sentence.

Sunday morning breakfast ... in the kitchen at nine.

- A) is being served    B) serves    C) is served  
 D) is serving

3. Choose the answer which correctly completes the sentence.

It was a chance in ... million that my cousin and I should run into each other in London.

- A) a    B) an    C) the    D) -

4. Choose the answer which correctly completes the sentence.  
He tried to phone his friend four days ago with no success. Since then he ... him five times.  
A) *phoned* B) *phone* C) *has phoned*  
D) *is phoning*
5. Choose the answer which correctly completes the sentence.  
My little sister likes to sit on a park bench and watch the ducks ... in the pond.  
A) *swimming* B) *swam* C) *to swim*  
D) *swum*
6. Choose the answer which correctly completes the sentence.  
A young woman walked into the office. She ... a baby.  
A) *carries* B) *had carried* C) *carrying*  
D) *was carrying*
7. Choose the answer which correctly completes the sentence.  
She never allowed herself to get depressed ... all her problems.  
A) *despite* B) *nevertheless* C) *as for*  
D) *whereas*
8. Choose the answer which correctly completes the sentence.  
If I had eaten breakfast several hours ago, I ... hungry now.  
A) *wouldn't be* B) *weren't*  
C) *wouldn't have been* D) *had been*
9. Choose the answer which correctly completes the sentence.  
Benjamin Franklin said that ... turkey should be the national bird of the Americans.  
A) *a* B) *an* C) *the* D) *some*
10. Choose the answer which correctly completes the sentence.  
We must run to the cinema. The film ... in five minutes.  
A) *starts* B) *will start* C) *will be starting*  
D) *is starting*
11. Choose the answer which correctly completes the sentence.  
He is trying to make them ... that they must be thankful to him.  
A) *feels* B) *feeling* C) *feel* D) *to feel*
12. Choose the answer which correctly completes the sentence.  
Did you tell him the news? He hadn't heard the news, ...?  
A) *had he* B) *he had* C) *hadn't he*  
D) *had he heard*
13. Choose the answer which correctly completes the sentence.  
He's talked about it many times. Any ... discussion is useless.  
A) *far* B) *further* C) *furthest* D) *farthest*
14. Choose the answer which correctly completes the sentence.  
You can't go on holiday without ... money.  
A) *many* B) *some* C) *no* D) *any*
15. Choose the answer which correctly completes the sentence.  
We had invited a hundred guests, none of ... he knew.  
A) *whom* B) *that* C) *whose* D) *which*
16. Choose the answer which correctly complete the sentence.  
Father didn't let us ... so late.  
A) *to go out* B) *went out* C) *going out*  
D) *go out*
17. Choose the answer which correctly completes the sentence.  
"Where is the nearest bank?"  
The boy asked the tour guide where ...  
A) *the nearest bank is* B) *is the nearest bank*  
C) *the nearest bank was*  
D) *was the nearest bank*
18. Choose the answer which correctly completes the sentence.  
This newspaper has a long ... of attacking corruption and mismanagement.  
A) *tradition* B) *traditionalism*  
C) *traditional* D) *traditionally*
19. Choose the answer which correctly completes the sentence.  
She'll cook something delicious ... someone calls on her this evening.  
A) *so as* B) *because of* C) *in order*  
D) *in case*



20. Choose the answer which correctly completes the sentence.

In Britain you ... drive a car when you're 17.

A) *need* B) *can* C) *must* D) *have to*

21. Choose the answer which correctly completes the sentence.

He hardly recognised Amanda! She ... blonde.

A) *had to dye her hair* B) *dyled your hair*  
C) *has had her hair dyed*  
D) *had her hair to dye*

22. Choose the answer which correctly complete the sentence.

They have promised to lend me a tennis racket so I ... take mine.

A) *daren't* B) *mustn't* C) *can't*  
D) *don't have to*

23. Choose the answer which correctly completes the sentence.

The red car isn't as expensive as the white one, but the black one is ... expensive of all.

A) *the least* B) *most* C) *less* D) *more*

Read the text. Then choose the correct answer to question 24-26.

Sleep researchers have found that people can make themselves wake up at a given time simply by deciding to do so before they go to sleep. Scientists took two groups of volunteers and, at nightfall, told one group that they would be woken at 6 a.m. and the other that they would be woken at 9 a.m. The sleepers' levels of the hormone adrenocorticotropin, which is known to cause spontaneous awakening, were then measured. In each group, there was a rise in the levels of the hormone one hour before the volunteers expected to get up. The three -hour difference between the rise in hormones in the two groups suggests that the body can be programmed to wake up on command.

24. The people studied by the researchers ...

A) *suffered from insomnia.*  
B) *were having difficulty getting up early.*  
C) *participated in the experiment at their own will.*  
D) *were unable to wake up by other means.*

25. It seems that adrenocorticotropin ...

A) *is produced by the body some time before a person wakes up*  
B) *is responsible for causing sleeplessness in a number of people*  
C) *is used by doctors for people who have difficulty getting up*  
D) *exists in higher levels in people who wake up very early*

26. The experiment related in the passage has indicated that ...

A) *hormones are more effective than outside stimuli for waking people.*  
B) *our bodies are capable of being conditioned to wake up at a suggested hour.*  
C) *people who wake up at 6 a.m. have more hormones than 9 a.m. risers.*  
D) *the hormones that wake people up have a three -hour long cycle.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Most whales are huge (27)... The largest whales are called blue whales. They can grow to 30 meter in length and can weigh 135,000 kilogram. Blue whales are (28)... larger than elephant and larger than any of the now extinct dinosaur. The heart of an adult blue whale is about the size of a compact car.

- 27.

A) *creative* B) *creators* C) *creatures*  
D) *create*

- 28.

A) *very* B) *much* C) *some* D) *no*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

- 29.

A) *familiar* B) *familiarize* C) *familiarly*  
D) *familiarity*

30. A) *is* B) *are* C) *have been* D) *will be*

31. A) *of* B) *with* C) *towards* D) *into*

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *The danger of hunting for the Brazilian population.*
- B) *The breeding of small river dolphins.*
- C) *Hydro-electric dam projects on the Yangtze river.*
- D) *The danger of two breeds of dolphins disappearing.*

33. What does the number 10 in the text refer to?
- A) *Governmental organizations which fight the pollution of rivers.*
- B) *The percentage of living Yangtze river dolphins.*
- C) *The percentage of Amazonian dolphins which die out every year.*
- D) *Groups of biologist who are trying to repopulate dolphins.*

Read the text. Then choose the correct answer to question 34-36.

In 1971 the Great Persian Empire celebrated the 1500 th anniversary of its founding.

Its founder was Cyrus the Great, who proclaimed himself the King of the Kings. His son Cambyses succeeded his throne, conquering Egypt and expanding the empire.

Darius I followed Cambyses and was probably the most famous of this long line of kings. Under his rule, the empire stretched as far as India.

Governors were placed in charge of the provinces. Extensive systems of roads and waterways improved communication throughout the kingdom. He was one of a few ancient rulers who permitted his subjects to worship as they wished. The magnificent city of Persepolis, founded under his direction in 518 B.C. was a ceremonial center.

34. Who is considered the creator of the Persian Empire?
- A) *Darius I* B) *Persepolis* C) *Combyses*  
D) *Cyrus*
35. Who was the predecessor of Cambyses?
- A) *Cyrus* B) *Persepolis* C) *Darius I*  
D) *Egypt*
36. Who were responsible for the provinces?
- A) *the Egyptians* B) *the governors*  
C) *the King* D) *the subjects*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000047**

Toshkent – 2014

### MATEMATIKA (INFORMATIKA BILAN)

1.  $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \sin 3^\circ \cdot \dots \cdot \sin 90^\circ}{\sin 91^\circ \cdot \sin 92^\circ \cdot \sin 93^\circ \cdot \dots \cdot \sin 179^\circ}$  ni hisoblang.
- A)  $\frac{\pi}{2}$  B) 1 C)  $\frac{\sqrt{2}}{2}$  D) 2
2. Teng yonli uchburchakning uchidagi tashqi burchagi  $120^\circ$  ga teng bo'lsa, asosidagi burchak sinusini toping.
- A)  $\frac{\sqrt{3}}{2}$  B)  $\frac{\sqrt{2}}{2}$  C)  $\frac{1}{2}$  D) 1
3.  $\sqrt{x^2 - x - 12} + \sqrt{5x - x^2 - 4} + \operatorname{tg} \frac{\pi}{2x - 4} = 1$  tenglamani yeching.
- A) 1; 3 B) 4 C) 1 D) 3
4.  $y = -3x^2 + 2x + |x + 2|$  funksiyaning eng katta qiymatini toping.
- A) 10 B)  $2\frac{4}{5}$  C)  $2\frac{3}{4}$  D)  $3\frac{11}{12}$
5.  $3ax - 6x^2 - 8 + x^3$  ko'phad to'la kub bo'ladigan barcha  $a$  larni toping.
- A) -4 B) 4 C) -2 D) 2
6.  $x, y, z$  - butun sonlar bo'lib,  $\begin{cases} \frac{xy}{y-x} = -\frac{15}{2} \\ \frac{yz}{z-y} = \frac{21}{4} \\ \frac{xz}{z-x} = \frac{35}{2} \end{cases}$  bo'lsa,  $x + y - z = ?$
- A) 4 B) 9 C) 1 D) 15
7.  $ABCD$  parallelogrammda  $BD = 4\sqrt{2}$ ,  $\angle ADB = 60^\circ$ ,  $\angle CDB = 75^\circ$  bo'lsa,  $AB$  ni toping.
- A)  $4\sqrt{3}$  B)  $3\sqrt{3}$  C)  $5\sqrt{3}$  D)  $6\sqrt{2}$
8.  $y = \frac{3x+1}{x+2}$  funksiyaning qiymatlar to'plamini toping.
- A)  $(-\infty; -\frac{1}{3})$   
 B)  $[-2; -\frac{1}{3}]$   
 C)  $(-\infty; -2)$   
 D)  $(-\infty; 3) \cup (3; \infty)$
9.  $|1 - |1 - x|| = 0,5$  tenglamaning ildizlari yig'indisini toping.
- A) 1 B) 5 C) 3 D) 4

10.  $y = \sqrt{\sin^3 2x}$  ning hosilasini hisoblang.

A)  $3\sqrt{\sin 2x}$  B)  $-3\cos 2x \sqrt{\sin 2x}$   
 C)  $\frac{3}{2}\sqrt{\sin 2x}$  D)  $3\cos 2x \sqrt{\sin 2x}$

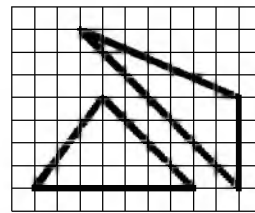
11.  $\sqrt{x^2 + 2x + 1} - |x - 4| = 2$  tenglamaning  $[1; 3]$  kesmadagi ildizini toping.

A) 2,5 B) *bu oraliqda yechimi yo'q* C) 2,(3)  
 D) 1,5

12.  $y = 7\cos\sqrt{x}$  funksiyaning davrini aniqlang.

A) *davriy emas* B)  $2\pi^2$  C)  $4\pi^2$  D)  $2\pi$

13. Rasmda qanday uchburchaklar tasvirlangan?



A) *tengdosh*

B) *perimetrlari bir xil*

C) *yuzalari har xil*

D) *uchburchaklardan biri to'g'ri burchakli*

14. Doiraning yuzasi 44% ga oshirilsa, uning radiusi necha foizga oshadi?

A) 35 B) 30 C) 25 D) 20

15.  $ABC$  uchburchak berilgan.  $AB$  to'g'ri chiziqqa parallel tekislik bu uchburchakning  $AC$  tomonini  $A_1$  nuqtada,  $BC$  tomonini  $B_1$  nuqtada kesib o'tadi.  $AB=15$  sm,  $AA_1 : AC = 2 : 3$  bo'lsa,  $A_1B_1$  kesma uzunligini (sm) toping.

A) 3 B) 5 C) 4 D) 2

16. O'zaro tashqi urinuvchi 3 ta aylana radiuslari 1, 2 va 3 ga teng. Bu aylanalarning urinish nuqtalari orqali o'tuvchi aylananing radiusini toping.

A) 1 B)  $1/3$  C)  $1/2$  D)  $1,2$

17. To'rtta nuqta aylananani yoylarga ajratadi. Yoylarning uzunliklari maxraji 2 ga teng geometrik progressiyani tashkil etadi. Shu to'rtta nuqtani ketma-ket tutashtirish natijasida hosil bo'lgan to'rtburchakning diagonallari orasidagi eng katta burchakni toping.

A)  $120^\circ$  B)  $100^\circ$  C)  $150^\circ$  D)  $130^\circ$

18.  $y = \ln ||x| + 1|$  funksiyaning aniqlanish sohasini toping.  
 A)  $(0; \infty)$   
 B)  $(1; \infty)$   
 C)  $(-\infty; 0)$   
 D)  $(-\infty; \infty)$
19. Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.  
 A) 15 B) 10 C) 30 D) 20
20.  $\left((-15)^{-3}\right)^{-8} : \left((-15)^{-13}\right)^{-2} - \left(-\frac{1}{15}\right)^2$  ni hisoblang.  
 A) 0 B)  $\frac{2}{225}$  C)  $-\frac{1}{225}$  D) 50
21.  $2; b_2$  va  $b_3$  sonlari o'suvchi geometrik progressiyaning dastlabki uchta hadidan iborat. Agar bu progressiyaning ikkinchi hadiga 25 qo'shilsa, hosil bo'lgan sonlar arifmetik progressiyaning dastlabki uchta hadini tashkil etadi.  $b_2$  toping.  
 A) 6 B) 12 C) 10 D) 8
22. Uchlari  $A(1; 1)$ ,  $B(-2; 3)$  va  $C(-1; -2)$  nuqtalarda bo'lgan uchburchakning  $A$  va  $B$  burchaklarini toping.  
 A)  $45^\circ; 90^\circ$  B)  $30^\circ; 90^\circ$  C)  $90^\circ; 45^\circ$   
 D)  $60^\circ; 30^\circ$
23. Uzunligi 19,8 m bo'lgan arqon ikki bo'lakka bo'lindi. Bo'laklardan birining uzunligi ikkinchisidan 20% ortiq bo'lsa, har bir bo'lakning uzunligini (m) toping.  
 A) 9 va 10,8 B) 7,8 va 12 C) 8 va 11,8  
 D) 6,8 va 13
24. Velosipedchi bir soatda 15,75 km, piyoda esa  $4\frac{1}{2}$  km yo'l bosadi. Velosipedchining tezligi piyodaning tezligidan necha marta ortiq?  
 A) 3,75 B) 11,5 C) 11,25 D) 3,5
25.  $\frac{(2p - q)^2 + 2q^2 - 3pq}{2p^{-1} + q^2} : \frac{4p^2 - 3pq}{2 + pq^2}$  ifodani soddalashtiring va uning son qiymatini toping.  
 $p=0,78, q=7/25$   
 A) 1 B) 0,5 C) 0,25 D) -1
26.  $a = \sqrt{5} + \sqrt{6}$ ,  $b = \sqrt{3} + \sqrt{8}$ ,  $c = 2 + \sqrt{7}$  sonlarni o'sish tartibida joylashtiring.  
 A)  $b < c < a$  B)  $a < b < c$  C)  $c < b < a$   
 D)  $b < a < c$
27.  $f(x) = \cos x + e^x$ ,  $F(x) = ?$   
 A)  $\sin x - \frac{1}{x}e^x + c$  B)  $-\cos x + e^x + c$   
 C)  $-\sin x + e^x + c$  D)  $\sin x + e^x + c$
28.  $\frac{0,725 + 0,6 + \frac{7}{40} + \frac{11}{20}}{0,128 \cdot 6\frac{1}{4} - 0,0345 : \frac{3}{25}} \cdot 0,25$  ni hisoblang.  
 A) 2 B) 4 C) 1/2 D) 1
29.  $x(x+1)(x-1)(x+2) = 24$  tenglamani yeching.  
 A)  $x_1 = -1; x_2 = -2$  B)  $x_1 = x_2 = 1$   
 C)  $x_1 = 0; x_2 = 1$  D)  $x_1 = -3; x_2 = 2$
30. To'rtburchakli muntazam prizma asosining yuzi  $144 \text{ sm}^2$ , balandligi 14 sm. Prizma diagonalini (sm) toping.  
 A) 21 B) 20 C) 22 D) 12
31. Dastur asosida boshqariladigan birinchi hisoblash mashinasini kim va qachon ixtiro qilgan?  
 A) 1930 yil, V.Bush B) 1941 yil, K.Suze  
 C) 1944 yil, G.Eyken D) 1907 yil, Li de Fores
32. Protsessorlardan ma'lumotlarni baytlarda olib, qurilmalarga bitlarda uzatadigan port turini aniqlang.  
 A) parallel B) ketma-ket C) slot  
 D) shina
33. Kompyuter uchun yangi dasturlar tayyorlash va tahrirlashni yengillashtiruvchi dasturlar qanday nomlanadi?  
 A) Sistema dasturlari B) Amaliy dasturlar  
 C) Uskunaviy dasturlar D) Utilitalar
34. Ma'lumotlar ombori undagi axborot shakliga ko'ra qanday turlarga ajratiladi?  
 A) hujjatli va faktografik  
 B) relyatsion va to'rli C) matnli va grafik  
 D) raqamli va analog
35. Kompyuter ekranida aks etgan holatni rasmga olish uchun qaysi klavishlardan foydalaniladi?  
 A) Shift + Delete B) Ctrl + Alt + Delete  
 C) Print Screen / Sys Rq D) Ctrl + F12

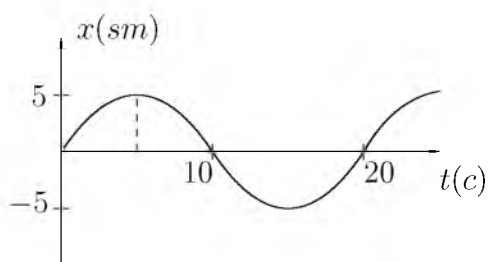
36. Paskal dasturi lavhasidagi natijani aniqlang.  
begin X:=2; p:=1; 1:P:=P\*(2\*x-2); X:=X+3; if  
X<=6 then goto 1; writeln(P); end.  
A) 16 B) 20 C) 2 D) 24

### FIZIKA

- Slindrik idishga teng massali simob ( $\rho_{sim}=13600 \text{ kg/m}^3$ ) va kerosin ( $\rho_{ker}=800 \text{ kg/m}^3$ ) quyildi. Ularning umumiy balandligi 18 sm bo'lsa, idish tubidan 1 sm yuqoridagi bosimni (Pa) aniqlang.  $g=10 \text{ m/s}^2$   
A) 2720 B) 1224 C) 680 D) 1360
- 10 m/s tezlik bilan kelayotgan avtomobil keskin tormozlanganda tormozlanish yo'li 10 m bo'lsa, avtomobil g'ildiragi va yo'l orasidagi ishqalanish koeffitsiyentini toping.  
A) 0,5 B) 0,25 C) 0,05 D) 0,1
- Quyida ifodalangan qonun qanday nomlanadi?  
**Agar jism bir necha kuch ta'sirida harakatlanayotgan bo'lsa, har bir kuch boshqa kuchlar bilan birga yoki yakka o'zi ta'sir qilayotganidan qat'iy nazar jismga hamma vaqt bir xil tezlanish beradi.**  
A) *Impulsning saqlanish qonuni*  
B) *Nyutonning II qonuni*  
C) *Inersiya qonuni*  
D) *Kuchlar ta'sirining mustaqillik qonuni*
- Massasi 15 kg bo'lgan chanani bola 45° yo'nalishdagi kuch bilan tortib bormoqda. Qor bilan chana orasidagi ishqalanish koeffitsienti 0,02 ga teng bo'lsa, chana tekis harakat qilishi uchun bola qanday kuch (N) bilan tortish kerak?  
A) 4,2 B) 4,0 C) 2,1 D) 3
- Tomonlarining uzunliklari bir xil bo'lgan to'g'ri to'rtburchak shaklidagi yassi g'altaklarning birinchisi 340 ta, ikkinchisi 100 ta o'ramga ega. Bir jinsli magnit maydonida ikkinchi g'altakka ta'sir etuvchi maksimal aylantiruvchi moment birinchi g'altakka nisbatan 2 marta katta. Agar ikkinchi g'altakdagi tok kuchi 170 mA ga teng bo'lsa, birinchi g'altakdagi tok kuchini toping (mA).  
A) 34 B) 25 C) 50 D) 85
- Atrof-muhit bilan issiqlik miqdori almashmasdan ro'y beradigan jarayonga qanday jarayon deyiladi?  
A) *adiabatik* B) *izotermik* C) *izobarik*  
D) *izoxorik*
- Yorug'likning qutblanish darajasini va qutblanish tekisligining vaziyatini aniqlash uchun qaysi asbobdan foydalaniladi?  
A) *spektrometr* B) *spektrograf* C) *fotometr*  
D) *analizator*
- Tezligi  $1,9 \cdot 10^7 \text{ m/s}$  bo'lgan  $\alpha$ -zarra oltin atomi yadrosi yo'nalishida harakatlanib, yadroga qanday eng kichik masofagacha (m) yaqinlashishi mumkin?  $\alpha$ -zarraning massasi  $6,6 \cdot 10^{-27} \text{ kg}$ , zaryadi  $1,3 \cdot 10^{-17} \text{ Kl}$ .  
A)  $4 \cdot 10^{-14}$  B)  $3,8 \cdot 10^{-14}$  C)  $3,1 \cdot 10^{-14}$   
D)  $4,9 \cdot 10^{-14}$
- Elektron nur trubkasida katod spiralinig temperaturasi kamayishi bilan to'yinish toki qanday o'zgaradi?  
A) *avval ortib so'ngra kamayadi* B) *kamayadi*  
C) *ortadi* D) *o'zgarmaydi*
- Massasi 10 kg va uzunligi 40 sm bo'lgan tayoqning uchlariga massalari 40 va 10 kg bo'lgan yuklar osilgan. Tayoq muvozanatda turishi uchun uning birinchi uchidan qanday masofada (sm) tayanch qo'yish lozim?  
A) 9 B) 10 C) 11 D) 12
- $m$  massali zarraning energiyasi  $E$  bo'lsa, kinetik energiyasi  $W$  nimaga teng?  
A)  $W = c\sqrt{p^2 + m^2c^2}$  B)  $W = p^2/2m$   
C)  $W = E + mc^2$  D)  $W = E - mc^2$
- Metallarda erkin elektronlarning tezligi  $1,1 \cdot 10^5 \text{ m/s}$  bo'lsa, uning kinetik energiyasi (J) nimaga teng?  
A)  $5 \cdot 10^{-20}$  B)  $6 \cdot 10^{20}$  C)  $5,5 \cdot 10^{-21}$   
D)  $5,5 \cdot 10^{-20}$
- Quyidagi yadro reaksiyasida qanday  $X$  zarra hosil bo'lgan?  
 ${}^{14}_7\text{N} + {}^4_2\text{He} = X + {}^{17}_8\text{O}$   
A) *geliy yadrosi* B) *proton*  
C) *vodorod yadrosi* D) *neytron*
- 25 kg toshko'mir batamom yonganda qancha issiqlik (J) ajralib chiqadi?  $q=2,7 \cdot 10^7 \text{ J/kg}$   
A)  $6,5 \cdot 10^8$  B)  $6,75 \cdot 10^8$  C)  $6 \cdot 10^8$  D)  $5 \cdot 10^8$

15. Kanalning kesimi asoslari 2 va 2,5 m balandligi esa 1 m bo'lgan trapetsiya shaklida suvning oqish tezligi 0,4 m/s bo'lsa kanaldagi suv sarfi ( $\text{m}^3/\text{s}$ ) toping.  
A) 45 B) 0,7 C) 15 D) 0,9
16. Aylanma harakat uchun dinamikaning asosiy qonuni formulasini belgilang.  
A)  $\Delta Fr = \Delta mr^2\beta$   
B)  $M \cdot \Delta t = I\vec{\omega} - I\vec{\omega}_0$   
C)  $I\omega$   
D)  $\vec{\mu} = I\vec{\beta}$
17. Yuqoriga  $a$  tezlanish bilan ko'tarilayotgan havosharidan  $t$  sekunddan so'ng bir buyum tushib ketdi. Bu buyum qancha vaqtda yerga tushadi?  
A)  $\frac{t}{g}(a + \sqrt{a^2 + ga})$   
B)  $\frac{t}{g}(a - \sqrt{a^2 + ga})$   
C)  $\frac{t}{g}(2a + \sqrt{a^2 + ga})$   
D)  $\frac{t}{g}(2a + \sqrt{a^2 - ga})$
18. 220 V kuchlanishga mo'ljallangan 180 W quvvatli televizorga qo'yilgan eruvchan saqlagichga 1 A deb yozib qo'yilgan. Bu saqlagich kun bo'yi qancha kuchlanishga (V) bardosh beradi?  
A) 260,8 B) 240 C) 230 D) 268,8
19. Bosim 100 Pa, molekullari konsentratsiyasi  $10^{25} \text{ m}^{-3}$  bo'lganda gazning temperaturasi (K) toping.  
A) 500 B) 800 C) 725 D) 650
20. Mikroskop linzalarining fokus masofalari mos ravishda 1,5 sm va 2,5 sm, linzalar orasidagi masofa 30 sm. Bunday mikroskop obyektini necha marta kattalashtirib ko'rsatadi?  
A) 100 B) 300 C) 400 D) 200
21. Normal sharoitda bitta gaz molekulasilgarilama harakatining o'rtacha kinetik energiyasini (J) hisoblang.  
A)  $7,54 \cdot 10^{-21}$  B)  $7,54 \cdot 10^{-20}$  C)  $5,7 \cdot 10^{-20}$   
D)  $5,74 \cdot 10^{-21}$
22. Massasi va radiusi 2 marta katta bo'lgan sayyoraga Yerdagiga nisbatan raketani uchirish uchun qanday birinchi kosmik tezlik (km/s) kerak?  $v_{Yer} = 8 \text{ km/s}$  - yerdagi birinchi kosmik tezlik.  
A) 8 B) 16 C) 4 D)  $8\sqrt{2}$
23. Hajmi  $6 \times 4 \times 3 \text{ m}^3$ , bosimi  $0,9 \cdot 10^5 \text{ Pa}$ , temperaturasi 293 K bo'lgan xonadagi havoning massasini (kg) aniqlang.  
A) 77,3 B) 83,9 C) 79 D) 70
24. Ko'ndalang kesim yuzasi  $16 \text{ mm}^2$ , tok tashuvchi elektronlarining konsentratsiyasi  $2 \cdot 10^{22} \text{ sm}^{-3}$  va tartibli harakat tezligi 0,01 mm/s ga teng bo'lgan o'tkazgichning ko'ndalang kesimi orqali 5 minutda o'tgan elektronlar sonini toping.  
A)  $2 \cdot 10^{19}$  B)  $2,4 \cdot 10^{20}$  C)  $3,2 \cdot 10^{20}$   
D)  $9,6 \cdot 10^{20}$
25. Motorning quvvati 2,94 kW, FIK 0,7 bo'lsa, 20 m chuqurlikdan 2 soat vaqt davomida qancha suv (kg) chiqarish mumkin?  $g = 10 \text{ m/s}^2$   
A) 102000 B) 74000 C) 120000 D) 62000
26. Bikrligi 250 N/m bo'lgan prujinaga bog'lab qo'yilganda 16 s ichida 20 marta tebradigan yukning massasini (kg) toping.  $\pi^2 = 10$   
A) 16 B) 4 C) 0,4 D) 1,6
27. Qizil yorug'lik nuri ( $\lambda = 700 \text{ nm}$ ) va rentgen nuri ( $\lambda = 10^{-10} \text{ m}$ ) ning energiyalari nisbati  $\frac{E_c}{E_r}$  qanchaga teng?  
A)  $1,4 \cdot 10^{-3}$  B)  $7 \cdot 10^{-4}$  C)  $1,4 \cdot 10^{-4}$   
D)  $7 \cdot 10^{-5}$
28. Linzaning fokal tekisligi deb nimaga aytiladi?  
A) linza markazidan o'tgan tekislik  
B) linzaning fokuslaridan bosh optik o'qqa perpendikular ravishda o'tkazilgan tekislik  
C) bosh optik o'qqa parallel o'tkazilgan tekislik  
D) bosh optik o'qqa  $45^\circ$  burchak ostida o'tkazilgan tekislik
29. Temperaturasi  $40^\circ\text{C}$  ga ortganda 5 mol neon gazining ichki energiyasi (J) qanchaga o'zgaradi? Neonning nisbiy molekular massasi  $M_r = 20 \text{ g/mol}$   
A) 2004 B) 3257 C) 2755 D) 2493

30. Kichik jism elastik prujina osildi va tebranish hosil qilindi. Uning tebranish qonuni chizmadagidek ko'rishishga ega bo'lsa,  $\pi/4$  fazadagi impulsini ( $\text{kg}\cdot\text{m/s}$ ) aniqlang.



- A) 75 B) 50 C) 0 D) 5
31. Elektr dvigatelga ulangan iste'molchidan 0,5 A tok o'tmoqda, undagi kuchlanish 20 V. Dvigatel 1 soatda qancha ish (kJ) bajaradi? Dvigatelning FIK 80% ga teng.  
A) 34 B) 28,8 C) 30 D) 32,5
32. Tebranish konturidagi tebranishlar chastotasini 2 marta orttirish uchun kondensator sig'imini qanday o'zgartirish lozim?  
A) 4 marta orttirish B) 4 marta kamaytirish  
C) 9 marta orttirish D) 2 marta kamaytirish
33. Konturdagi induktivlikni 2 marta kamaytirsak, sig'imi esa 8 marta orttirsak, unda erkin tebranish chastotasi qanday o'zgaradi?  
A) 2 marta kamayadi B) 4 marta kamayadi  
C) 2 marta ortadi D) 4 marta ortadi
34. Alfa zarra ( $m=6,65\cdot 10^{-27}$  kg) elektr maydonida  $6,4\cdot 10^{11}$  m/s<sup>2</sup> tezlanish bilan harakatlanishi uchun, elektr maydon kuchlanganligi qanday bo'lishi (kV/m) kerak?  
A) 13,3 B) 26,6 C) 4,26 D) 7,87
35. Induktivligi 0,2 H bo'lgna g'altakdan 10 A tok o'tmoqda. G'altak ichidagi magnit maydon energiyasini (J) aniqlang.  
A) 100 B) 10 C) 0,1 D) 1
36. Avtomobil yo'lining birinchi yarmini 10 m/s, ikkinchi yarmini esa 15 m/s tezlik bilan o'tdi. Butun yo'l davomida o'rtacha tezlikni (m/s) toping.  
A) 25 B) 12 C) 12,5 D) 5

1. Choose the answer which correctly completes the sentence.  
He says he is feeling tired all the time, but physically the doctors can't find ... wrong with him.  
A) *nothing* B) *something* C) *any*  
D) *anything*
2. Choose the answer which correctly completes the sentence.  
As a rule, the smaller the town, ... it is to park your car.  
A) *the cheaper* B) *cheap* C) *cheaper*  
D) *the cheapest*
3. Choose the answer which correctly completes the sentence.  
My brother is very stubborn. I tell him to stop acting ... a child.  
A) *such* B) *so* C) *like* D) *as*
4. Choose the answer which correctly complete the sentence.  
I quite agree with you that going ... air is the quickest means of transport.  
A) *in* B) *on* C) *by* D) *with*
5. Choose the answer which correctly completes the sentence.  
I wish I ... everything to you yesterday.  
A) *could explain* B) *could have explained*  
C) *explained* D) *have explained*
6. Choose the answer which correctly completes the sentence.  
Technically, glass is a mineral and ... .  
A) *so water is* B) *is water so* C) *water is so*  
D) *so is water*
7. Choose the answer which correctly completes the sentence.  
Be careful! You ... hit that car!  
A) *should* B) *have* C) *are going to*  
D) *would*
8. Choose the answer which correctly completes the sentence.  
Don't worry about your birthday. We'll have everything ... by then.  
A) *arranged* B) *to arrange* C) *arrange*  
D) *arranging*



9. Choose the answer which correctly complete the sentence.  
This car is the ... model and much better than the previous one.  
A) *later* B) *latest* C) *last* D) *latter*
10. Choose the answer which correctly completes the sentence.  
At the party I really enjoyed ... your friends.  
A) *meet* B) *met* C) *to meet* D) *meeting*
11. Choose the answer which correctly completes the sentence.  
The ground was ... last year.  
A) *dig* B) *digging* C) *dug* D) *dogged*
12. Choose the answer which correctly completes the sentence.  
I would go out more often if I ... to work so much.  
A) *hadn't* B) *wouldn't have* C) *didn't have* D) *don't have*
13. Choose the answer which correctly completes the sentence.  
Ann asked Helen: "Where does your friend work?"  
Ann asked Helen where...  
A) *her friend was working*  
B) *did your friend work* C) *her friend worked*  
D) *her friend had worked*
14. Choose the answer which correctly completes the sentence.  
The police found the money which ... from the bank.  
A) *had been stolen* B) *were stolen*  
C) *was stealing* D) *stolen*
15. Choose the answer which correctly complete the sentence.  
My feet are killing me. I ... to standing in queues for long periods of time.  
A) *don't use* B) *used not* C) *didn't use*  
D) *am not used*
16. Choose the answer which correctly complete the sentence.  
Most students in Britain ... pay at least part of their university fees.  
A) *may* B) *can* C) *ought* D) *have to*
17. Choose the answer which correctly completes the sentence.  
The capital of the Netherlands is ... Hague.  
A) *a* B) *-* C) *an* D) *the*
18. Choose the answer which correctly completes the sentence.  
If you don't get better I'll take you to ... hospital.  
A) *an* B) *a* C) *the* D) *-*
19. Choose the answer which correctly completes the sentence.  
We were very tired when we got to the top of the mountain. We ... a long distance.  
A) *walked* B) *have walked* C) *had walked*  
D) *was walking*
20. Choose the answer which correctly complete the sentence.  
I am fond of ... for walks in bad weather.  
A) *have gone* B) *going* C) *went* D) *to go*
21. Choose the answer which correctly complete the sentence.  
Sarah wished she ... late for the meeting.  
A) *isn't* B) *weren't* C) *hadn't been*  
D) *hasn't been*
22. Choose the answer which correctly completes the sentence.  
How can he phone her ... he remember her number?  
A) *despite* B) *unless* C) *in case* D) *if*

23. Choose the answer which correctly complete the sentence.

Everyone in the village participated ... searching the lost child.

- A) *in* B) *to* C) *with* D) *for*

Read the text. Then choose the correct answer to question 24-26.

In the past, before technology was used to monitor the weather accurately, people looked at the skies, watched how animals and plants behaved, and relied on signs and superstitions to forecast the weather. Indeed, some people still believe that, when cows lie down or a cat sneezes, it is going to rain. Nowadays, scientists who study the weather, called meteorologists, use many different methods to make their forecasts. Satellites monitor our weather and send information to computers at special processing stations. On the ground, weather stations all over the world record wind speeds and directions, temperature, clouds and air pressure.

24. It is clear from the passage that reasonably accurate weather forecasting ...
- A) *does not require much technological assistance.*  
 B) *is now available worldwide.*  
 C) *is of little importance to most people in the world.*  
 D) *is just one stage in an effort to control the climate.*
25. As is pointed out in the passage, before the coming of technology, ...
- A) *several methods were used in an effort to forecast the weather.*  
 B) *people weren't really interested in weather conditions.*  
 C) *the methods used to forecast the weather are all now regarded as completely useless.*  
 D) *the only way to learn about the weather was through the behaviour of plants and animals.*

26. According to the passage, it is now possible, with the aid of technology, to forecast the weather, but ...

- A) *long-term forecasts are still far from accurate.*  
 B) *it is still a very complex process.*  
 C) *much relevant material is never processed.*  
 D) *changing wind speeds can affect predictions.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Many famous people did not enjoy (27)... success in their early lives. Walt Disney, who was the creator of Mickey Mouse and the founder of his own movie production company, once was fired by a newspaper editor because he had (28)... good ideas.

- 27.
- A) *imitate* B) *immediately* C) *immediate*  
 D) *immediacy*

- 28.
- A) *nothing* B) *any* C) *no* D) *none*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

One of the earliest methods of home heating, the fireplace continues (29) ... popular today. Ancient fireplaces were usually central pits in the house that also served as stoves, light sources, and (30) ... from wild animals. Modern fireplaces are sometimes valued more (31) ... their appearance than their actual heating capacities.

- 29.
- A) *been* B) *is* C) *was* D) *to be*

- 30.
- A) *comfort* B) *benefit* C) *protection*  
 D) *challenge*

31. A) *at* B) *for* C) *after* D) *on*

Read the text. Then choose the correct answer to question 32-33.

On the day of my first piano concert, I became more and more nervous. To help me calm down, my piano teacher told me to place several cabbages in the room where I practiced. I was so eager to get over my nerves that I was willing to try anything. For the next few hours, I played to an audience of cabbages. When the time of the concert came, I was still terribly nervous. My hands felt like ice.

When I finally walked across the stage, I looked out into the dark audience, but I couldn't see anyone. I tried to imagine that all the people sitting in the hall just as well might be cabbages.

As I sat down to play, my hands relaxed and I played all my pieces without a mistake. The concert was a success.

32. The pianist stopped feeling nervous. . .
- A) *when he found he couldn't see the audience*  
 B) *because he had practiced a lot*  
 C) *when the audience began to applaud*  
 D) *as soon as the concert was over*

33. On the day of the concert the teacher . . .
- A) *couldn't think of a way helping the pianist to stay calm*  
 B) *advised him to put cabbages in the room where he practiced*  
 C) *advised him to eat a little cabbage*  
 D) *felt nearly as nervous as the pianist*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?
- A) *Mars is larger than Earth*  
 B) *Martian soil is rocky*  
 C) *Mars has two moons*  
 D) *It takes longer for Mars to circle the Sun than it takes Earth*

35. Man-made canals were supposedly discovered by ...
- A) *Phobos*    B) *Viking I*    C) *Martian*
  - D) *Schiaparelli*
36. Mars has been nicknamed as ...
- A) *Deimos*    B) *The Red Planet*    C) *Martian*
  - D) *Viking I*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000048**

Toshkent – 2014

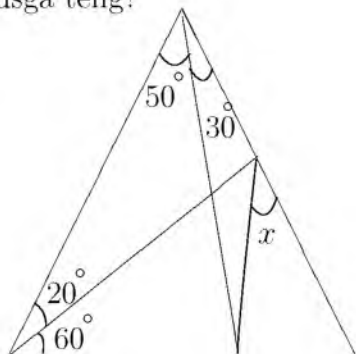
**MATEMATIKA (INFORMATIKA BILAN)**

1.  $m$  dan katta bo'lmagan juft natural sonlarning yig'indisi  $x$ ,  $m$  dan katta bo'lmagan, lekin 10 dan katta bo'lgan juft sonlarning yig'indisi  $y$  hamda  $x + y = 810$  bo'lsa,  $m$  ning barcha qiymatlari yig'indisini toping.  
A) 210 B) 420 C) 81 D) 83
2. To'g'ri burchakli trapetsiyaning diagonalini uning yon tomoniga teng. Agar bu trapetsiyaning balandligi 2 ga, yon tomoni esa 4 ga teng bo'lsa, uning o'rta chizig'i uzunligini toping.  
A)  $6\sqrt{2}$  B)  $3\sqrt{2}$  C)  $5\sqrt{3}$  D)  $3\sqrt{3}$
3.  $3^{-x} = \sqrt{x}$  tenglamaning eng kichik butun yechimini toping.  
A) 2 B) 0 C) 1 D)  $\emptyset$
4.  $x(x+1)(x-1)(x+2) = 24$  tenglamani yeching.  
A)  $x_1 = -3; x_2 = 2$  B)  $x_1 = 0; x_2 = 1$   
C)  $x_1 = -1; x_2 = -2$  D)  $x_1 = x_2 = 1$
5.  $\frac{(2p-q)^2 + 2q^2 - 3pq}{2p^{-1} + q^2}; \frac{4p^2 - 3pq}{2 + pq^2}$  ifodani soddalashtiring va uning son qiymatini toping.  
 $p=0,78, q=7/25$   
A) 0,5 B) 1 C) -1 D) 0,25
6.  $f\left(\frac{3x-1}{x+2}\right) = \frac{x+1}{x-1}$  bo'lsa,  $f(x)$  ni toping.  
A)  $\frac{x+4}{3x-2}$  B)  $\frac{2x+1}{3-x}$  C)  $\frac{3x-1}{x+2}$   
D)  $\frac{x+1}{x-1}$
7. To'rtburchakli muntazam prizma asosining yuzi  $144 \text{ sm}^2$ , balandligi 14 sm. Prizma diagonalini (sm) toping.  
A) 12 B) 21 C) 22 D) 20
8.  $f(x) = \sin 2x + 4x, f'(x) = ?$   
A)  $\cos x + 4$  B)  $2\cos 2x + 4$  C)  $\cos 2x + 4x$   
D)  $-\cos 2x + 4$
9.  $\frac{712^2 - 289}{695}$  ni hisoblang.  
A) 765 B) 695 C) 725 D) 729
10.  $\vec{a}(1; -2; 2)$  va  $\vec{b}(2; -2; -1)$  vektorlar berilgan bo'lsa,  $2\vec{a}^2 - 4(\vec{a}\vec{b}) + 5\vec{b}^2$  ifodaning qiymatni toping.  
A) 44 B) 46 C) 47 D) 45
11. Asosidagi burchaklari  $60^\circ$  va  $30^\circ$  bo'lgan trapetsiyaga radiusi  $3\sqrt{3}$  bo'lgan doira ichki chizilgan. Trapetsiyaning perimetrini toping.  
A)  $3\sqrt{3}$  B)  $2\sqrt{2}$  C)  $24(1+\sqrt{3})$  D) 8
12. Umumiy bahosi 225 dinor bo'lgan ikki xil qimmatbaho mo'ynali teri xalqaro bozorda 40% foydasi bilan sotildi. Agar birinchi xil teridan 25%, ikkinchisidan 50% foyda qilingan bo'lsa, har bir terining bahosi necha dinor bo'lgan?  
A) 90; 135 B) 100; 125 C) 80; 145  
D) 200; 25
13. Uchta butun son tashkil etgan arifmetik progressiyada birinchi hadi 1 ga teng. Agar ikkinchi hadga 3 qo'shilsa, uchinchi kvadratga ko'tarilsa, geometrik progressiya hosil bo'ladi. Uchinchi sonni toping.  
A) 7 B) 8 C) 6 D) 9
14. Muntazam o'n burchakka tashqi chizilgan aylana radiusi  $\frac{2}{\sin 18^\circ}$  ga teng bo'lsa, uning tomonini toping.  
A) 4 B) 3 C) 6 D) 2
15.  $f(x) = 8x^3 - 6x^2 + 7$  funksiyaning  $M(1; 0)$  nuqtadan o'tuvchi boshlang'ich funksiyasini toping.  
A)  $4x^4 - 2x^3 + 7x - 6$  B)  $4x^4 - 2x^3 + 7x - 9$   
C)  $4x^4 - 2x^3 + 7x - 7$  D)  $2x^4 - 2x^3 + 7x - 7$
16.  $\log_2 3 + 2\log_4 x = \sqrt[3]{x^{\log_9 16}}$  tenglamani yeching.  
A) 16 B)  $\frac{16}{3}$  C) 12 D)  $\log_3 4$
17. Radiuslari 2 va 3 ga teng bo'lgan aylanalar bir-biriga tashqi ravishda urinadi. Ularning ikkalasi uchinchi aylanaga ichki ravishda urinsa va markazlari bitta to'g'ri chiziqda yotsa, tashqi aylananing ichki ayanalardan bo'sh qolgan sohasi yuzini toping.  
A)  $9\pi$  B)  $12\pi$  C)  $4\pi$  D)  $6\pi$
18. Agar  $xy + yz + zx = 16$  bo'lsa,  $(x + y + z)^2$  ifoda teng bo'lishi mumkin bo'lgan eng kichik qiymatni toping.  
A) 32 B) 16 C) 48 D) 64
19.  $y = \arcsin \frac{x-3}{2} - \lg(4-x)$  funksiyaning aniqlanish sohasini toping.  
A) [1; 4] B) [1; 5] C) (1; 4) D) [1; 4]

20. Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.

- A) 30 B) 10 C) 15 D) 20

21. Quyidagi rasmda berilganlarga ko'ra  $x$  necha gradusga teng?



- A) 45 B) 50 C) 30 D) 40

22. Qavariq ko'pburchakning bir uchidan chiqqan diagonallari soni 47 ta. Bu ko'pburchakning nechta tomoni bor?

- A) 49 B) 51 C) 48 D) 50

23. Agar  $\frac{3^x + 9^x + 18^x}{2^x + 6^x + 12^x} = \frac{24}{81}$  bo'lsa,  $x$  ni toping.

- A) -3 B) -2 C) -4 D) -5

24.  $\sin x = [x]$  tenglamani yeching. (Bu yerda  $[x]$  — butun qism.)

A)  $0, \frac{\pi}{2}, \pi$

B)  $x = \pi k; x = \frac{\pi}{2} + \pi k; k \in Z$

C)  $\emptyset$

D)  $0$  va  $\frac{\pi}{2}$

25.  $||x - 4| - 7| > 5$  tengsizlikning eng kichik musbat va eng katta manfiy butun yechimlari ayirmasini toping.

- A) -12 B) 6 C) -6 D) 12

26.  $a = \sqrt{5} + \sqrt{6}$ ,  $b = \sqrt{3} + \sqrt{8}$ ,  $c = 2 + \sqrt{7}$  sonlarni o'sish tartibida joylashtiring.

- A)  $a < b < c$  B)  $b < c < a$  C)  $b < a < c$   
D)  $c < b < a$

27.  $n \in N$  va  $\frac{1}{2} + \frac{1}{3} + \frac{1}{7} + \frac{1}{n}$  yig'indi butun son bo'lsa, quyidagilardan qaysi biri noto'g'ri?

- A)  $n$  soni 6 ga bo'linadi  
B)  $n$  soni 2 ga bo'linadi C)  $n > 84$   
D)  $n$  soni 3 ga bo'linadi

28. Tekislikdan  $h$  uzoqlikda joylashgan nuqtadan tekislikka o'tkazilgan va tekislik bilan  $30^\circ$  li burchak hosil qiladigan og'maning uzunligini toping.

- A)  $\sqrt{3}h$  B)  $\sqrt{2}h$  C)  $1,5h$  D)  $2h$

29. Sotuvchi kilosi 1500 so'mdan 100 kg olma sotib oldi. 20 kg maydaroq olmalarni sotuvchi 1750 so'mdan, qolganlarini 2000 so'mdan sotdi. Bu tijoratda sotuvchi necha foiz foyda qilgan?

- A) 30 B) 27 C) 25 D) 35

30.  $x^2 + y^2 + 8x - 2y - 8 = 0$  aylana va  $x + y = 4$  to'g'ri chiziqning kesishish nuqtalarini toping.

- A) (4; 9), (-5; 1) B) (2; 1), (-2; 1)  
C) (0; 4), (-1; 5) D) (3; 2), (5; -1)

31. "Mantiq insonga shunday bir qoida beradiki, bu qoida yordamida xulosa chiqarishda xatolardan saqlanadi". Ushbu fikr kimga tegishli?

- A) Abu Nasr Farobiy B) Alisher Navoiy  
C) Kamoliddin Behzod D) Abu Ali Ibn Sino

32. Amal va o'tkazish natijasini aniqlang.

$$63_8 + 21_8 \rightarrow x_2$$

- A)  $1000100_2$  B)  $1010100_2$  C)  $1011000_2$   
D)  $1011001_2$

33. MS Word dasturi kompyuterda ishlayotgan bo'lsa, u holda ...

- A) MS Word dasturi boshqa kompyuterdan ko'chirib o'tkazilgan  
B) MS Office paketi installyatsiya qilingan  
C) MS Office paketi deinstallyatsiya qilingan  
D) MS Office paketi ko'chirib o'tkazilgan

34. MS Excel 2003 da berilgan shartni qanoatlantiruvchi satrlarni ajratib olish amali qanday ataladi?

- A) filtrlash B) tartiblash C) avtofiltr  
D) hisobga olish

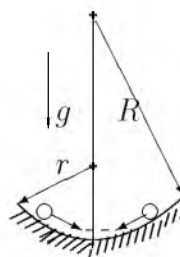
35. Nuqtalar o'rniga kerakli iborani tanlang:  
Foydalanuvchi elektron pochta qutisini  
Internetga ulangan ... ocha oladi.  
A) faqat o'z kompyuterida  
B) faqat shu pochta ochilgan kompyuterda  
C) ixtiyoriy kompyuterda  
D) faqat server kompyuterda
36. Paskal dasturi lavhasidagi S ning qiymati  
nimaga teng?  
begin S:=0; for I:=1 to 3 do S:=S+2\*i;  
writeln(S); end.  
A) 24 B) 48 C) 96 D) 12

### FIZIKA

1. Massasi 50 kg bo'lgan bola Oy sirtida turibdi  
deylik. U Oyga qanday kuch (N) bilan  
tortiladi?  $g=1,6 \text{ m/s}^2$   
A) 16 B) 80 C) 500 D) 50
2. Vakuimli diodning to'yinish toki 32 mA ga  
teng bo'lganda, katoddan 2 s ichida nechta  
elektron ajralib chiqadi?  
A)  $2 \cdot 10^{16}$  B)  $4 \cdot 10^{17}$  C)  $4 \cdot 10^{16}$  D)  $2 \cdot 10^{17}$
3. Tinch holatidan boshlab tekis tezlanuvchan  
harakat qilayotgan jismning 10- sekundda bosib  
o'tgan yo'li 5- sekundda bosib o'tgan yo'lidan  
necha marta farq qiladi?  
A) 19/7 B) 19/5 C) 4 D) 19/9
4. Massasi 1 kg jism qanday balandlikdan (m)  
tushayotganda 4-sekund oxirida potensial va  
kinetik energiyalari  $E_{pa}=450 \text{ J}$ ;  $E_{ka}=800 \text{ J}$  ga  
teng bo'ladi;  $g=10 \text{ m/s}^2$ .  
A) 1250 B) 125 C) 125 000 D) 12,5
5. Quyidagi tushunchalardan noto'g'rlarini  
ko'rsating.  
1) vaqt birligida tezlikning o'zgarishi tezlanish  
deyiladi;  
2) harakatning boshlang'ich va oxirgi nuqtasini  
birlashtiruvchi kesma ko'chish deyiladi;  
3) harakatning o'rtacha tezligi o'rtacha  
arifmetik qiymatidan katta  
A) 1, 2 B) 2 C) 2, 3 D) 3
6. 800 W quvvatli elektr choynakda  $20^\circ\text{C}$   
temperaturali 1,5 l suvni 20 min da qaynatish  
mumkin. Choynakning FIK ni (%) aniqlang.  
Suvning solishtirma issiqlik sig'imi  
 $C = 4200 \frac{\text{J}}{\text{kg} \cdot \text{K}}$   
A) 52 B) 5,2 C) 50 D) 72
7. Tomonlari 0,5 m bo'lgan yog'och kub ko'lda 2/3  
qismi botgan holda suzib yuribdi. Shu kubni  
suvga to'liq botirish uchun qanday minimal ish  
(J) bajarish kerak?  
A) 34 B) 74 C) 54 D) 68
8. 12 V kuchlanish tarmog'iga qarshiligi 20  $\Omega$  va  
40  $\Omega$  ga teng bo'lgan rezistorlar ketma-ket  
ulandi. Ikkinchi rezistorning uchlaridagi  
potensiallar farqini (V) toping.  
A) 9 B) 6 C) 4 D) 8
9. Massasi 11 t bo'lgan trolleybus 36 km/soat  
tezlik bilan harakatlanmoqda. Agar kuchlanish  
550 V va FIK 80% bo'lsa, dvigatel  
chulg'amidagi tok kuchini (A) toping.  
Harakatlanishga qarshilik koeffitsiyenti 0,02 ga  
teng.  
A) 25 B) 35 C) 45 D) 50
10. Tebranish konturida sig'imi 80 pF bo'lgan  
kondensator va induktivligi 20  $\mu\text{H}$  g'altak bor.  
Konturning xususiy tebranishlari davri ( $\mu\text{s}$ )  
qanday?  
A) 0,50 B) 0,20 C) 0,25 D) 0,45
11. Konturdagi induktivlikni 2 marta kamaytirsak,  
sig'imi esa 8 marta orttirsak, unda erkin  
tebranish chastotasi qanday o'zgaradi?  
A) 4 marta ortadi B) 4 marta kamayadi  
C) 2 marta ortadi D) 2 marta kamayadi
12. Malus qonuni ifodalovchi formulani ko'rsating.  
A)  $I = I_0 \cos^2 \alpha$  B)  $I = I_0 \cos \alpha$   
C)  $I = I_0 + I \cos \alpha$  D)  $I = I_0 \sin \alpha$
13. Chaqmoq chaqgandan so'ng 6 s o'tgach  
momoqaldirroq gumburladi, yashin razradi  
kuzatuvchidan qanday masofada (km) bo'lgan?  
A) 56 B) 256 C) 2 D) 45



14. 3 kg massali 15 m/s tezlik bilan harakatlanayotgan aravacha unga qarama-qarshi yo'nalishda xuddi shunday tezlikda harakatlanayotgan 1 kg massali aravachaga urilib, unga yopishib qoldi. Ularning birgalikdagi tezligini (m/s) toping.  
A) 15 B) 13,2 C) 5 D) 7,5
15. Qanday sharoitda sochuvchi linzaning optik kuchi musbat bo'la oladi?  $n_1$  - atrof muhitning optik zichligi,  $n_2$  - linza yasalgan moddaning optik zichligi.  
A)  $n_1 > n_2$   
B)  $n_1 < n_2$   
C) sochuvchi linzaning optik zichligi musbat bo'la olmaydi  
D)  $n_1 = n_2$
16. Yorug'lik suvda qanday tezlik (m/s) bilan tarqaladi?  $n_{suv}=1,33$   
A) 00000 B)  $2,25 \cdot 10^8$  C)  $2,20 \cdot 10^8$   
D)  $3 \cdot 10^8$
17. Tezligi  $1,9 \cdot 10^7$  m/s bo'lgan  $\alpha$ -zarra oltin atomi yadrosi yo'nalishida harakatlanib, yadroga qanday eng kichik masofagacha (m) yaqinlashishi mumkin?  $\alpha$ -zarraning massasi  $6,6 \cdot 10^{-27}$  kg, zaryadi  $1,3 \cdot 10^{-17}$  Kl.  
A)  $3,8 \cdot 10^{-14}$  B)  $3,1 \cdot 10^{-14}$  C)  $4,9 \cdot 10^{-14}$   
D)  $4 \cdot 10^{-14}$
18. Isitgich elektr choynakda boshlang'ich temperaturasi  $10^\circ\text{C}$  bo'lgan 2 kg massali suvni quvvati 1 kVt bo'lgan. Elektr choynakning FIK 90%. Agar kuchlanish 220 V bo'lsa, isitgich elementining elektr spiralidagi tok kuchi (A) qanday bo'ladi?  
A) 450 B) 4500 C) 45 D) 4,5
19. Ideal gazning harorati 4 marta orttirilib, hajmi 2 marta kamaytirilsa, bosim qanday o'zgaradi?  
A) 8 marta ortadi B) 2 marta ortadi  
C) 4 marta ortadi D) 2 marta kamayadi
20. Natriy sariq nurlarining havodagi to'lqin uzunligi  $589 \mu\text{m}$ . Shu nurning shishadagi to'lqin uzunligini (m) toping. Shishaning sindirish ko'rsatkichi 1,56 ga teng.  
A)  $5 \cdot 10^{-7}$  B)  $3,9 \cdot 10^{-7}$  C)  $3,78 \cdot 10^{-7}$   
D)  $34 \cdot 10^{-7}$
21. Alfa zarra ( $m=6,65 \cdot 10^{-27}$  kg) elektr maydonida  $6,4 \cdot 10^{11}$  m/s<sup>2</sup> tezlanish bilan harakatlanishi uchun, elektr maydon kuchlanganligi qanday bo'lishi (kV/m) kerak?  
A) 26,6 B) 13,3 C) 4,26 D) 7,87
22. Agar og'irligi 7,8 N bo'lgan metall parchasining suvdagi og'irligi 6,8 N ga, benzindagi og'irligi 7,1 N ga teng bo'lsa, benzinning zichligi (kg/m<sup>3</sup>) qanday?  
A) 800 B) 700 C) 7000 D) 680
23. Gorizontall ravishda aylanayotgan disk ustida, disk o'qidan 1 m masofada 1 m/s chiziqli tezlik bilan aylanayotgan jism ishqalanish koeffitsiyenti qanday bo'lganda joyidan qo'zg'ala boshlaydi?  
A) 0,1 B) 0,01 C) 0,2 D) 0,05
24. Ko'ndalang kesim yuzasi  $20 \text{ mm}^2$ , tok tashuvchi elektronlarining konsentratsiyasi  $2 \cdot 10^{22} \text{ sm}^{-3}$  va tartibli harakat tezligi 0,01 mm/s ga teng bo'lgan o'tkazgichning ko'ndalang kesimi orqali 5 minutda o'tgan elektronlar sonini toping.  
A)  $1,2 \cdot 10^{21}$  B)  $2,2 \cdot 10^{21}$  C)  $2 \cdot 10^{20}$   
D)  $4 \cdot 10^{21}$
25. Sharcha nov ichida kuchsiz tebranmoqda. Novning bir yoni  $r$  egrilikka, ikkinchi yoni  $R$  egrilikka ega. Tebranishlarning chap va o'ng tomondagi amplitudalari nisbatini aniqlang.



A)  $\frac{r}{R}$  B)  $\frac{R-r}{R+r}$  C)  $\frac{r^2}{R^2}$  D)  $\sqrt{\frac{r}{R}}$

26. Ikkita proton qarama-qarshi yo'nalishda harakatlanmoqda. Ular o'rtasida mavjud bo'luvchi barcha ta'sir kuchlarini aniqlang. 1 - elektr tortishish; 2 - elektr itarishish; 3 - magnit tortishish; 4 - magnit itarishish; 5 - gravitasion tortishish  
A) 2, 4, 5 B) 1, 3, 5 C) 2, 3, 5 D) 1, 4, 5

27. Agar prujinani 0,01 m siqish uchun 10 N kuch kerak bo'lsa 0,08 m ga siqish uchun ketgan kuchning ishini (J) toping.  
A) 0,8 B) 3,2 C) 1,6 D) 6,4
28. Elektron  $E_1$  energiyali satqdan  $E_2$  energiyali sathga o'tgandan keyin nurlangan kvant energiyasining to'liq uzunligi  $\lambda$  topilsin.  
A)  $\frac{E_1 - E_2}{hc}$  B)  $\frac{hc}{E_2 - E_1}$  C)  $\frac{h}{E_1 - E_2}$   
D)  $\frac{h\nu}{E_1 - E_2}$
29. Normal sharoitda bitta gaz molekulasi ilgariharakati harakatining o'rtacha kinetik energiyasini (J) hisoblang.  
A)  $5,7 \cdot 10^{-20}$  B)  $5,74 \cdot 10^{-21}$  C)  $7,54 \cdot 10^{-21}$   
D)  $7,54 \cdot 10^{-20}$
30. Sig'imi 20 l bo'lgan ballondagi 2 kg massali havoning  $-13^\circ\text{C}$  haroratdagi bosimi (MPa) qancha? Havoning molyar massasi 29 g/mol.  
A) 7 B) 74,5 C) 10 D) 7,45
31. Ikki idish ideal gaz bilan to'ldirilib, kran bilan birlashtirilgan. Birinchi idishdagi molekullarni o'rtacha kvadratik tezligi  $\bar{v}_1$ , ikkinchisidagi -  $\bar{v}_2$ . Birinchi idishdagi molekullar soni  $n$  marta ortiq bo'lsa, kran ochib yuborilganidan so'ng molekullar o'rtacha kvadratik tezligi qanday bo'ladi?  
A)  $\sqrt{\frac{\bar{v}_1^2 + n\bar{v}_2^2}{n+1}}$   
B)  $\sqrt{\frac{n\bar{v}_1^2 + \bar{v}_2^2}{n+1}}$   
C)  $\sqrt{\frac{\bar{v}_1^2 + n\bar{v}_2^2}{n}}$   
D)  $\sqrt{\frac{n\bar{v}_1^2 + \bar{v}_2^2}{n}}$
32. Massasi 5000 t bo'lgan poyezd 36 km/soat tezlik bilan harakatlanmoqda. Agar tormozlanish kuchi 0,25 MN ga teng bo'lsa, tormozlangandan keyin bir minut ichida poyezd qancha masofani (m) o'tadi?  
A) 5000 B) 51 C) 510 D) 5100
33. Lorens kuchi ifadasining to'g'ri javob yozilgan variantini tanlang.  
A)  $F = qE$  B)  $F = IB\sin\alpha$  C)  $F = \frac{mv^2}{R}$   
D)  $F = qvB\sin\alpha$
34. Ikki kosmik kema  $v_1 = v_2 = 0,75c$  tezlik bilan qarama-qarshi yo'nalishda harakatlanmoqda. Birining 2-siga nisbatan tezligi qanday?  
A)  $0,96c$  B)  $0,86c$  C)  $c$  D)  $0,9c$
35. Radiusi 2 sm bo'lgan po'lat sharning massasini (kg) toping. Po'latning zichligi  $7,8 \text{ g/cm}^3$ .  
A) 0,26 B) 6,2 C) 2,6 D) 62,4
36. 40 l  $10^\circ\text{C}$  li suvga 20 l  $40^\circ\text{C}$  li suv aralashtirildi. Aralashmaning haroratini ( $^\circ\text{C}$ ) toping.  
A) 24 B) 28 C) 22 D) 20

### INGLIZ TILI

- Choose the answer which correctly completes the sentence.  
Dad, I have nothing to wear. The jeans you bought me ... fit me.  
A) *isn't* B) *don't* C) *doesn't* D) *aren't*
- Choose the answer which correctly completes the sentence.  
"Why is the bus late?"  
Can you tell me why ... late.  
A) *the bus was* B) *the bus is*  
C) *was the bus* D) *is the bus*
- Choose the answer which correctly complete the sentence.  
Helen is ... a busy person that she never feels bored.  
A) *as* B) *so* C) *such* D) *so as*
- Choose the answer which correctly completes the sentence.  
Did you tell him the news? He hadn't heard the news, ...?  
A) *had he heard* B) *hadn't he* C) *he had*  
D) *had he*
- Choose the answer which correctly completes the sentence.  
I would go out more often if I ... to work so much.  
A) *don't have* B) *hadn't* C) *didn't have*  
D) *wouldn't have*

6. Choose the answer which correctly completes the sentence.  
I always stay at this hotel because it is the only one with facilities for ... disabled.  
A) *an* B) *the* C) - D) *a*
7. Choose the answer which correctly completes the sentence.  
I know the man ... bicycle was stolen when he left it near a shop.  
A) *whose* B) *which* C) *that* D) *who*
8. Choose the answer which correctly complete the sentence.  
The Olympic Games began more than two thousand years ago. At that time, only Greek men ... to compete.  
A) *were allowing* B) *was allowed*  
C) *allowed* D) *were allowed*
9. Choose the answer which correctly completes the sentence.  
Nora asked Bill: "Where did you hide my purse?"  
Nora asked Bill where ... her purse.  
A) *he had hidden* B) *did he hide*  
C) *he hide* D) *he hid*
10. Choose the answer which correctly completes the sentence.  
The course is very popular, but we are only able to accept twenty of the ... people.  
A) *to apply* B) *apply* C) *applying*  
D) *application*
11. Choose the answer which correctly complete the sentence.  
We have just heard on TV that, hurricane Jefferey ... hit the Caribbean, causing widespread damage in Puerto Rico.  
A) *have* B) *was* C) - D) *has*
12. Choose the answer which correctly completes the sentence.  
Alf ... as a waiter for ten years, then he opened his own company.  
A) *worked* B) *works* C) *has worked*  
D) *has been working*
13. Choose the answer which correctly complete the sentence.  
The secretary said that she ... a reservation for me at the hotel.  
A) *will make* B) *has made* C) *made*  
D) *had made*
14. Choose the answer which correctly completes the sentence.  
The price for that painting was very reasonable; I would gladly have paid ... he asked.  
A) *three times more than*  
B) *three times as much as*  
C) *as three-times than* D) *three times more*
15. Choose the answer which correctly completes the sentence.  
We congratulated Simon ... the success of his first book.  
A) *from* B) *for* C) *with* D) *on*
16. Choose the answer which correctly complete the sentence.  
I've got three new dresses: a red one and two black dresses. I think I'll wear ... red one.  
A) *some* B) - C) *a* D) *the*
17. Choose the answer which correctly completes the sentence.  
George's father gives him enough money to go to school, so he ... work.  
A) *doesn't have to* B) *didn't have to*  
C) *ought not to* D) *has to*
18. Choose the answer which correctly completes the sentence.  
The best time to go shopping is in the morning ... shops are not busy then.  
A) *which* B) *that* C) *when* D) *what*
19. Choose the answer which correctly completes the sentence.  
A telephone recorder tells callers what time ..., so you needn't go specially to find out the time.  
A) *does the movie start* B) *start the movie*  
C) *starts the movie* D) *the movie starts*
20. Choose the answer which correctly completes the sentence.  
Nancy used ... a bike to work, but now she drives.  
A) *riding* B) *ride* C) *to be ridden*  
D) *to ride*

21. Choose the answer which correctly completes the sentence.  
She would have recognised him if she ... him before.  
A) *had seen* B) *see* C) *saw* D) *would see*

22. Choose the answer which correctly completes the sentence.  
"Arm" and "dog" are ... words. Each word has three letters said Tony.  
A) *three letter* B) *three letters*  
C) *a three letter* D) *threes letters*

23. Choose the answer which correctly completes the sentence.  
Just a minute! Do you hear someone ... for help? Shall we call the police?  
A) *calling* B) *to call* C) *called*  
D) *will call*

Read the text. Then choose the correct answer to question 24-26.

One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.

24. The passage tells us that the shrew ...  
A) *has a very short life span.*  
B) *is similar to a mouse in appearance*  
C) *is in the habit of eating every two hours.*  
D) *lives in dense forests.*

25. The passage states that shrews ...  
A) *eat each other when they can't find any food.*  
B) *eat rarely but in large amounts at a time.*  
C) *are found in huge numbers in Australia.*  
D) *are the smallest living mammals.*

26. From what is stated in the passage, we can infer that a shrewish woman is someone who ...  
A) *easily gets annoyed.*  
B) *has tiny eyes and ears.*  
C) *is noticeably smaller than the average.*  
D) *is very fond of velvet and fur.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Although they were described as the (27)... designs in many years, there isn't anything very new about the latest line of shoes from Santorelli. As one of the most famous designers in Italy, Salvatore Santorelli is expected to do more than simply repeat the previous year's (28)... formula of "smart, but casual" sandals in a range of pastels.

27.  
A) *first new Italian* B) *new first Italian*  
C) *first Italian new* D) *Italian first new*
28.  
A) *succession* B) *successful* C) *success*  
D) *successfully*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

One of the earliest methods of home heating, the fireplace continues (29) ... popular today. Ancient fireplaces were usually central pits in the house that also served as stoves, light sources, and (30) ... from wild animals. Modern fireplaces are sometimes valued more (31) ... their appearance than their actual heating capacities.

29.  
A) *was* B) *been* C) *to be* D) *is*
30.  
A) *benefit* B) *protection* C) *comfort*  
D) *challenge*

31. A) on B) for C) after D) at

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *The danger of hunting for the Brazilian population.*
- B) *The danger of two breeds of dolphins disappearing.*
- C) *Hydro-electric dam projects on the Yangtze river.*
- D) *The breeding of small river dolphins.*

33. What does the number 10 in the text refer to?
- A) *Groups of biologist who are trying to repopulate dolphins.*
- B) *The percentage of Amazonian dolphins which die out every year.*
- C) *Governmental organizations which fight the pollution of rivers.*
- D) *The percentage of living Yangtze river dolphins.*

Read the text. Then choose the correct answer to question 34-36.

The Great Pyramid of Giza, a monument of wisdom and prophecy, was built as a tomb for Pharaoh Cheops in 2720 B.C. Despite its antiquity, certain aspects of its construction make it one of the truly great wonders of the world. The four sides of the pyramid are aligned almost exactly on true north, south, east, and west - an incredible engineering feat. The ancient Egyptians were sun worshippers and great astronomers, so computations for the Great Pyramid were based on astronomical observations.

Explorations and detailed examinations of the base of the structure reveal many intersecting lines. Further scientific study indicates that these represent a type of time line of events past, present, and future. Many of the events have been interpreted and found to coincide with known facts of the past.

Others are prophesied for future generations and presently are under investigation.

Was this superstructure made by ordinary beings, or one built by a race superior to any known today?

34. What did the ancient Egyptians base on their calculations?
- A) *knowledge of the earth's surface*
- B) *observation of the celestial bodies*
- C) *advanced tools of measurement*
- D) *advanced technology*
35. Why was the Great Pyramid constructed?
- A) *as a solar observatory*
- B) *as an engineering feat*
- C) *as a tomb for the pharaoh*
- D) *as a religious temple*

36. Why is the Great Pyramid of Giza considered one of the Seven Wonders of the World?
- A) *it was built by a super race*
  - B) *it is very old*
  - C) *it was selected as the tomb of Pharaoh Cheops*
  - D) *it is perfectly aligned to the four cardinal points of the compass and contains many prophesies*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000049**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1. Asosi  $a$ , perimetri 42 bo'lgan to'g'ri to'rtburchakning yuzini hisoblash uchun ifoda tuzing.  
A)  $S = a(21 - a)$  B)  $S = a^2 - 21$   
C)  $S = ax$  D)  $S = a(a - 21)$
2.  $7 \cdot 5^2$  va  $3^2 \cdot 5 \cdot 7$  sonlari uchun EKUK ni toping.  
A) 1575 B) 315 C) 3150 D) 1500
3. Uchlari  $A(-2; 3)$ ,  $B(-1; -2)$  va  $C(1; 1)$  nuqtalarda bo'lgan uchburchakning A va C burchaklarini toping.  
A)  $45^\circ; 90^\circ$  B)  $90^\circ; 45^\circ$  C)  $45^\circ; 45^\circ$   
D)  $30^\circ; 90^\circ$
4.  $cx^2 + \sqrt{20}x + c + 2 > 0$  tengsizlik yechimga ega bo'lmaydigan  $c$  ning butun qiymatlari orasidan eng kattasini toping.  
A)  $-6$  B)  $-1$  C)  $-2$  D)  $-4$
5. 117, 177, 237 sonlarini  $A$  soniga bo'lganda mos ravishda 5, 9, 13 qoldiqlar chiqadi.  $A$  ning qabul qilishi mumkin bo'lgan qiymatlari yig'indisini toping.  
A) 42 B) 31 C) 98 D) 120
6. Radiusi  $r$  bo'lgan aylananing vatari aylana markazidan  $\frac{r\sqrt{3}}{2}$  uzoqlikda bo'lsa, bu vatar tortib turgan yoy uzunligini toping.  
A)  $\frac{\pi r}{4}$  B)  $\frac{\pi r}{6}$  C)  $\frac{\pi r}{3}$  D)  $\frac{\pi r}{2}$
7. Muntazam yigirmaburchakning eng katta va eng kichik diagonallari orasidagi burchakni toping.  
A)  $76^\circ$  B)  $80^\circ$  C)  $72^\circ$  D)  $82^\circ$
8.  $2; b_2$  va  $b_3$  sonlari o'suvchi geometrik progressiyaning dastlabki uchta hadidan iborat. Agar bu progressiyaning ikkinchi hadiga 25 qo'shilsa, hosil bo'lgan sonlar arifmetik progressiyaning dastlabki uchta hadini tashkil etadi.  $b_2$  toping.  
A) 12 B) 10 C) 8 D) 6
9. Agar  $a^3 + a - 2 = 0$  bo'lsa,  $\frac{a^4 + a^3 + a^2 + 9}{a^5 + a^2 + a + 6}$  ifodaning qiymatini toping.  
A) -2 B) 1 C)  $\frac{4}{3}$  D)  $\frac{12}{11}$
10.  $f\left(\frac{3x-1}{x+2}\right) = \frac{x+1}{x-1}$  bo'lsa,  $f(x)$  ni toping.  
A)  $\frac{x+4}{3x-2}$  B)  $\frac{x+1}{x-1}$  C)  $\frac{2x+1}{3-x}$   
D)  $\frac{3x-1}{x+2}$
11. Velosipedchi bir soatda 15,75 km, piyoda esa  $4\frac{1}{2}$  km yo'l bosadi. Velosipedchining tezligi piyodaning tezligidan necha marta ortiq?  
A) 3,5 B) 11,25 C) 11,5 D) 3,75
12.  $\frac{ax-b}{a+b} + \frac{bx+a}{a-b} = \frac{a^2+b^2}{a^2-b^2}$  tenglamani yeching ( $|a| \neq |b|$ ).  
A)  $x = -1$  B)  $x = a$  C)  $x = 1$  D)  $x = 0$
13. Uzunligi 19,8 m bo'lgan arqon ikki bo'lakka bo'lindi. Bo'laklardan birining uzunligi ikkinchisidan 20% ortiq bo'lsa, har bir bo'lakning uzunligini (m) toping.  
A) 8 va 11,8 B) 6,8 va 13 C) 9 va 10,8  
D) 7,8 va 12
14.  $f'(x) = 12x^5 - 4x^3 - 2x + 5$ ,  $f(-1) = 0$ ,  $f(1) = ?$   
A) 8 B)  $-8$  C)  $-10$  D) 10
15.  $f(x) = x^2 + 2x + 1$  funksiyaning hosilasini toping.  
A)  $2x^2 + 2$  B)  $2x - 2$  C)  $2x + 2$   
D)  $x^2 + 2$
16.  $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \dots \cdot \sin 45^\circ}{\cos 46^\circ \cdot \cos 47^\circ \cdot \dots \cdot \cos 89^\circ}$  ni hisoblang.  
A)  $\frac{1}{2}$  B)  $\frac{\sqrt{3}}{2}$  C) 1 D)  $\frac{\sqrt{2}}{2}$
17.  $y = -3x^2 + 2x + |x + 2|$  funksiyaning eng katta qiymatini toping.  
A)  $3\frac{11}{12}$  B) 10 C)  $2\frac{3}{4}$  D)  $2\frac{4}{5}$
18.  $ABCD$  parallelogramning  $A$  va  $B$  burchaklaridan chiquvchi bissektrisalar orasidagi burchakni toping.  
A)  $120^\circ$  B)  $150^\circ$  C)  $40^\circ$  D)  $90^\circ$



19. Tekislikdan  $a$  uzoqlikda joylashgan nuqtadan tekislik bilan  $30^\circ$  li burchak hosil qiluvchi ikkita og'ma o'tkazilgan. Ularning tekislikdagi proyeksiyalari o'zaro  $120^\circ$  li burchak hosil qilsa, og'malarning uchlari orasidagi masofani aniqlang.  
A)  $\sqrt{3}a$  B)  $3a$  C)  $2a$  D)  $\sqrt{2}a$
20.  $2^{x+4} + 3 \cdot 2^{x-2} \geq 67$  tengsizlikni yeching.  
A)  $[4; \infty)$   
B)  $[3; \infty)$   
C)  $(-\infty; 2)$   
D)  $[2; \infty)$
21.  $||x - 4| - 7| > 5$  tengsizlikning eng kichik musbat va eng katta manfiy butun yechimlari ayirmasini toping.  
A)  $-6$  B)  $6$  C)  $-12$  D)  $12$
22.  $\frac{2^{3a+0,5} + \sqrt{2}}{4^a - 2^a + 1} \cdot (2^{a+0,5} - \sqrt{2}) - 2^{2a+1}$  ni hisoblang.  
A)  $-2^a$  B)  $4^a\sqrt{2}$  C)  $2$  D)  $2\cos 7\pi$
23.  $\log_2(x - 1) - \log_2(x + 1) + \log_{\frac{x+1}{x-1}} 2 > 0$  tengsizlikni yeching.  
A)  $x > 4$  B)  $x < 3$  C)  $x > 6$  D)  $x > 3$
24. To'g'ri burchakli trapetsiyaga radiusi 5 ga teng aylana ichki chizilgan. Agar trapetsiyaning katta asosi 17 ga teng bo'lsa, aylana markazidan trapetsiyaning o'tkir burchagigacha bo'lgan masofani toping.  
A) 12 B) 13 C) 7 D) 9
25. Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.  
A) 10 B) 15 C) 30 D) 20
26.  $\sqrt{x - 3 - 2\sqrt{x - 4}} + \sqrt{x - 4\sqrt{x - 4}} = 1$  tenglamaning ildizlarini toping.  
A)  $[6; 8]$  B)  $[3; 4]$  C)  $[6; 9]$  D)  $[5; 8]$
27.  $\sqrt[3]{x+2} + \sqrt[3]{x+3} + \sqrt[3]{x+4} = 0$  tenglama ildizlarining yig'indisini toping.  
A) 1 B) -3 C) 2 D) -5
28.  $\sqrt[3]{0,5} + \sqrt[3]{4} - \sqrt[3]{13,5}$  ni hisoblang.  
A)  $-\sqrt[3]{5}$  B)  $\sqrt[3]{5}$  C)  $-\sqrt[3]{2}$  D) 0
29.  $A(2; 1)$  nuqtadan o'tib, koordinata o'qlariga urinuvchi aylana tenglamasini tuzing.  
A)  $(x - 3)^2 + (y - 3)^2 = 9$   
B)  $(x - 2)^2 + (y - 4)^2 = 9$   
C)  $(x - 1)^2 + (y - 5)^2 = 16$   
D)  $(x - 5)^2 + (y - 5)^2 = 25$  yoki  $(x - 1)^2 + (y - 1)^2 = 1$
30.  $y = x + 3$ ,  $x + 2y = 6$  va  $y = 0$  to'g'ri chiziqlar bilan chegaralangan figuraning yuzini toping.  
A) 12,5 B) 13,5 C) 25 D) 27
31. "Mantiq insonga shunday bir qoida beradiki, bu qoida yordamida xulosa chiqarishda xatolardan saqlanadi". Ushbu fikr kimga tegishli?  
A) Abu Nasr Farobiy B) Alisher Navoiy  
C) Kamoliddin Behzod D) Abu Ali Ibn Sino
32. Hisoblang va o'tkazishni bajaring:  
 $27_{10} + 111_2 \rightarrow x_2$   
A)  $100010_2$  B)  $100011_2$  C)  $100110_2$   
D)  $100111_2$
33. Kompyuter uchun yangi dasturlar tayyorlash va tahrirlashni yengillashtiruvchi dasturlar qanday nomlanadi?  
A) Sistema dasturlari B) Amaliy dasturlar  
C) Uskunaviy dasturlar D) Utilitalar
34. MS Word 2003 dasturida uskunalar panelini sozlash bo'limi qaysi menyuda joylashgan?  
A) Файл(Fayl) B) Правка(Tahrir)  
C) Вид(Ko'rinish) D) Формат(Format)
35. Axborot uzatish jarayonida quyidagi qismlardan qaysi biri bo'lishi shart?  
1) Axborot qabul qiluvchi 2) Axborot manbai  
3) Axborot uzatish vositasi  
A) 1, 2, 3 B) 1 C) 1, 2 D) 1, 3
36. Paskal dasturi lavhasidagi write protsedurasi necha marta bajariladi?  
for i:=1 to 3 do for j:=0 to 3 do write (i+j);  
A) 1 marta B) 3 marta C) 12 marta  
D) 9 marta

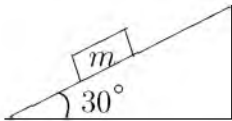
## FIZIKA

1. Matematik mayatnik 3 s da 2 marta tebranmoqda. Mayatnik ipining uzunligini (sm) toping.  $g=10 \text{ m/s}^2$ ,  $\pi=3,14$   
A) 57 B) 6 C) 50 D) 55

2. Gaz boshlang'ich 6 l hajmdan 4 l gacha izotermik siqilgan. Bunda uning bosimi  $2 \cdot 10^5 \text{ N/m}^2$  ga ortgan. Gazning boshlang'ich bosimi ( $\text{N/m}^2$ ) qanday?  
A)  $20 \cdot 10^5$  B)  $2 \cdot 10^5$  C)  $4 \cdot 10^5$  D)  $4 \cdot 10^6$
3. Elektropoyezdning uchinchi vagoni oldida turgan kuzatuvchi harakat boshlagan vagonning 5 s davomida o'tganini, poyezdning oxiri o'tguncha esa 20 s vaqt o'tganini aniqlagan bo'lsa, poyezdning vagonlari soni nechta? (Poyezd harakati tekis tezlanuvchan.)  
A) 14 B) 18 C) 15 D) 16
4. Magnit induksiya oqimi 0,2 Wb bo'lgan g'altakning induktivligi (H) qanday bo'lganda g'altakdan 1 A tok o'tadi?  
A) 0,5 B) 0,3 C) 0,2 D) 0,4
5. Isitgich elektr choynakda boshlang'ich temperaturasi  $10^\circ\text{C}$  bo'lgan 2 kg massali suvni quvvati 1 kVt bo'lgan. Elektr choynakning FIK 90%. Agar kuchlanish 220 V bo'lsa, isitgich elementining elektr spiralidagi tok kuchi (A) qanday bo'ladi?  
A) 450 B) 45 C) 4500 D) 4,5
6. Bir jinsli elektr maydonida  $\alpha$ -zarrachasi kuchlanganlik vektorining yo'nalishi bo'ylab ko'chgan bo'lsa uning potensial energiyasi qanday o'zgaradi?  
A) ortqdi B) avval ortib so'ngra kamayadi C) o'zgarmaydi D) kamayadi
7. Massasi 50 kg bo'lgan bola Oy sirtida turibdi deylik. U Oyga qanday kuch (N) bilan tortiladi?  $g=1,6 \text{ m/s}^2$   
A) 500 B) 16 C) 80 D) 50
8. Fotonning energiyasi  $4,4 \cdot 10^{-19} \text{ J}$  bo'lgan yorug'lik to'lqin uzunligi  $3 \cdot 10^{-7} \text{ m}$ . Shu muhitning absolut sindirish ko'rsatkichini aniqlang.  $h=6,63 \cdot 10^{-34} \text{ J}\cdot\text{s}$   
A) 1,3 B) 1,6 C) 2,4 D) 1,5
9. 4 g vodoroddagi modda miqdorini (mol) toping.  
A) 1 B) 2 C) 3 D) 4
10. Yuqoriga tik otilgan 1 kg massali jismning 10 m balandlikdagi kinetik energiyasi 100 J bo'lsa, u qanday boshlang'ich tezlik bilan (m/s) otiladi?  
A) 25 B) 30 C) 20 D) 50
11. Temperatura ortishi bilan yarimo'tkazgichning qarshiligi ...  
A) avval ortadi, keyin kamayadi B) ortadi C) kamayadi D) o'zgarmaydi
12. Tebranish konturdagi kondensator sig'imi 25 marta ortirilsa, g'altakning induktivligi 16 marta kamaytirilsa, tebranish davri necha marta o'zgaradi?  
A)  $5/4$  marta ortadi B) 1,6 marta kamayadi C) 1,6 marta ortadi D)  $4/5$  marta ortadi
13. Sterjen qanday tezlik bilan harakatlansa, uning uzunligi 2 marta kamayadi?  
A)  $v = \frac{\sqrt{5}}{2}c$   
B)  $v = \frac{1}{2}c$   
C)  $v = \frac{\sqrt{3}}{2}c$   
D)  $v = \frac{\sqrt{2}}{2}c$
14. 30 m/s tezlik bilan gorizontol otilgan 1 kg massali jismning 6-sekund oxiridagi kinetik energiyasini (kJ) aniqlang.  
A) 1 B) 2,25 C) 20 D) 4,5
15. Prujinaning bikrligi 40 N/m ga teng bo'lsa, unga maxkamlagan 100 g massali jismning tebranish chastotasi (Gs) qanchaga teng bo'ladi?  
A) 30 B) 3 C) 4 D) 0,3
16. Muz parchasi suv sirtidan 2 sm chiqqan holda suzib yuribdi. Muz parchasi asosining yuzi  $200 \text{ sm}^2$  bo'lsa, uning og'irligi (N) qancha? Muzning zichligi  $0,9 \text{ g/sm}^3$ .  
A) 35 B) 3,6 C) 45 D) 90
17. 2,5 Tl induksiyali bir jinsli magnit maydon o'tkazgichdagi tok kuchi 0,5 A bo'lganda induksiya vektoriga  $30^\circ$  burchak ostida joylashgan 50 sm uzunlikdagi o'tkazgichga qanday kuch (N) bilan ta'sir qiladi?  
A) 0,31 B) 0,35 C) 0,33 D) 0,3
18. Bola chanada uzunligi 40 m bo'lgan qiya tekislikdan 10 s da tushdi va to'xtaguncha gorizontol uchastkada yana 40 m o'tdi. Qiya tekislik oxiridagi tezlikni (m/s) toping.  
A) 8 B) 13 C) 5 D) 6

19. Massasi 15 kg bo'lgan chanani bola  $45^\circ$  yo'nalishdagi kuch bilan tortib bormoqda. Qor bilan chana orasidagi ishqalanish koeffitsienti 0,02 ga teng bo'lsa, chana tekis harakat qilishi uchun bola qanday kuch (N) bilan tortish kerak?  
A) 2,1 B) 4,0 C) 3 D) 4,2
20. 220 V kuchlanish tarmoqqa 80 W va 100 W quvvatli lampochkalar parallel ulangan. Lampochkalar orqali o'tuvchi tok kuchini (A) aniqlang.  
A) 0,36; 0,45 B) 0,32; 0,45 C) 0,4; 0,5 D) 0,36; 0,5
21. Elementlari ketma-ket ulangan zanjirning o'zgaruvchan tokka nisbatan to'liq qarshiligi  $\sqrt{R^2 + (\omega L - 1/\omega C)^2}$  ga teng. Chastota  $\omega$  rezonans chastotaga nisbatan ikki marta katta bo'lsa, bu qarshilik nimaga teng?  
A)  $\sqrt{R^2 + \left(\sqrt{\frac{C}{L}} + \sqrt{\frac{L}{C}}\right)^2}$   
B)  $\sqrt{R^2 + \left(2\sqrt{\frac{C}{L}} + \frac{1}{2}\sqrt{\frac{L}{C}}\right)^2}$   
C)  $\sqrt{R^2 + \left(\sqrt{\frac{C}{L}} - \sqrt{\frac{L}{C}}\right)^2}$   
D)  $\sqrt{R^2 + \left(\frac{3L}{2C}\right)^2}$
22. Hidrostansiyaning quvvati 75,5 MW. Agar stansiyaning FIK i 75% bo'lsa va to'g'on suv sathini 10 m balandlikka ko'tarsa suvning sarflanishi ( $\text{m}^3/\text{s}$ ) nimaga teng?  
A) 850 B) 1000 C) 900 D) 800
23. Hajmi 12 l bo'lgan idishda 25 g massali gaz  $27^\circ\text{C}$  temperaturada va 185 kPa bosim ostida turibdi. Gazning molar massasini ( $\text{kg}/\text{mol}$ ) aniqlang.  
A) 0,028 B) 0,020 C) 0,040 D) 0,032
24. Agar ichki qarshiligi  $1 \Omega$  bo'lgan ampermetrga  $0,2 \Omega$  qarshilik parallel ulansa, uning o'lehash chegarasi necha marta orttirilgan bo'ladi?  
A) 6 B) 8 C) 2 D) 4
25. Massasi 12 kg bo'lgan tinch turgan jismga 9 s davomida 8 N kuch ta'sir qilgan bo'lsa, jismning shu vaqtda erishgan tezligi ( $\text{m}/\text{s}$ ) va harakatning o'rtacha tezligini ( $\text{m}/\text{s}$ ) toping.  
A) 6 va 4 B) 3 va 6 C) 6 va 3 D) 4 va 6
26. Agar zaryadlarning har birining miqdorini 3 barobar kamaytirib, oralaridagi masofani 3 marta oshirsak ularning bir-biriga ta'siri qanday o'zgaradi?  
A) o'zgarmaydi B) 27 marta kamayadi  
C) 81 marta kamayadi D) 9 marta oshadi
27. Vakuumdagi elektr tokining qanday ta'sirlari namoyon bo'ladi?  
A) magnit B) barcha ta'sirlari C) kimyoviy D) issiqlik
28. Yorug'likka nisbatan shaffof moddadan yasalgan va qavariqlik radiusi 40 sm bo'lgan bir tomonlama qavariq linzaning optik kuchi +2 dptr. Linza tayyorlangan moddaning sindirish ko'rsatkichi qanday?  
A) 1,5 B) 1,3 C) 1,13 D) 1,8
29. Yerdan Oygacha bo'lgan masofa 384 ming km bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?  
A) 1,5 B) 1,3 C) 1,2 D) 1,4
30. Ideal gazning massasi o'zgarmagani holda uning hajmi 4 marta kamaytirilib, bosimi 7 marta orttirilsa, gazning ichki energiyasi necha marta ortadi?  
A) 7/4 B) 4/11 C) 4/7 D) 11/4
31. Balandligi 210 m bo'lgan sharsharadan tushayotgan suvning pastdagi temperaturasi sharshara boshidagi temperaturasidan qancha ( $^\circ\text{C}$ ) ortiq? Suvning solishtirma issiqlik sig'imi  $4200 \text{ J}/(\text{kg}\cdot\text{K})$ . Mexanik energiya suvning isishi uchun sarf bo'ladi.  
A) 1,2 B) 1 C) 0,5 D) 2
32. Og'irligi 750 N bo'lgan odamni ko'tarib tura oladigan 50 sm qalinlikdagi yassi muzning yuzasi eng kamida qancha ( $\text{m}^2$ ) bo'lishi mumkin?  
A) 1 B) 1,25 C) 1,53 D) 1,75
33. 4 marta kattalashtirilgan lupaning optik kuchini (dptr) aniqlang.  
A) 1 B) 8 C) 4 D) 16
34. Ballondagi gazning yarmi chiqib ketishi natijasida uning temperaturasi  $55^\circ\text{C}$  dan  $2^\circ\text{C}$  gacha pasaygan bo'lsa, ichki energiya necha marta kamaygan bo'ladi?  
A) 2,36 B) 2,30 C) 2,2 D) 2,38

35. Yadro nuklonlarga ajratib yuborildi. Bunda energiya yutiladimi yoki ajraladimi?
- A) yutiladi  
B) ajraladi  
C) og'ir yadrolarda yutiladi, yengil yadrolarda ajraladi  
D) yutilishi ham, ajralishi ham mumkin
36. 6 kg massali jism qiya tekislikdan o'zgarimas tezlik bilan sirpanib tushmoqda. 30 sm masofada bajarilgan ish (J) nimaga teng?



- A) 2,5 B) 9 C) 6 D) 5

### INGLIZ TILI

- Choose the answer which correctly completes the sentence.  
It took me one and ... half hours to get there.  
A) a B) the C) an D) -
- Choose the answer which correctly complete the sentence.  
At the circus the children were kept ... by clown acts.  
A) to amuse B) amuse C) amused  
D) amusing
- Choose the answer which correctly completes the sentence.  
I saw you in the park yesterday. You ... with your friend Tom.  
A) were sitting B) had sat C) sat D) sit
- Choose the answer which correctly completes the sentence.  
You should contact ... Mr. Abdullayev and clear up all the details.  
A) to B) with C) for D) -
- Choose the answer which correctly completes the sentence.  
Bob had asked me to keep the news a secret, I ... anybody.  
A) hadn't told B) wouldn't tell  
C) would tell D) wouldn't have told
- Choose the answer which correctly completes the sentence.  
I advise you to buy a Volkswagen . . . .  
Volkswagen cars are cheap, they last a long time.  
A) because B) as C) even though  
D) despite
- Choose the answer which correctly complete the sentence.  
The woman must have been very ... when she was young.  
A) attracted B) attraction C) attractive  
D) attract
- Choose the answer which correctly completes the sentence.  
Kate reads "The Washington Post" every day. She doesn't read any ... newspapers.  
A) others B) the other C) another  
D) other
- Choose the answer which correctly completes the sentence.  
Just before the university term ... I am going to have a ten-day holiday in Spain.  
A) starts B) will start C) started  
D) start
- Change the sentence into the Passive Voice.  
They didn't ask me my name.  
A) My name wasn't asked.  
B) I wasn't asked my name.  
C) I didn't ask my name.  
D) I wasn't asked name.
- Choose the answer which correctly completes the sentence.  
Why did you say that Paul ... a careful driver?  
A) hadn't been B) were C) isn't  
D) hasn't
- Choose the answer which correctly completes the sentence.  
"Did it rain last week?"  
Do you know ... last week.  
A) if it had rained B) whether it rained  
C) did it rain D) if did it rain
- Choose the answer which correctly complete the sentence.  
These library books are overdue so I ... pay a fine when I return them.  
A) may B) have to C) can D) need

14. Choose the answer which correctly completes the sentence.  
The twins were difficult to tell apart, particularly when they wore very ... clothing.  
A) *different* B) *the same* C) *similar*  
D) *alike*
15. Choose the answer which correctly completes the sentence.  
I haven't got enough cash. Can I pay ... cheque?  
A) *with* B) *from* C) *by* D) *in*
16. Choose the answer which correctly completes the sentence.  
The police found the money which ... from the bank.  
A) *was stealing* B) *had been stolen*  
C) *were stolen* D) *stolen*
17. Choose the answer which correctly completes the sentence.  
David was brought up in ... Republic of Ireland, not in England.  
A) *a* B) *an* C) *-* D) *the*
18. Choose the answer which correctly completes the sentence.  
Some people would only be convinced that the world's climate is changing if it ... in the Sahara Desert.  
A) *snows* B) *had snowed* C) *will snow*  
D) *snowed*
19. Choose the answer which correctly completes the sentence.  
I would go out more often if I ... to work so much.  
A) *don't have* B) *hadn't* C) *wouldn't have*  
D) *didn't have*
20. Choose the answer which correctly completes the sentence.  
We would rather ... out late tonight.  
A) *staying* B) *not stay* C) *don't stay*  
D) *not to stay*
21. Choose the answer which correctly completes the sentence.  
Buy me a newspaper on your way back, ...?  
A) *don't you* B) *do you* C) *you will*  
D) *will you*

22. Choose the answer which correctly completes the sentence.  
The man ... was fishing next to us was talking to himself.  
A) *who* B) *whose* C) *whom* D) *what*
23. Choose the answer which correctly complete the sentence.  
Our car stopped on the halfway to the city. We couldn't go ... because we had no petrol left.  
A) *farther* B) *far* C) *further* D) *farthest*

Read the text. Then choose the correct answer to question 24-26.

Contrary to common knowledge, the water, milk and meat of coconuts only begin the list of uses of this versatile tree. The outer husk of the ripe nuts contains fibres that, when separated, can be twisted into twine rope of amazing toughness. It is quite resistant to rot from dampness or seawater. Despite the advent of nails and screws, this rope continues to be widely used for binding together the timbers of houses and the parts of canoes, tools and the like. Expert craftsmen can make sizeable ropes, which, after use, become quite flexible. The inner shell of the ripe nut can be cut and carved into ladles, scrapers, combs and cups and will take a high polish. Furthermore, the sap of the coconut can be fermented to make a pleasant tasting wine, while the fresh sap can be used as food for babies.

24. According to the passage, twine rope ...  
A) *is the best possible material for making small boats.*  
B) *is sometimes used in the manufacture of polishes.*  
C) *can be used for some of the same functions as nails.*  
D) *can easily be damaged if not protected from rain and sea water.*
25. We learn from the passage that, despite the many uses of the coconut, it is ...  
A) *better known among people as a source of food.*  
B) *very difficult to grow, harvest and process the nut.*  
C) *most commonly used as a material for making ropes.*  
D) *only the experts who know how to use it to the full.*

26. It is clear from the passage that . . .

- A) *baby food made from the coconut palm has a great nutritive value.*
- B) *the same part of the coconut palm is used to make wine and baby food.*
- C) *baby food made from coconut palms contains a bit of alcohol.*
- D) *wine made from the coconut tree tastes better than other types.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Most whales are huge (27). . . . The largest whales are called blue whales. They can grow to 30 meter in length and can weigh 135,000 kilogram. Blue whales are (28). . . larger than elephant and larger than any of the now extinct dinosaur. The heart of an adult blue whale is about the size of a compact car.

27.

- A) *creative*    B) *create*    C) *creators*
- D) *creatures*

28.

- A) *no*    B) *much*    C) *some*    D) *very*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

In 900AD the cities of the Mayan civilization were still prosperous, but a hundred years later they (29). . . . A number of theories have been put (30). . . to explain this. One theory is that the Mayan ruling class died out because rulers did not work and so became (31). . . , and there was nobody to tell the formers what to do.

29.

- A) *had been abandoned*
- B) *have been abandoned*    C) *abandoned*
- D) *had abandoned*

30.

- A) *forward*    B) *through*    C) *down*    D) *at*

31.

- A) *unhealthy*    B) *healthy*    C) *health*
- D) *unhealth*

Read the text. Then choose the correct answer to question 32-33.

On the day of my first piano concert, I became more and more nervous. To help me calm down, my piano teacher told me to place several cabbages in the room where I practiced. I was so eager to get over my nerves that I was willing to try anything. For the next few hours, I played to an audience of cabbages. When the time of the concert came, I was still terribly nervous. My hands felt like ice.

When I finally walked across the stage, I looked out into the dark audience, but I couldn't see anyone. I tried to imagine that all the people sitting in the hall just as well might be cabbages.

As I sat down to play, my hands relaxed and I played all my pieces without a mistake. The concert was a success.

32. The pianist stopped feeling nervous. . .

- A) *as soon as the concert was over*
- B) *when the audience began to applaud*
- C) *because he had practiced a lot*
- D) *when he found he couldn't see the audience*

33. On the day of the concert the teacher ...

- A) *felt nearly as nervous as the pianist*
- B) *couldn't think of a way helping the pianist to stay calm*
- C) *advised him to put cabbages in the room where he practiced*
- D) *advised him to eat a little cabbage*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Martian soil is rocky*
- B) *It takes longer for Mars to circle the Sun than it takes Earth*
- C) *Mars has two moons*
- D) *Mars is larger than Earth*

35. Man-made canals were supposedly discovered by ...

- A) *Martian*    B) *Viking I*    C) *Schiaparelli*
- D) *Phobos*

36. Mars has been nicknamed as ...

- A) *Deimos*    B) *The Red Planet*    C) *Martian*
- D) *Viking I*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000050**

Toshkent – 2014



**MATEMATIKA (INFORMATIKA BILAN)**

1. To'g'ri burchakli trapetsiyaning bitta burchagi  $60^\circ$ , katta asosi 12 sm ga teng. Agar trapetsiyaning kichik diagonali katta asosiga teng bo'lsa, diagonalalar o'rtalarini tutashtiruvchi kesma uzunligini (sm) toping.  
A) 4 B) 3 C) 8 D) 5
2. Koordinata boshidan o'tuvchi tekislik tenglamasini toping.  
A)  $x + y - 1 = 0$  B)  $x + 3y + 9z - 1 = 0$   
C)  $2x - 2y + 5z = 0$  D)  $x + y + 1 = 0$
3.  $\int_0^2 (x^2 + 1) dx$  ni hisoblang.  
A)  $4\frac{5}{6}$  B)  $4\frac{4}{5}$  C)  $4\frac{3}{4}$  D)  $4\frac{2}{3}$
4. 2 ta parallel to'g'ri chiziqni uchinchi to'g'ri chiziq kesib o'tganda hosil bo'lgan ichki bir tomonli burchaklar  $\frac{7}{13}$  nisbatda. Ulardan kattasini toping.  
A)  $120^\circ$  B)  $63^\circ$  C)  $113^\circ$  D)  $117^\circ$
5.  $31 \cdot 52 - 93 \cdot 4 + 57 \cdot 25 - 19 \cdot 35 + 2 \cdot (-10)^3$   
A) 1000 B) -1000 C) 4000 D) 0
6. 117, 177, 237 sonlarini  $A$  soniga bo'lganda mos ravishda 5, 9, 13 qoldiqlar chiqadi.  $A$  ning qabul qilishi mumkin bo'lgan qiymatlari yig'indisini toping.  
A) 31 B) 42 C) 98 D) 120
7. Avtomashina Toshkentdan Samarqandga tomon yo'lga chiqdi. Yo'lning  $\frac{2}{5}$  qismini rejadagi tezlikda o'tgach, tezligini 20% ga oshirdi va Samarqandga mo'ljalidagidan yarim soat oldin keldi. Avtomashina ikki shahar orasidagi masofani necha soatda o'tgan?  
A) 4,5 B) 3 C) 2,5 D) 4
8.  $y = -3x^2 + 2x + |x + 2|$  funksiyaning eng katta qiymatini toping.  
A)  $2\frac{4}{5}$  B) 10 C)  $3\frac{11}{12}$  D)  $2\frac{3}{4}$
9.  $f(x) = e^{2x-4} + 2\ln x$ ,  $f'(2) = ?$   
A) 4 B) 5 C) 3 D) 2
10. Uchlari  $A(3; 0)$ ,  $B(-3; 8)$ ,  $C(3; 8)$  nuqtalarda bo'lgan uchburchakka ichki chizilgan aylana tenglamasini toping.  
A)  $(x - 2)^2 + (y + 6)^2 = 4$   
B)  $(x - 3)^2 + (y + 1)^2 = 2$   
C)  $(x - 1)^2 + (y - 6)^2 = 4$   
D)  $(x + 3)^2 + (y - 2)^2 = 1$
11.  $y = \ln ||x| + 1|$  funksiyaning aniqlanish sohasini toping.  
A)  $(-\infty; 0)$   
B)  $(0; \infty)$   
C)  $(1; \infty)$   
D)  $(-\infty; \infty)$
12.  $(x - 4)(x - 7)(x - 9) > 0$  tengsizlikni yeching.  
A)  $x \in (-\infty; 4) \cup (7; 9)$   
B)  $x \in (7; 9)$   
C)  $x \in (4; 7) \cup (9; \infty)$   
D)  $x \in (4; 7)$
13. Radiuslari 2 va 3 ga teng bo'lgan aylanalar bir-biriga tashqi ravishda urinadi. Ularning ikkalasi uchinchi aylanaga ichki ravishda urinsa va markazlari bitta to'g'ri chiziqda yotsa, tashqi aylananing ichki aylanalardan bo'sh qolgan sohasi yuzini toping.  
A)  $6\pi$  B)  $9\pi$  C)  $12\pi$  D)  $4\pi$
14.  $\sin x = [x]$  tenglamani yeching. (Bu yerda  $[x]$  – butun qism.)  
A) 0 va  $\frac{\pi}{2}$   
B)  $\emptyset$   
C)  $x = \pi k$ ;  $x = \frac{\pi}{2} + \pi k$ ;  $k \in Z$   
D)  $0, \frac{\pi}{2}, \pi$
15.  $\frac{2}{\sqrt{10} + \sqrt{15} + \sqrt{14} + \sqrt{21}}$  kasrning maxrajini irratsionallikdan qutqaring.  
A)  $\sqrt{10} - \sqrt{15} + \sqrt{14} - \sqrt{21}$   
B)  $\sqrt{10} - \sqrt{15} + \sqrt{21} - \sqrt{14}$   
C)  $\sqrt{10} - \sqrt{15} + \sqrt{21} + \sqrt{14}$   
D)  $\sqrt{10} + \sqrt{15} + \sqrt{14} - \sqrt{21}$

16. Radiusi 5 ga teng bo'lgan doiradagi uzunligi 8 ga teng vatar doira markazidan qancha uzoqlikda bo'ladi?

- A) 3 B) 3,6 C) 4 D) 3,2

17. Muntazam sakkizburchakka tashqi chizilgan aylana radiusi  $\sqrt{2 + \sqrt{2}}$  ga teng bo'lsa, uning tomonini toping.

- A)  $\sqrt{2}$   
 B)  $\sqrt{2 - \sqrt{2}}$   
 C) 1  
 D)  $\frac{\sqrt{2 + \sqrt{2}}}{2}$

18.  $\sqrt[3]{x} + 6 = \sqrt[3]{x^2}$  tenglamaning katta va kichik ildizlari ayirmasini toping.

- A) 50 B) 25 C) 45 D) 35

19.  $ABC$  uchburchak uchlaridan va shu uchburchakning medianalari kesishgan  $M$  nuqtadan  $\alpha$ -tekislikka tushirilgan perpendikularlar asoslari mos ravishda  $A_1, B_1, C_1, M_1$  nuqtalarda yotsa,  $AA_1 + BB_1 + CC_1$  va  $MM_1$  uzunliklari nisbatini toping.

- A) 2 B)  $\frac{3}{2}$  C) 3 D) 1

20.  $(x - 1)^2(x^2 - 2x) = 12$  tenglamaning haqiqiy ildizlari yig'indisini toping.

- A) 0 B) 3 C) 4 D) 2

21.  $\sqrt{\frac{a^2}{3} + \sqrt{\frac{a^2}{3} + \sqrt{\frac{a^2}{3} + \dots}}} = 4$  tenglikni qanoatlantiruvchi  $a$  musbat sonni toping.

- A) 2 B) 8 C) 6 D) 4

22.  $\sqrt{3x^2 + 7x + 2} - \sqrt{2x^2 + 3x - 2} = \sqrt{x^2 + 2x}$  tenglama ildizlarining yig'indisini toping.

- A) 3 B) -1 C) -3 D) -2

23.  $ABCDEFGH$  muntazam sakkizburchakning yuzi 1 ga teng bo'lsa,  $ABEF$  to'g'ri to'rtburchakning yuzini toping.

- A)  $\frac{1}{2}$  B)  $\frac{\sqrt{2}}{4}$  C)  $\frac{1 + \sqrt{2}}{4}$  D)  $\frac{3}{2}$

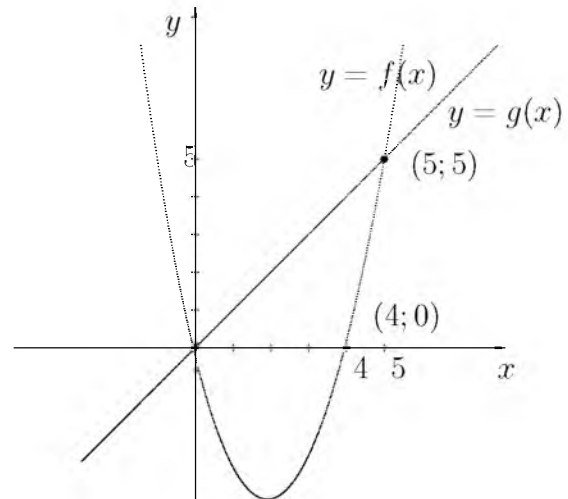
24.  $||x - 4| - 7| > 5$  tengsizlikning eng kichik musbat va eng katta manfiy butun yechimlari ayirmasini toping.

- A) 6 B) 12 C) -12 D) -6

25.  $y = 1994x^2 + 2013x - 1$  funksiya grafigi qaysi choraklardan o'tadi?

- A) I, II, IV B) I, II, III C) I, II, III, IV  
 D) II, IV

26. Quyidagi chizmaga asoslanib  $\frac{f(8)}{g(8)}$  ning qiymatini toping.



- A) 4 B) -4 C) 2 D) 3

27. Agar  $a^3 + a - 2 = 0$  bo'lsa,  $\frac{a^4 + a^3 + a^2 + 9}{a^5 + a^2 + a + 6}$  ifodaning qiymatini toping.

- A)  $\frac{4}{3}$  B) -2 C)  $\frac{12}{11}$  D) 1

28. Agar  $a = \frac{\sqrt{7} + \sqrt{3}}{3}$  bo'lsa,

$\sqrt{a - 2\sqrt{a - 1}} + \sqrt{a + 2\sqrt{a - 1}}$  ifodaning qiymatini toping.

- A)  $\frac{\sqrt{7} + \sqrt{3}}{3}$  B)  $\sqrt{2}$  C) 2 D)  $5 + \sqrt{21}$

29. Rombning tomoni  $10\sqrt{3}$  ga, o'tmas burchagi  $120^\circ$  ga teng. Rombga ichki chizilgan doiraning yuzini hisoblang.

- A)  $48,75\pi$  B)  $52,25\pi$  C)  $58,6\pi$  D)  $56,25\pi$

30. Teploxod ikki pristan oraligidagi masofani daryo oqimi bo'yicha 7 soat, oqimga qarshi 9 soatda o'tadi. Agar oqimning tezligi 2 km/soat bo'lsa, pristanlar orasidagi masofani (km) aniqlang.

- A) 126 B) 128 C) 120 D) 130

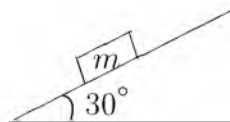
31. Yunonlar foydalangan hisoblash vositasi nomini aniqlang.

- A) Abak B) Serobyana C) Suan-pan  
 D) Cho't

32. Tashkil etuvchi barcha sodda mulohazalar rost bo'lganda quyidagilardan qaysi birining natijasi rost bo'ladi?
- A)  $(A \vee \neg B) \wedge \neg (C \vee D)$   
 B)  $A \wedge \neg B \vee C \wedge \neg D$   
 C)  $A \vee B \wedge \neg C \vee \neg D$   
 D)  $\neg A \vee (B \vee C) \wedge \neg D$
33. Kompyuter uchun yangi dasturlar tayyorlash va tahrirlashni yengillashtiruvchi dasturlar qanday nomlanadi?
- A) *Sistema dasturlari* B) *Amaliy dasturlar*  
 C) *Uskunaviy dasturlar* D) *Utilitalar*
34. MS Word 2003 dasturida uskunalar panelini sozlash bo'limi qaysi menyuda joylashgan?
- A) *Файл(Fayl)* B) *Правка(Tahrir)*  
 C) *Вид(Ko'rinish)* D) *Формат(Format)*
35. Elektron pochta manziliga oid mulohazalardan xatosini aniqlang.
- A) *E-mail manzilida @ belgisi ishtirok etmaydi*  
 B) *E-mail manzilida probel (bo'shliq) belgisi ishtirok etmaydi*  
 C) *E-mail manzilida raqamlar ishtirok etadi*  
 D) *E-mail manzilida lotin harflari ishtirok etadi*
36. Paskal dasturi lavhasidagi write protsedurasi necha marta bajariladi?  
 for i:=1 to 3 do for j:=0 to 3 do write (i+j);
- A) 1 marta B) 3 marta C) 12 marta  
 D) 9 marta

### FIZIKA

1. Chastotasi 5 MGs bo'lgan to'lqin suvga tushganida qanday chastotada (MGs) bo'ladi?
- A) 4 B) 6 C) 5 D) 3
2. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 12-sekundda bosib o'tgan yo'li 4-sekundda bosib o'tgan yo'lidan necha marta farq qiladi?
- A) 23/5 B) 9 C) 23/9 D) 23/7
3.  $N = N_0 \cdot 2^{-t/T}$   
 Radioaktiv parchalanish qonunida  $N$  nimani bildiradi?
- A) *tabiiy parchalangan yadrolar sonini*  
 B) *radioaktiv parchalangan yadrolar sonini*  
 C) *radioaktiv parchalanmagan yadrolar sonini*  
 D) *majburiy parchalangan yadrolar sonini*
4. Radiusi  $R$  bo'lgan shar yerda tinch turibdi. O'lchami sharning o'lchamidan ancha kichik jism sharning yuqorigi nuqtasidan tinch holatdan boshlab sirpanmoqda. Yer sirtidan qanday  $h$  balandlikda jism shardan ajraladi?
- A)  $h = 5R/3$  B)  $h = 2,5R$  C)  $h = R/3$   
 D)  $h = 2R/3$
5. Vakuimli diodning to'yinish toki 32 mA ga teng bo'lganda, katoddan 2 s ichida nechta elektron ajralib chiqadi?
- A)  $2 \cdot 10^{17}$  B)  $4 \cdot 10^{17}$  C)  $4 \cdot 10^{16}$  D)  $2 \cdot 10^{16}$
6. Jism radiusi 2 m bo'lgan aylana bo'ylab 180 rad/min burchak tezlik bilan harakatlanmoqda. Agar uning massasi 6 kg bo'lsa, unga ta'sir qilayotgan markazga intilma kuchni (N) aniqlang.
- A) 27 B) 36 C) 64 D) 108
7. 200 V kuchlanishgacha zaryadlanib tok manbaidan ajratilgan  $10 \mu\text{F}$  sig'imli kondensator qoplamalari orasidan dielektrik singdiruvchanligi  $\varepsilon=2,5$  bo'lgan dielektrikni tortib olish uchun qancha ish (J) bajarish kerak?
- A) 5 B) 3 C) 1,25 D) 0,3
8. Bir jinsli magnit maydon induksiyasi 2 marta ortsa, bu maydonga joylashgan o'tkazgichdagi tok kuchi qanday o'zgaradi?
- A) 4 marta ortadi B) o'zgarmaydi  
 C) 2 marta kamayadi D) 2 marta ortadi
9. 6 kg massali jism qiya tekislikdan o'zgarmas tezlik bilan sirpanib tushmoqda. 30 sm masofada bajarilgan ish (J) nimaga teng?



- A) 9 B) 2,5 C) 6 D) 5

10. Qizil yorug'lik nuri uchun foton energiyasini (J) hisoblang.  
A)  $3 \cdot 10^{-16}$  B)  $3 \cdot 10^{-19}$  C)  $3,5 \cdot 10^{-16}$   
D)  $2,83 \cdot 10^{-19}$
11. Agar qavariq linza yordamida buyumning haqiqiy, teskari kichiklashgan tasviri hosil qilinayotgan bo'lsa, buyum qayerda joylashgan?  
A) *ikkilangan fokus masofadan uzoqda*  
B) *fokus masofa bilan ikkilangan fokus masofa orasida*  
C) *ikkilangan fokus masofada*  
D) *fokus nuqta va optik markaz orasida*
12. Ikki kosmik kema  $v_1 = v_2 = 0,75c$  tezlik bilan qarama-qarshi yo'nalishda harakatlanmoqda. Birining 2-siga nisbatan tezligi qanday?  
A)  $0,9c$  B)  $0,96c$  C)  $0,86c$  D)  $c$
13. Havoning nisbiy namligini o'lchaydigan asbob nima?  
A) *psixrometr* B) *ariometr* C) *barometr*  
D) *gigrometr*
14. Chaqmoq chaqgandan so'ng 6 s o'tgach momoqaldiroq gumburladi, yashin razradi kuzatuvchidan qanday masofada (km) bo'lgan?  
A) 256 B) 45 C) 2 D) 56
15. Prujinaning bikrligi 40 N/m ga teng bo'lsa, unga maxkamlagan 100 g massali jismning tebranish chastotasi (Gs) qanchaga teng bo'ladi?  
A) 3 B) 4 C) 30 D) 0,3
16. O'zgarmas tok manbaiga avval 9  $\Omega$  qarshilik so'ngra 4  $\Omega$  qarshilik ulandi. Har ikkala holda birday vaqt ichida qarshiliklarda bir xil miqdorda issiqlik ajraladi. Manbaning ichki qarshiligini ( $\Omega$ ) aniqlang.  
A) 6 B)  $\sqrt{6}$  C) 3 D) 36
17. Raketa gazlarning chiqish tezligi 3,5 km/s bo'lganda 2000 kg/s yonilg'i sarflayotgan dvigatelning tortish kuchini (N) aniqlang.  
A)  $7 \cdot 10^6$  B)  $10 \cdot 10^6$  C)  $7 \cdot 10^3$  D)  $9 \cdot 10^6$
18. Massasi va boshlang'ich temperaturasi bir xil bo'lgan vodorod va geliy gazlari 70 K ga qizdirildi. Vodorodni qizdirishda bajarilgan ish  $A_1$  va geliy qizdirishda bajarilgan ish  $A_2$  lar qanday munosabatda bo'ladi? ( $P = \text{const}$ )  
A)  $A_2 = 4A_1$  B)  $A_1 = A_2$  C)  $A_2 = 2A_1$   
D)  $A_1 = 2A_2$
19. 220 V kuchlanishli tarmoqqa ulangan lampochkadan 1 A tok o'tmoqda. Lampochkada tok bajarilgan ishning 4% yorug'lik energiyasiga aylanadi. Lampochkada 0,5 soat davomida qancha yorug'lik energiyasi (J) tarqaladi?  
A) 15840 B) 15400 C) 15000 D) 15800
20. Kuchlanishni 2 marta, o'tkazgich uzunligini 4 marta oshirilsa, o'tkazgich qarshiligi qanday o'zgaradi?  
A) 6 marta ortadi B) 4 marta ortadi  
C) 2 marta ortadi D) 8 marta ortadi
21. Bir atomli 1 mol gaz izobarik kengayganda 160 J ish bajaradi va temperaturasi 10°C ga ortadi. Gazga qancha issiqlik miqdori (J) berilgan?  
A) 284 B) 160 C) 84 D) 124
22. Ballonda 20 mol gaz bo'lsa, undagi molekullar sonini toping.  
A)  $12 \cdot 10^{24}$  B)  $1,2 \cdot 10^{25}$  C)  $1,2 \cdot 10^{24}$   
D)  $12 \cdot 10^{25}$
23. Quduqdan chelakda suv tortilmoqda. Chelak hajmi 10 l. Arqon o'raladigan baraban radiusi 10 sm va dastak tirsagi 50 sm ga teng. Suv chiqarish uchun tirsakka qanday kuch (N) bilan ta'sir etish kerak? Suvning zichligi  $1000 \frac{\text{kg}}{\text{m}^3}$ .  
A) 20 B) 100 C) 50 D) 10
24. G'altakning o'lchamlarini uning induktivligi 2 marta ortadigan qilib o'zgartirildi. G'altakdan o'tayotgan tokni 2 marta kamaytirildi. G'altakning magnit maydon energiyasi qanday o'zgaradi?  
A) *o'zgarmaydi* B) 2 marta kamayadi  
C) 2 marta ortadi D) 4 marta ortadi
25. Induktivligi 0,4 H bo'lgan o'tkazgichning induktiv qarshiligi ( $\Omega$ ) tok chastotasi 50 Hz bo'lganda qanday?  
A) 113 B) 20 C) 126 D) 200

26. Prujinaga birinchi jism osilganda prujina 2 sm ga cho'zildi, ikkinchi jism osilganda yesa 3 sm ga cho'zildi. Ikkala jism birgalikda osilganda prujina qancha (sm) cho'ziladi?  
A) 1,2 B) 2,5 C) 2,0 D) 5,0
27. Metallarda erkin elektronlarning tezligi  $1,1 \cdot 10^5$  m/s bo'lsa, uning kinetik energiyasi (J) nimaga teng?  
A)  $6 \cdot 10^{20}$  B)  $5,5 \cdot 10^{-21}$  C)  $5,5 \cdot 10^{-20}$   
D)  $5 \cdot 10^{-20}$
28. Buyum va uning tasviri orasidagi masofa  $l$  ga teng bo'lib, tasvir buyumdan  $n$  marta katta bo'lsa, linzaning fokus masofasini ( $F$ ) toping.  
A)  $\frac{n+1}{n^2}$  B)  $\frac{n}{(n+1)^2 l}$  C)  $\frac{ln}{(n+1)^2}$   
D)  $\frac{l(n+1)}{n^2}$
29. Og'irligi 100 N bo'lgan jismning zichligi  $500 \text{ kg/m}^3$  bo'lgan suyuqlikdagi og'irligi 60 N. Boshqa bir suyuqlikdagi og'irligi esa 80 N ga teng. Ikkinchi suyuqlikning zichligini ( $\text{kg/m}^3$ ) toping.  
A) 250 B) 1000 C) 150 D) 125
30. Loshmida sonini belgilang.  
A)  $2,7 \cdot 10^{25} \text{ m}^{-1}$  B)  $2,3 \cdot 10^{25} \text{ m}^{-3}$   
C)  $2,3 \cdot 10^{25} \text{ m}^{-1}$  D)  $2,7 \cdot 10^{25} \text{ m}^{-3}$
31. Uzoq masofaga uchayotgan kosmik kemaning tezligi harakat boshidan 1 soat o'tgach  $1000 \text{ km/s}$  ga yetdi. Kemaning tezlanishini ( $\text{m/s}^2$ ) toping.  
A) 0,278 B) 100 C) 1000 D) 278
32. Tomonlari 0,5 m bo'lgan yog'och kub ko'lda  $2/3$  qismi botgan holda suzib yuribdi. Shu kubni suvga to'liq botirish uchun qanday minimal ish (J) bajarish kerak?  
A) 68 B) 54 C) 34 D) 74
33.  $16^\circ\text{C}$  temperaturada  $4 \text{ m}^3$  havoda 40 g suv bug'i bor. Nisbiy namlikni (%) toping.  
 $\rho_{16^\circ\text{C}} = 13,6 \text{ g/m}^3$   
A) 34 B) 74 C) 85 D) 21
34. Tebranish konturidagi tok kuchining vaqt bo'yicha o'zgarish tenglamasi quyidagi ko'rinishda berilgan  $I = 0,02 \sin 400\pi t$  (A). Konturning induktivligi 1 H ga teng. Kondensator qoplamalaridagi maksimal potentsiallar farqini (V), magnit va elektr maydonlarning maksimal energiyasini (J) toping.  
A) 24;  $3 \cdot 10^{-4}$  B) 26;  $9 \cdot 10^{-4}$  C) 23;  $7 \cdot 10^{-4}$   
D) 25,1;  $2 \cdot 10^{-4}$
35. Massasi 4,9 kg bo'lgan jism 2,5 kg massali qo'zg'almas jism bilan to'qnashgandan keyin bu ikki jismlar sistemasining kinetik energiyasi 5 J ga teng bo'lib qolgan. Urilishni markaziy va noelastik hisoblab birinchi jismning urilishdan oldingi kinetik energiyasini (J) toping.  
A) 7,0 B) 8,5 C) 8,0 D) 7,55
36. Tomonlari 30 sm dan bo'lgan kvadratning uchta uchida har biri 20 nC dan bo'lgan uchta bir xil zaryad joylashgan. Bu zaryadlar tomonidan kvadratning to'rtinchi uchida joylashgan 10 nC zaryadga ta'sir etuvchi kuchni ( $\mu\text{N}$ ) toping.  
A) 38 B) 40 C) 30 D) 35

### INGLIZ TILI

- Choose the answer which correctly completes the sentence.  
The twins were difficult to tell apart, particularly when they wore very ... clothing.  
A) *alike* B) *different* C) *the same*  
D) *similar*
- Choose the answer which correctly completes the sentence.  
You can't go on holiday without ... money.  
A) *many* B) *any* C) *no* D) *some*
- Choose the answer which correctly completes the sentence.  
I dislike using credit cards, so I always pay ... cash.  
A) *in* B) *with* C) *from* D) *by*
- Choose the answer which correctly completes the sentence.  
The last ice age ... have ended over 10,000 years ago, but from a historical point of view it was a relatively recent event.  
A) *was to* B) *may* C) *could* D) *should*

5. Choose the answer which correctly completes the sentence.  
Once a busy city, Pompeii was destroyed by the eruption of ... Mount Vesuvius in 79 A.D.  
A) a B) an C) - D) the
6. Choose the answer which correctly complete the sentence.  
While Dan was washing up the dishes the girls ... the kitchen.  
A) was cleaned B) cleaned  
C) were cleaning D) were cleaned
7. Choose the answer which correctly completes the sentence.  
She would have recognised him if she ... him before.  
A) see B) would see C) saw D) had seen
8. Choose the answer which correctly completes the sentence.  
I advise you to buy a Volkswagen . . . .  
Volkswagen cars are cheap, they last a long time.  
A) even though B) because C) despite  
D) as
9. Choose the answer which correctly completes the sentence.  
"Did it rain last week?"  
Do you know ... last week.  
A) if it had rained B) did it rain  
C) if did it rain D) whether it rained
10. Choose the answer which correctly completes the sentence.  
How about ... out for a meal tonight?  
A) going B) went C) to go D) go
11. Choose the answer which correctly completes the sentence.  
We invited Peter for dinner yesterday, and he came round ... we were eating.  
A) till B) during C) as soon as D) while
12. Choose the answer which correctly completes the sentence.  
The cause of car accident ... at present.  
A) is investigated B) is being investigated  
C) have been investigated  
D) are being investigated
13. Choose the answer which correctly completes the sentence.  
Neither David nor Jane ... to University.  
A) go B) goes C) are going D) going
14. Choose the answer which correctly complete the sentence.  
The news is going ... tomorrow or the day after tomorrow.  
A) be announced B) to be announced  
C) is announcing D) to announce
15. Choose the answer which correctly complete the sentence.  
The man was made ... all the questions in court.  
A) to answer B) answering C) answer  
D) answered
16. Choose the answer which correctly completes the sentence.  
Dad, I have nothing to wear. The jeans you bought me ... fit me.  
A) isn't B) doesn't C) don't D) aren't
17. Choose the answer which correctly completes the sentence.  
Once he was skiing too fast down a mountain, when he crashed into ... tree.  
A) an B) - C) a D) the
18. Choose the answer which correctly complete the sentence.  
You shouldn't get offended. You ... Nick. He didn't mean to hurt you.  
A) must misunderstand  
B) must have misunderstood  
C) mustn't understand  
D) must be understanding
19. Choose the answer which correctly completes the sentence.  
Geese are not the same ... ducks. Geese are usually larger and have longer necks.  
A) like B) as C) so D) such
20. Choose the answer which correctly completes the sentence.  
The children shouldn't play outside in cold weather, and ...  
A) she should neither B) neither she should  
C) neither should she D) she should either

21. Choose the answer which correctly completes the sentence.

The crowd was full of ... as the fireworks started.

- A) *exciting* B) *excitement* C) *excite*  
D) *excited*

22. Choose the answer which correctly completes the sentence.

You will see nothing ... you use a microscope. It is the most interesting insect.

- A) *if* B) *providing* C) *unless* D) *in case*

23. Choose the answer which correctly completes the sentence.

The sky grew ... as the storm approached.

- A) *darkly* B) *darkness* C) *dark*  
D) *darken*

Read the text. Then choose the correct answer to question 24-26.

When the first cars hit British roads in the late 19th century, they had an unusual safety feature. Every "horseless carriage" was guided by a man walking in front waving a red flag to warn other road users of the vehicle's approach. These early precautions, known as the "red flag laws", seem laughable now. However, future generations may look at current safety measures in much the same way. In the US state of Nevada, the government has begun to draft a set of regulations that will allow self-driving vehicles on its roads. These cars will have technological advantages such as cameras that determine exactly where other cars are and how fast they are moving. Promoters of the self-driving cars believe they will save time and fuel, and reduce traffic jams. If these cars become a reality, there may be a dramatic decrease in human drivers on the roads. People who still want the pleasure of driving themselves will someday have to warn other road users that they are engaging in such a dangerous activity. People then might consider reintroducing the red flags.

24. The author of the passage thinks that ...

- A) *many cars will not be driven by humans when unmanned cars come into existence.*  
B) *road users rely heavily on self-driving cars due to their technological advantages.*  
C) *precautions taken by the British were not as effective as those of the Nevada government.*  
D) *current technology is insufficient to meet safety needs on today's roads.*

25. It can be understood from the passage that ...

- A) *the designs of self-driving cars will be more attractive than current ones.*  
B) *the technical features of self-driving cars will make them expensive at first.*  
C) *promoters of the self-driving cars believe these cars will have several benefits.*  
D) *we need to build special roads for self-driving cars.*

26. It is inferred in the passage that ...

- A) *the Nevada government was inspired by the "red flag laws" while drafting regulations for self-driving cars.*  
B) *driving a car yourself may be considered dangerous in the future.*  
C) *cars were often used to carry equipment when they were first introduced to British roads in the 19th century.*  
D) *a red flag was generally used to signal the approach of a pedestrian.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Andrew Murphy former (27)... director of Delco Electronics, has pleaded "Not Guilty" to charges that he stole £ 5 million from the company. He claims not to know where the money went. He has suggested (28)... an accountant took the money. Investigators consider it unlikely that anyone else in the company could have committed the crime.

- 27.

- A) *managed* B) *managing* C) *manage*  
D) *to manage*

28.

- A) *who*   B) *that*   C) *where*   D) *what*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

A forest is a thickly wooded area. Forests have a wide (29)... of plants and animals living among the trees. Forests that like cooler climates (30)... largely in the northern hemisphere, far north of the equator. Forest floors are shady places and it can be hard (31)... plants to grow.

29.

- A) *various*   B) *variety*   C) *variable*  
D) *vary*

30.

- A) *are found*   B) *find*   C) *were found*  
D) *found*

31.

- A) *from*   B) *by*   C) *of*   D) *for*

Read the text. Then choose the correct answer to question 32-33

One chilly autumn morning in 1945, five thousand shoppers crowded the pavements outside Gimbels Department Store in New York City. The day before, Gimbels had taken out a full-page newspaper advertisement in the *New York Times*, announcing the sale of the first ballpoint pens in the United States. Within six hours, Gimbels had sold its entire stock of ten thousand ballpoints at \$12.50 each—approximately \$130 at today's prices.

In fact this “new” pen was not new after all, and was just the latest development in a long search for the best way to deliver ink to paper. In 1884 Lewis Waterman had patented the fountain pen, giving him the sole rights to manufacture it. This marked a significant leap forward in writing technology, but fountain pens soon became notorious for leaking. In 1888, a leather tanner named John Loud devised and patented the first “rolling-pointed marker pen” for marking leather. Loud's design contained a reservoir of ink in a cartridge and a rotating ball point that was constantly bathed on one side with ink.

Loud's pen was never manufactured, however, and over the next five decades, 350 additional patents were issued for similar ball-type pens, though none advanced beyond the design stage. Each had their own faults, but the major difficulty was the ink: if the ink was thin, the pens leaked, and if it was too thick, they clogged. Depending on the climate or air temperature, sometimes the pens would do both. Almost fifty years later, Ladislav and Georg Biro, two Hungarian brothers, **came up with** a solution to this problem. In 1935 Ladislav Biro was working as a journalist, editing a small newspaper. He became frustrated by the amount of time he wasted filling fountain pens with ink and cleaning up ink smudges. Ladislav and Georg set about making models of new pen designs and creating better inks to use in them. Ladislav observed the ink in newspaper printing dried rapidly, leaving the paper dry and smudge-free. He was determined to construct a pen using the same type of ink. However, the thicker ink would not flow from a regular pen nib so he had to develop a new type of point. Biro came up with the idea of fitting his



pen with a tiny ball bearing in its tip. As the pen moved along the paper, the ball bearing rotated and picked up ink from the ink cartridge which it delivered to the paper.

32. The problem with the ballpoint pens invented between 1888 and 1935 was that ...
- A) *they were affected by weather conditions*
  - B) *they could not write on ordinary paper*
  - C) *they cost a great deal of money to manufacture*
  - D) *the technology to manufacture them did not exist*
33. What does “**came up with**” in bold mean?
- A) *to move towards*    B) *to reject*
  - C) *to suggest*    D) *to get rid of*

Read the text. Then choose the correct answer to question 34-36.

The Great Pyramid of Giza, a monument of wisdom and prophecy, was built as a tomb for Pharaoh Cheops in 2720 B.C. Despite its antiquity, certain aspects of its construction make it one of the truly great wonders of the world. The four sides of the pyramid are aligned almost exactly on true north, south, east, and west - an incredible engineering feat. The ancient Egyptians were sun worshippers and great astronomers, so computations for the Great Pyramid were based on astronomical observations.

Explorations and detailed examinations of the base of the structure reveal many intersecting lines. Further scientific study indicates that these represent a type of time line of events past, present, and future. Many of the events have been interpreted and found to coincide with known facts of the past.

Others are prophesied for future generations and presently are under investigation.

Was this superstructure made by ordinary beings, or one built by a race superior to any known today?

34. What did the ancient Egyptians base on their calculations?
- A) *advanced tools of measurement*
  - B) *advanced technology*
  - C) *observation of the celestial bodies*
  - D) *knowledge of the earth's surface*

35. Why was the Great Pyramid constructed?
- A) *as an engineering feat*
  - B) *as a religious temple*
  - C) *as a solar observatory*
  - D) *as a tomb for the pharaoh*
36. Why is the Great Pyramid of Giza considered one of the Seven Wonders of the World?
- A) *it is very old*
  - B) *it was selected as the tomb of Pharaoh Cheops*
  - C) *it was built by a super race*
  - D) *it is perfectly aligned to the four cardinal points of the compass and contains many prophesies*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000051**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

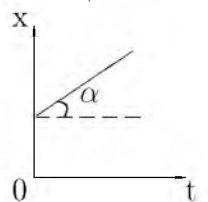
1.  $ABC$  uchburchakda  $a=3$ ;  $b=5$ ;  $\angle C=60^\circ$  bo'lsa,  $c$  ni toping.  
A)  $\sqrt{19}$  B)  $\sqrt{21}$  C)  $\sqrt{23}$  D)  $\sqrt{17}$
2.  $\frac{1}{2} + \frac{1}{24} + \frac{1}{48} + \frac{1}{80} + \frac{1}{120} + \frac{1}{168}$  ni hisoblang.  
A)  $\frac{33}{56}$  B)  $\frac{125}{333}$  C)  $\frac{33}{76}$  D)  $\frac{15}{28}$
3.  $\frac{\sqrt[4]{7\sqrt[3]{54} + 15\sqrt[3]{128}}}{\sqrt[3]{4\sqrt[4]{32} + \sqrt[3]{9\sqrt[4]{162}}}}$  ni hisoblang.  
A)  $\frac{2}{3}$  B)  $\frac{1}{4}$  C) 1 D)  $\frac{3}{5}$
4.  $\frac{\left(\frac{1}{a} + \frac{1}{b} - \frac{2c}{ab}\right)(a+b+2c)}{\frac{1}{a^2} + \frac{1}{b^2} + \frac{2}{ab} - \frac{4c^2}{a^2b^2}}$  ifodani soddalashtiring va uning son qiymatini toping.  
 $a=7,4$ ;  $b = \frac{5}{37}$ .  
A) 0 B)  $\frac{1}{2}$  C) 1 D)  $\frac{4}{5}$
5.  $\frac{a^3 - 2a^2 + 5a + 26}{a^3 - 5a^2 + 17a - 13}$  kasrni qisqartiring.  
A)  $\frac{a-2}{a+2}$  B)  $\frac{1-a}{a+2}$  C)  $\frac{a+2}{a-1}$  D)  $\frac{a+2}{a-2}$
6. Agar  $x \in [-1; 2]$  bo'lsa,  $y = 5^x$  funksiya qaysi oraliqda yotadi?  
A) (0; 25] B) [0, 2; 25] C) (0;  $\infty$ )  
D) [1; 5]
7. Zavodning 3 ta sexida 2740 nafar ishchi ishlaydi. Ikkinchi sexda birinchisiga nisbatan 140 ta ko'p ishchi, uchinchi sexda esa ikkinchisiga nisbatan 1,2 marta ko'p ishchi ishlaydi. Har bir sexda qanchadan ishchi ishlaydi?  
A) 760; 900; 1080 B) 760; 980; 1000  
C) 790; 900; 1050 D) 750; 900; 1090
8. Ikki xonali son raqamlari kvadratlarining yig'indisi 13 ga teng. Agar undan 9 ni ayirsak, shu son raqamlarining teskari tartibda yozilgani kelib chiqsa, ikki xonali sonning raqamlari yig'indisini toping.  
A) 5 B) 6 C) 8 D) 7
9.  $f'(x) = 12x^5 - 4x^3 - 2x + 5$ ,  $f(-1) = 0$ ,  $f(1) = ?$   
A) 8 B) -10 C) -8 D) 10
10. To'g'ri burchakli uchburchakning gipotenuzasi  $c$  ga, unga ichki chizilgan aylana radiusi  $r$  ga teng bo'lsa, uchburchakning yuzini toping.  
A)  $c^2 + cr$  B)  $2cr$  C)  $r^2 + cr$  D)  $r^2 + c^2$
11. To'g'ri to'rtburchakning bo'yi kvadratning tomonidan 8 m uzun, eni esa shu kvadrat tomonidan 4 m qisqa. Kvadrat tomonini  $x$  bilan belgilab, to'g'ri to'rtburchak perimetri va yuzi uchun ifoda tuzing.  
A)  $P = 4x + 4$ ;  $S = x^2 + 4x - 18$   
B)  $P = 4x + 8$ ;  $S = 4(x + 8)$   
C)  $P = 4x + 2$ ;  $S = (x + 8)(x - 4)$   
D)  $P = 4(x + 2)$ ;  $S = (x + 8)(x - 4)$
12. Agar arifmetik progressiyada  $S_{13} = 52$  bo'lsa,  $a_7$  ni toping.  
A) 5 B) 4 C) 3 D) 8
13.  $\sqrt[3]{x+2} + \sqrt[3]{x+3} + \sqrt[3]{x+4} = 0$  tenglama ildizlarining yig'indisini toping.  
A) 1 B) 2 C) -5 D) -3
14.  $\log_2(x^2 + 2x + 4) + \log_2(x - 2) < \log_2(x^3 - x^2 + 4x - 3)$  tengsizlikni yeching.  
A) (2; 5) B) (-1; 5) C) (1; 5) D) (-1; 2)
15. Arifmetik progressiyada  $a_4 + a_7 = 10$  bo'lsa,  $a_2 + a_9$  ni toping.  
A) 11 B) 8 C) 9 D) 10
16.  $\sin x = \cos 2x$  tenglamani yeching.  
A)  $\frac{\pi}{3} + \frac{2\pi k}{3}$ ,  $k \in Z$   
B)  $\frac{\pi}{6} + \frac{\pi k}{3}$ ,  $k \in Z$   
C)  $\frac{\pi}{6} + \frac{2\pi k}{3}$ ,  $k \in Z$   
D)  $\frac{2\pi}{3} + \frac{\pi k}{3}$ ,  $k \in Z$
17. Doiraning yuzi  $6,25\pi$  ga teng. Bu doirada uzunligi 3 ga teng bo'lgan vatar o'tkazilgan. Doira markazidan vatargacha bo'lgan masofani toping.  
A) 3 B) 4 C) 2,5 D) 2
18.  $2012^{2011^{2010}}$  sonining oxirgi raqamini toping.  
A) 8 B) 4 C) 2 D) 6

19.  $y = \frac{2x - 1}{\sqrt{x^2 - 5x + 6}}$  funksiyaning aniqlanish sohasini toping.  
 A)  $(-2; 3)$   
 B)  $(-\infty; 2) \cup (3; \infty)$   
 C)  $(-\infty; 3)$   
 D)  $(0; 2)$
20. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $2\sqrt{3}$  sm bo'lsa, shu aylanaga ichki chizilgan kvadratning yuzini ( $\text{sm}^2$ ) hisoblang.  
 A) 18 B) 20 C) 16 D) 12
21.  $f(x) = \log_4 x + 4e^{2x}$ ,  $f'(x) = ?$   
 A)  $\frac{1}{x} + 8e^{2x}$  B)  $\frac{1}{x \ln 4} + 8e^{2x}$  C)  $x \ln 4 + 8e^x$   
 D)  $\frac{1}{\ln 4} + 8e^x$
22. Silindrga shar ichki chizilgan. Silindr o'q kesimining diagonali  $l$  ga teng bo'lsa, shar sirtining yuzini hisoblang.  
 A)  $\frac{\pi}{3} \cdot l^2$  B)  $\pi \cdot l^2$  C)  $\frac{\pi}{4} \cdot l^2$  D)  $\frac{\pi}{2} \cdot l^2$
23.  $\frac{x^2 - 5x - 6}{x^2 - 4x + 10} \leq 0$  tengsizlikni yeching.  
 A)  $\left(\frac{1}{2}; 6\right)$   
 B)  $(0; 3)$   
 C)  $[-1; 6]$   
 D)  $[0; 5]$
24.  $|x + 1| = |x - 1|$  tenglamaning ildizlarini toping.  
 A)  $-1; 0$  B)  $\emptyset$  C)  $-1; 1$  D)  $0$
25.  $ABC$  uchburchak berilgan.  $AB$  to'g'ri chiziqqa parallel tekislik bu uchburchakning  $AC$  tomonini  $A_1$  nuqtada,  $BC$  tomonini  $B_1$  nuqtada kesib o'tadi.  $AB=15$  sm,  $AA_1 : AC = 2 : 3$  bo'lsa,  $A_1B_1$  kesma uzunligini (sm) toping.  
 A) 2 B) 3 C) 4 D) 5
26. Yo'lovchi yuqoriga harakatlanib, harakatsiz eskalatorlarda 3 minutda, harakatlanayotgan eskalatorlarda 45 sekundda ko'tariladi. Eskalatorlarda harakatsiz turgan yo'lovchi qancha vaqtda (min) ko'tariladi?  
 A) 2,5 B) 1,5 C) 1 D) 2
27. Agar  $|\vec{AB}| = |\vec{AC}| = |\vec{AB} + \vec{AC}| = 4$  bo'lsa,  $|\vec{CB}|$  ning qiymatini toping.  
 A) 4,5 B)  $4\sqrt{2}$  C)  $2\sqrt{3}$  D)  $4\sqrt{3}$
28.  $x^2 - 3x - 6\sqrt{3x} + 18 = 0$  tenglama ildizlari ko'paytmasining ildizlari soniga ko'paytmasini toping.  
 A)  $\frac{2}{3}$  B) 3 C) -3 D) 6
29. 2 ta parallel to'g'ri chiziqni uchinchi to'g'ri chiziq kesib o'tganda hosil bo'lgan ichki bir tomonli burchaklar  $\frac{7}{13}$  nisbatda. Ulardan kattasini toping.  
 A)  $113^\circ$  B)  $117^\circ$  C)  $120^\circ$  D)  $63^\circ$
30.  $0,25 < \frac{y^2 - 0,25y + 1}{1 + y^2} < \frac{15}{16}$  tengsizlikning tub sonlardan iborat yechimlari nechta?  
 A) 2 B) 3 C) 5 D) 4
31. Dastur asosida boshqariladigan birinchi hisoblash mashinasini kim va qachon ixtiro qilgan?  
 A) 1930 yil, V.Bush B) 1941 yil, K.Suze  
 C) 1944 yil, G.Eyken D) 1907 yil, Li de Fores
32. Protsessorlardan ma'lumotlarni baytlarda olib, qurilmalarga bitlarda uzatadigan port turini aniqlang.  
 A) parallel B) ketma-ket C) slot  
 D) shina
33. Kompyuter uchun yangi dasturlar tayyorlash va tahrirlashni yengillashtiruvchi dasturlar qanday nomlanadi?  
 A) Sistema dasturlari B) Amaliy dasturlar  
 C) Uskunaviy dasturlar D) Utilitalar
34. MS Excel 2003 da berilgan shartni qanoatlantiruvchi satrlarni ajratib olish amali qanday ataladi?  
 A) filtrlash B) tartiblash C) avtofiltr  
 D) hisobga olish
35. Kompyuter ekranida aks etgan holatni rasmga olish uchun qaysi klavishlardan foydalaniladi?  
 A) Shift + Delete B) Ctrl + Alt + Delete  
 C) Print Screen / Sys Rq D) Ctrl + F12

36. Paskal dasturi lavhasidagi write protsedurasi necha marta bajariladi?  
for i:=1 to 3 do for j:=0 to 3 do write (i+j);  
A) 1 marta B) 3 marta C) 12 marta  
D) 9 marta

### FIZIKA

- Quyidagilardan qaysi biri kuch impulsi va jism impulsi orasidagi munosabatni ifodalaydi?  
A)  $\vec{M} = \vec{F} \cdot r$  B)  $\vec{F}t = m\vec{v} - m\vec{v}_0$   
C)  $M = Ft - Fm_0$  D)  $Ft = m_1v_1 + m_2v_2$
- 5 m/s tezlik bilan harakatlanayotgan jism kinetik energiyasi 50 J bo'lsa, uning impulsini (kg·m/s) toping.  
A) 25 B) 15 C) 10 D) 20
- Tebranish konturi sig'imi 400 pF bo'lgan kondensatordan va induktivligi 10 mGn bo'lgan g'altakdan iborat. Kuchlanish amplitudasi 500 V bo'lsa, tok kuchi (mA) amplitudasini toping.  
A) 10 B) 0,01 C) 100 D) 0,1
- Atom holatidagi kislorod zarrachalarining 138°C dagi o'rtacha kvadratik tezliklarini (m/s) aniqlang.  $M_{atom}=16$  g/mol,  $R=8,3 \frac{J}{K \cdot mol}$   
A) 650 B) 840 C) 540 D) 800
- 3 kg massali 15 m/s tezlik bilan harakatlanayotgan aravacha unga qarama-qarshi yo'nalishda xuddi shunday tezlikda harakatlanayotgan 1 kg massali aravachaga urilib, unga yopishib qoldi. Ularning birgalikdagi tezligini (m/s) toping.  
A) 5 B) 15 C) 13,2 D) 7,5
- 220 V kuchlanishli tarmoqqa ulangan lampochkadan 1 A tok o'tmoqda. Lampochkada tok bajargan ishning 4% yorug'lik energiyasiga aylanadi. Lampochkada 0,5 soat davomida qancha yorug'lik energiyasi (J) tarqaladi?  
A) 15400 B) 15000 C) 15840 D) 15800
- Isitgich elektr choynakda boshlang'ich temperaturasi 10°C bo'lgan 2 kg massali suvni quvvati 1 kVt bo'lgan. Elektr choynakning FIK 90%. Agar kuchlanish 220 V bo'lsa, isitgich elementining elektr spiralidagi tok kuchi (A) qanday bo'ladi?  
A) 45 B) 4500 C) 450 D) 4,5
- Qaytgan nurni 20° ga burish uchun ko'zguni qanchaga burish kerak?  
A) 10° B) 5° C) 20° D) 40°
- Yerdan  $h$  balandlikda  $v$  tezlik bilan gorizontal otilgan jism  $L_1$  masofaga tushsa yerdan  $4h$  balandlikda  $2v$  tezlik bilan gorizontal otilgan jism necha  $L_2$  masofaga borib tushadi?  
A) 4 B) 1 C) 3 D) 2
- Aylana bo'ylab tekis harakat qilayotgan moddiy nuqtaning chiziqli tezligi 2 m/s va burchak tezligi 5 rad/s bo'lsa, markazga intilma tezlanishini (m/s<sup>2</sup>) toping.  
A) 10 B) 15 C) 20 D) 5
- 27°C temperaturada yopiq idishdagi gazning bosimi 150 kPa edi. -13°C da bosim (kPa) qanday bo'ladi?  
A) 65 B) 130 C) 72 D) 100
- 40 l 10°C li suvga 20 l 40°C li suv aralastirildi. Aralashmaning haroratini (°C) toping.  
A) 24 B) 22 C) 20 D) 28
- Boshqa jismlardan uzoqda joylashgan mis sharcha to'liqin uzunligi 180 nm bo'lgan elektromagnit to'liqin bilan nurlantirilganda qanday maksimal potentsialgacha (V) zaryadlanadi? Elektronning zaryadi  $-1,6 \cdot 10^{-15}$  Kl, mis uchun elektronlarning chiqish ishi 4,4 eV.  
A) 6 B) 2,8 C) 4,7 D) 2,5
- Metall o'tkazgichni qizdirsak, uning solishtirma elektr qarshiligi qanday o'zgaradi?  
A) ortadi B) o'zgarmaydi  
C) avval ortib so'ngra kamayadi D) kamayadi
- Tebranish konturidagi tok kuchining vaqt bo'yicha o'zgarish tenglamasi quyidagi ko'rinishda berilgan  $I = 0,02 \sin 400\pi t$  (A). Konturning induktivligi 1 H ga teng. Kondensator qoplamalaridagi maksimal potentsiallar farqini (V), magnit va elektr maydonlarning maksimal energiyasini (J) toping.  
A) 26;  $9 \cdot 10^{-4}$  B) 25,1;  $2 \cdot 10^{-4}$  C) 23;  $7 \cdot 10^{-4}$   
D) 24;  $3 \cdot 10^{-4}$

16. Induksiya vektorining moduli 100 mT bo'lgan bir jinsli magnit maydonining kuch chiziqlariga  $30^\circ$  burchak ostida 2 km/s tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2 \mu\text{C}$  ga teng.  
A) 0,4 B) 4 C) 2 D) 0,2
17. Yashil shisha orqali qizil harflarga qaralsa, ular qanday rangda ko'rinadi?  
A) qizil B) qora C) yashil D) jigarrang
18. Kislorod atomining massasi uning yadrosi massasidan necha marta katta?  
A)  $\approx 1840$  B)  $\approx 1$  C)  $\approx 10^5$   
D)  $\approx 16 \cdot 1840$
19. Berilgan grafikdan foydalanib,  $\alpha=23^\circ$  bo'lganda jism tezligini (m/s) toping.  $\sin 23^\circ=0,39$ ;  $\cos 23^\circ=0,92$
- 
- A) 0,39 B) 0,4245 C) 2,36 D) 0,92
20. Massasi 350 kg bo'lgan chelak tekis tezlanuvchan harakat bilan quduqqa tushirilmoqda. Birinchi 10 s da u 35 m tushadi. Chelak osilgan arqonning taranglik kuchini (N) toping.  $g=9,8 \text{ m/s}^2$   
A) 3200 B) 3300 C) 3250 D) 3330
21. Ideal gazning massasi o'zgarmagani holda uning hajmi 4 marta kamaytirilib, bosimi 7 marta orttirilsa, gazning ichki energiyasi necha marta ortadi?  
A) 7/4 B) 4/11 C) 11/4 D) 4/7
22.  $27^\circ\text{C}$  da bir atomli 10 mol gazning ichki energiyasi qanday (kJ)?  
A) 37,4 B) 30,4 C) 38,4 D) 29,4
23. Radiuslari teng bo'lgan metall sharlarning biri dastlab  $+q$  ikkinchisi  $+2q$  elektr zaryadiga ega. Agar sharlar bir-biriga tekizilsa va dastlabki holatga qaytarilsa ularning ta'sirlashuv energiyasi qanday o'zgaradi?  
A) 18% ga ortadi B) 9% ga kamayadi  
C) 12,5% ga ortadi D) o'zgarmaydi
24. 220 V kuchlanishli elektr tarmoqqa ulangan elektr lampochkadan 1 A tok o'tmoqda. Shu lampochkani 110 V kuchlanishli elektr tarmoqqa ulansa, undan qancha tok kuchi (A) o'tadi?  
A) 1 B) 0,5 C) 3 D) 2
25. Berilgan inersial sanoq sistemasida jism massasining uning harakat tezligiga bog'liqligi qanday ifodalanadi?  
A)  $m = \rho V$   
B)  $m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}$   
C)  $\Delta m = \frac{\Delta E}{c^2}$   
D)  $m = \frac{2E_k}{v^2}$
26. Agar shishadan tayyorlangan qavariq linzaning fokus masofasi shu linzaning egrilik radiusiga teng bo'lsa, shishaning sindirish ko'rsatkichi nimaga teng?  
A) 2 B) 1,5 C) 1,2 D) 3
27. Osilgan prujinaga yuk 0,5 s davr bilan tebranmoqda. Agar yuk prujinadan olinsa, prujina qanchaga qisqaradi (sm)?  
A) 39,7 B) 2,0 C) 6,3 D) 5,4
28. Neft quduqdan diametri 60 mm bo'lgan quvur orqali ko'tariladi. Har soatda 9,12 t neft ko'tarilayotgan bo'lsa, neftning oqish tezligini (m/s) toping. Neftning zichligi  $800 \text{ kg/m}^3$ .  
A) 5 B) 1,12 C) 1,2 D) 1,8
29. Birinchi o'tkazgichning uzunligi 2 m, ko'ndalang kesim yuzasi  $2 \text{ mm}^2$ , ikkinchi o'tkazgichning uzunligi 4 m, ko'ndalang kesim yuzasi  $1 \text{ mm}^2$ . Bu o'tkazgichlarning qarshiliklari  $R_1$  va  $R_2$  qanday munosabatda bo'ladi?  
A)  $R_1 = R_2$  B)  $R_2 = 2R_1$  C)  $R_2 = 4R_1$   
D)  $R_1 = 4R_2$
30. Gaz boshlangich 6 l hajmdan 4 l gacha izotermik siqilgan. Bunda uning bosimi  $2 \cdot 10^5 \text{ N/m}^2$  ga ortgan. Gazning boshlang'ich bosimi ( $\text{N/m}^2$ ) qanday?  
A)  $20 \cdot 10^5$  B)  $2 \cdot 10^5$  C)  $4 \cdot 10^5$  D)  $4 \cdot 10^6$

31. 5 kg massali yuk qiya tekislikdan 20 N kuch ta'sirida ko'tarildi. Qiya tekislikning uzunligi 10 m, balandligi 3 m. Qiya tekislikning foydali ish koeffitsienti (%) nimaga teng?

- A) 90 B) 50 C) 60 D) 75

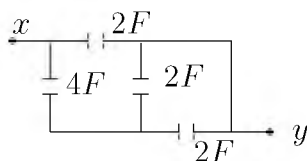
32. Massasi 5000 t bo'lgan poyezd 36 km/soat tezlik bilan harakatlanmoqda. Agar tormozlanish kuchi 0,25 MN ga teng bo'lsa, tormozlangandan keyin bir minut ichida poyezd qancha masofani (m) o'tadi?

- A) 510 B) 5000 C) 5100 D) 51

33. Marmar plitaning havodagi og'irligi 405 N. Uni suvda ushlab turish uchun qanday kuch (N) kerak? Marmarning zichligi  $2,7 \text{ g/sm}^3$ ,  $g=10 \text{ m/s}^2$

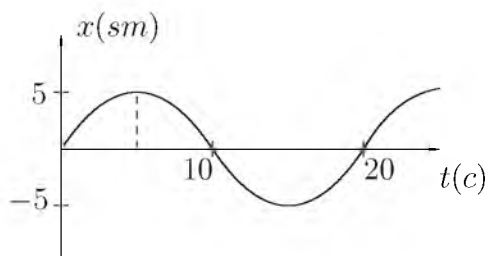
- A) 555 B) 150 C) 255 D) 405

34. Rasmdagi  $x$  va  $y$  nuqtalar orasidagi umumiy kuchlanish 40 V. Kondensatorlarda to'plangan energiyani (J) toping.



- A) 800 B) 600 C) 400 D) 3200

35. Kichik jism elastik prujina osildi va tebranish hosil qilindi. Uning tebranish qonuni chizmadagidek ko'rishishga ega bo'lsa,  $\pi/4$  fazadagi impulsini ( $\text{kg}\cdot\text{m/s}$ ) aniqlang.



- A) 50 B) 0 C) 75 D) 5

36. Solenoiddagi tok kuchi 1,5 A bo'lganda, undan 150 mWb magnit oqimi o'tsa, uning induktivligini (Hz) aniqlang.

- A) 0,3 B) 0,1 C) 0,5 D) 1

1. Choose the answer which correctly complete the sentence.

The news is going ... tomorrow or the day after tomorrow.

- A) *be announced* B) *to announce*  
C) *is announcing* D) *to be announced*

2. Choose the answer which correctly complete the sentence.

Tomorrow at 6 p.m they will be out They will be ... at the party.

- A) *presenting* B) *present* C) *presents*  
D) *presented*

3. Choose the answer which correctly complete the sentence.

They have promised to lend me a tennis racket so I ... take mine.

- A) *don't have to* B) *can't* C) *mustn't*  
D) *daren't*

4. Choose the answer which correctly completes the sentence.

The extent of Christina's knowledge on various complex subjects ... us.

- A) *to surprise* B) *surprises* C) *surprise*  
D) *surprising*

5. Choose the answer which correctly complete the sentence.

We hurried to the airport, but the plane ... a few minutes ago.

- A) *take off* B) *was taken off*  
C) *has taken off* D) *took off*

6. Choose the answer which correctly completes the sentence.

I advise you to buy a Volkswagen . . . .

Volkswagen cars are cheap, they last a long time.

- A) *even though* B) *despite* C) *as*  
D) *because*

7. Choose the answer which correctly completes the sentence.

This newspaper has a long ... of attacking corruption and mismanagement.

- A) *traditionally* B) *traditional* C) *tradition*  
D) *traditionalism*

8. Choose the answer which correctly completes the sentence.  
When did you ... the books back?  
A) *had to give* B) *have to give* C) *can give*  
D) *must give*
9. Choose the answer which correctly completes the sentence.  
He wanted to join the police force but they turned him ... because he was too short.  
A) *off* B) *down* C) *away* D) *up*
10. Choose the answer which correctly complete the sentence.  
If you can't start the car, why don't you try ... it with all your force?  
A) *pushing* B) *pushed* C) *push*  
D) *pushes*
11. Choose the answer which correctly completes the sentence.  
I haven't got enough cash. Can I pay ... cheque?  
A) *in* B) *by* C) *from* D) *with*
12. Choose the answer which correctly completes the sentence.  
The class got ... when the professor entered.  
A) *quiet* B) *quietly* C) *quitness*  
D) *quieting*
13. Choose the answer which correctly completes the sentence.  
Ted fell down and broke his wrist ... was a pity.  
A) *what* B) *it* C) *that* D) *which*
14. Choose the answer which correctly complete the sentence.  
I wish that the car ... faster.  
A) *went* B) *would have gone* C) *would go*  
D) *will go*
15. Choose the answer which correctly complete the sentence.  
I've got three new dresses: a red one and two black dresses. I think I'll wear ... red one.  
A) *a* B) *-* C) *the* D) *some*
16. Choose the answer which correctly completes the sentence.  
The twins were difficult to tell apart, particularly when they wore very ... clothing.  
A) *alike* B) *different* C) *similar*  
D) *the same*
17. Choose the answer which correctly completes the sentence.  
Most rocks contain several minerals, but limestone contains only one and...  
A) *so does marble* B) *marble is so*  
C) *so marble does* D) *so is marble*
18. Choose the answer which correctly complete the sentence.  
It looks like rain. Have ... look at the sky.  
A) *-* B) *an* C) *a* D) *the*
19. Choose the answer which correctly completes the sentence.  
Nobody can always do whatever ... please in life.  
A) *you* B) *they* C) *she* D) *he*
20. Choose the answer which correctly completes the sentence.  
The beekeeper has observed ... at the approach of a thunderstorm.  
A) *become enraged the bees*  
B) *that bees become enraged*  
C) *enraging the bees* D) *bees enraging that*
21. Choose the answer which correctly completes the sentence.  
You'd better leave by the side door ... someone is watching us.  
A) *so that* B) *in order that* C) *in case*  
D) *unless*
22. Choose the answer which correctly complete the sentence.  
Today the world ... so rapidly, things never stay the same.  
A) *is changing* B) *changes* C) *has changed*  
D) *has been changing*



23. Choose the answer which correctly completes the sentence.

Stop telling us what to do. Let us ... up our own mind.

- A) *to make*   B) *make*   C) *made*  
D) *making*

Read the text. Then choose the correct answer to question 24-26.

One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.

24. The passage tells us that the shrew ...

- A) *is in the habit of eating every two hours.*  
B) *lives in dense forests.*  
C) *is similar to a mouse in appearance*  
D) *has a very short life span.*

25. The passage states that shrews ...

- A) *are the smallest living mammals.*  
B) *eat rarely but in large amounts at a time.*  
C) *eat each other when they can't find any food.*  
D) *are found in huge numbers in Australia.*

26. From what is stated in the passage, we can infer that a shrewish woman is someone who ...

- A) *has tiny eyes and ears.*  
B) *is noticeably smaller than the average.*  
C) *is very fond of velvet and fur.*  
D) *easily gets annoyed.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Andrew Murphy former (27)... director of Delco Electronics, has pleaded "Not Guilty" to charges that he stole £ 5 million from the company. He claims not to know where the money went. He has suggested (28)... an accountant took the money. Investigators consider it unlikely that anyone else in the company could have committed the crime.

- 27.

- A) *managed*   B) *manage*   C) *to manage*  
D) *managing*

- 28.

- A) *who*   B) *that*   C) *where*   D) *what*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

- 29.

- A) *familiarly*   B) *familiar*   C) *familiarize*  
D) *familiarity*

- 30.

- A) *will be*   B) *is*   C) *are*   D) *have been*

31. A) *of* B) *into* C) *with* D) *towards*

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *The danger of two breeds of dolphins disappearing.*  
 B) *The danger of hunting for the Brazilian population.*  
 C) *The breeding of small river dolphins.*  
 D) *Hydro-electric dam projects on the Yangtze river.*

33. What does the number 10 in the text refer to?
- A) *The percentage of living Yangtze river dolphins.*  
 B) *Groups of biologist who are trying to repopulate dolphins.*  
 C) *Governmental organizations which fight the pollution of rivers.*  
 D) *The percentage of Amazonian dolphins which die out every year.*

Read the text. Then choose the correct answer to question 34-36.

The Great Pyramid of Giza, a monument of wisdom and prophecy, was built as a tomb for Pharaoh Cheops in 2720 B.C. Despite its antiquity, certain aspects of its construction make it one of the truly great wonders of the world. The four sides of the pyramid are aligned almost exactly on true north, south, east, and west - an incredible engineering feat. The ancient Egyptians were sun worshippers and great astronomers, so computations for the Great Pyramid were based on astronomical observations.

Explorations and detailed examinations of the base of the structure reveal many intersecting lines. Further scientific study indicates that these represent a type of time line of events past, present, and future. Many of the events have been interpreted and found to coincide with known facts of the past.

Others are prophesied for future generations and presently are under investigation.

Was this superstructure made by ordinary beings, or one built by a race superior to any known today?

34. What did the ancient Egyptians base on their calculations?
- A) *knowledge of the earth's surface*  
 B) *advanced tools of measurement*  
 C) *advanced technology*  
 D) *observation of the celestial bodies*
35. Why was the Great Pyramid constructed?
- A) *as a solar observatory*  
 B) *as a religious temple*  
 C) *as an engineering feat*  
 D) *as a tomb for the pharaoh*

36. Why is the Great Pyramid of Giza considered one of the Seven Wonders of the World?

- A) *it is perfectly aligned to the four cardinal points of the compass and contains many prophesies*
- B) *it was built by a super race*
- C) *it is very old*
- D) *it was selected as the tomb of Pharaoh Cheops*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

## REPITISION TEST TOPSHIRUVCHILAR UCHUN

# SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000052**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1.  $\sqrt{5x-1} + \frac{6}{\sqrt{5x-1}} = \sqrt{5x+15}$  tenglamaniing katta ildizi  $m$  va ildizlarining soni  $n$  bo'lsa,  $m+n$  ni toping.  
A) 4 B) 6 C) 8 D) 3
2.  $\frac{2^{19} \cdot 27^3 + 15 \cdot 4^9 \cdot 9^4}{6^9 \cdot 2^{10} + 12^{10}}$  ni hisoblang.  
A) 2 B)  $\frac{1}{2}$  C) 1 D)  $\frac{1}{3}$
3.  $\arccos(1+x) + 2\arcsin x = 0$  tenglamani yeching.  
A)  $-\frac{1}{2}$  B)  $-1$  C) 0 D)  $\frac{1}{3}$
4. Teng yonli uchburchakning uchidagi tashqi burchagi ichki burchagi bilan 7:5 nisbatda bo'lsa, asosidagi tashqi burchagini toping.  
A)  $127,5^\circ$  B)  $120,5^\circ$  C)  $120^\circ$  D)  $127^\circ$
5. Radiusi  $R$  ga teng bo'lgan doiraning markazidan bir tomonda ikkita bir-biriga parallel vatar o'tkazildi. Bunda ulardan biri  $120^\circ$  li, ikkinchisi  $60^\circ$  li yoylarni tortib tursa, vatarlar orasida joylashgan maydon yuzini toping.  
A)  $\frac{\pi R^2}{4}$  B)  $\frac{\pi R^2}{6}$  C)  $\frac{5\pi R^2}{8}$  D)  $\frac{\pi R^2}{3}$
6. Asosi  $a$ , perimetri 42 bo'lgan to'g'ri to'rtburchakning yuzini hisoblash uchun ifoda tuzing.  
A)  $S = ax$  B)  $S = a(21 - a)$   
C)  $S = a(a - 21)$  D)  $S = a^2 - 21$
7. Ishorasi almashinuvchi geometrik progressiyaning birinchi hadi  $-2$  ga, uchinchi hadi  $-8$  ga teng bo'lsa, shu progressiyaning dastlabki 6 ta hadi yig'indisini toping.  
A) 42 B) 36 C)  $-36$  D)  $-42$
8.  $ABCD$  parallelogrammning  $A$  va  $B$  burchaklaridan chiquvchi bissektrisalar orasidagi burchakni toping.  
A)  $120^\circ$  B)  $40^\circ$  C)  $90^\circ$  D)  $150^\circ$
9.  $1 - \frac{2}{5 - \frac{4}{5 - \frac{6}{x}}}$  ifoda  $x$  ning nechta qiymatida ma'noga ega emas?  
A) 2 B) 1 C) 3 D) 4
10.  $\sqrt{x^2 + 11} - \sqrt{x^2 - 9} = 2$  tenglamani yeching. ( $x \in R$ )  
A)  $-5; 5$  B) 3 C)  $5; 3$  D)  $-3$
11. Muntazam to'rtburchakli prizmaning hajmi  $1944$  ga, yon sirti  $432\sqrt{2}$  ga teng. Prizma asosining simmetriya markazidan ustki asosining uchigacha bo'lgan masofani toping.  
A) 12 B) 8 C) 15 D) 9
12. Muntazam o'nikkiburchakning bitta ichki burchagini hisoblang.  
A)  $145^\circ$  B)  $135^\circ$  C)  $150^\circ$  D)  $140^\circ$
13.  $M$  va  $N$  nuqtalar  $ABC$  uchburchakning  $AB$  va  $AC$  tomonlari o'rtasida yotadi.  $ANM$  uchburchakning perimetri  $21$  sm bo'lsa,  $ABC$  uchburchakning perimetrini (sm) toping.  
A) 42 B) 63 C) 84 D) 50
14.  $|\log_{2013} x - 2| + |\log_{2013} x - 4| < 4$  tengsizlikni yeching.  
A)  $\{2013\}$   
B)  $\{2013; 2013^5\}$   
C)  $\emptyset$   
D)  $\{2013; 2013^5\}$
15. Rombning tomoni  $10\sqrt{3}$  ga, o'tmas burchagi  $120^\circ$  ga teng. Rombga ichki chizilgan doiraning yuzini hisoblang.  
A)  $48,75\pi$  B)  $52,25\pi$  C)  $58,6\pi$  D)  $56,25\pi$
16. Agar  $x = 4$  bo'lsa,  $(3x - 2) \cdot (4x + 1) - (3x - 2) \cdot 4x + 1$  ni toping.  
A) 11 B) 1 C) 0 D) 10
17.  $5^{200}$  sonini 24 ga bo'lganda qoladigan qoldiqni aniqlang.  
A) 23 B) 1 C) 15 D) 3
18.  $x, y$  butun sonlar uchun  $-8 \leq x \leq 19$ ,  $-4 \leq y \leq 13$  va  $x - y \neq 0$  bo'lsa,  $\frac{x+y}{x-y}$  ning eng katta qiymatini toping.  
A) 27 B) 28 C) 32 D) 18
19. Parallelogrammning uchta ketma-ket  $A(-3; -2; 0)$ ,  $B(3; -3; 1)$  va  $C(5; 0; 2)$  uchlari berilgan.  $\vec{AC}$  va  $\vec{BD}$  vektorlar orasidagi burchakni toping.  
A)  $150^\circ$  B)  $60^\circ$  C)  $135^\circ$  D)  $120^\circ$

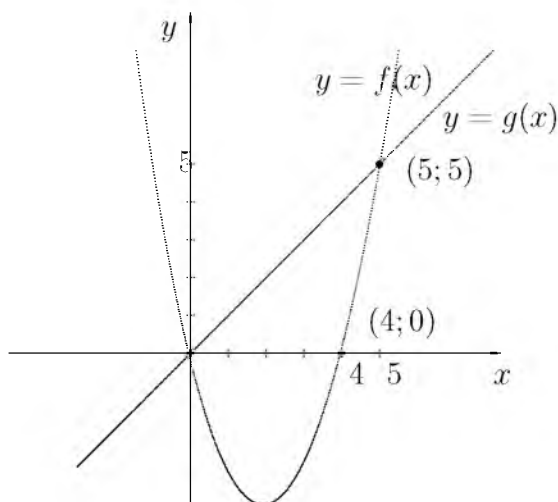
20. Zavodning 3 ta sexida 2740 nafar ishchi ishlaydi. Ikkinchi sexda birinchisiga nisbatan 140 ta ko'p ishchi, uchinchi sexda esa ikkinchisiga nisbatan 1,2 marta ko'p ishchi ishlaydi. Har bir sexda qanchadan ishchi ishlaydi?

- A) 750; 900; 1090    B) 760; 900; 1080  
C) 790; 900; 1050    D) 760; 980; 1000

21.  $\sqrt[4]{\sqrt[3]{25}} \cdot \sqrt[6]{5^5}$  ni hisoblang.

- A)  $5\sqrt[6]{5}$     B)  $\sqrt[3]{5}$     C) 5    D)  $5\sqrt[12]{5}$

22. Quyidagi chizmaga asoslanib  $\frac{f(8)}{g(8)}$  ning qiymatini toping.



- A) 2    B) -4    C) 4    D) 3

23.  $\frac{2x-5}{x+3} > 3$  tengsizlikni yeching.

- A) (-14; 3)  
B)  $(-\infty; -14) \cup (-3; \infty)$   
C)  $(-14; -3) \cup (-3; \infty)$   
D) (-14; -3)

24. Aylananing uzunligi shu aylananing  $40^\circ$  li yoyi uzunligidan necha foiz ko'p?

- A) 800    B) 600    C) 900    D) 700

25. Shar sirtining unga ichki chizilgan kub sirtiga nisbatini toping.

- A)  $\frac{\pi}{4}$     B)  $\frac{\pi}{6}$     C)  $\frac{\pi}{2}$     D)  $\frac{3\pi}{2}$

26. Silindrga muntazam uchburchakli prizma ichki chizilgan, prizmaga esa silindr ichki chizilgan bo'lsa, katta silindr hajmi kichik silindr hajmidan necha marta katta bo'ladi?

- A) 3    B) 6    C) 4    D) 2

27.  $f(x) = \sqrt{2}\sin x - 2x$ ,  $f'(x) = ?$

- A)  $-\sqrt{2}\cos^2 x - 2$     B)  $\cos x + 2$   
C)  $-\cos x - 2$     D)  $\sqrt{2}\cos x - 2$

28.  $\int_0^{\frac{\pi}{12}} \cos 2x dx$  ni hisoblang.

- A)  $\frac{1}{4}$     B)  $\frac{3}{4}$     C)  $\frac{1}{2}$     D)  $\frac{1}{3}$

29. Talaba besh yilda 31 ta imtihon topshirdi. U har keyingi yilda oldingi yildagiga qaraganda ko'p imtihon topshirgan. Beshinchi kursda birinchi kursdagidan 3 marta ko'p imtihon topshirgan bo'lsa, to'rtinchi kursda nechta imtihon topshirgan?

- A) 9    B) 6    C) 8    D) 7

30. Agar  $x \in [-1; 2]$  bo'lsa,  $y = 5^x$  funksiya qaysi oraliqda yotadi?

- A) [1; 5]    B) (0; 25]    C) (0;  $\infty$ )  
D) [0, 2; 25]

31. Agar kitobdagi axborot hajmi 7 Kbayt bo'lsa, uni nechta "Axborot" so'zi bilan almashtirish mumkin?

- A) 1024    B) 2048    C) 2000    D) 14336

32. Hisoblang va o'tkazishni bajaring:

$$27_{10} + 111_2 \rightarrow x_2$$

- A) 100010<sub>2</sub>    B) 100011<sub>2</sub>    C) 100110<sub>2</sub>  
D) 100111<sub>2</sub>

33. Qaysi javobda faqat arxivlangan fayllar kengaytmasi berilgan?

- A) .dll, .zip    B) .xls, .rar    C) .zip, .rar  
D) .exe, .com

34. MS Word 2003 dasturida uskunalar panelini sozlash bo'limi qaysi menyuda joylashgan?

- A) *Файл*(Fayl)    B) *Правка*(Tahrir)  
C) *Вид*(Ko'rish)    D) *Формат*(Format)

35. Nuqtalar o'rniga kerakli iborani tanlang: Foydalanuvchi elektron pochta qutisini Internetga ulangan ... ocha oladi.

- A) faqat o'z kompyuterida  
B) faqat shu pochta ochilgan kompyuterda  
C) ixtiyoriy kompyuterda  
D) faqat server kompyuterda

36. Random ( $x$ ) funksiyasining vazifasini aniqlang.

- A) *Parametrli takrorlash funksiyasi*  
 B)  *$[0, x]$  oraliqdagi tasodifiy sonni aniqlash funksiyasi*  
 C)  *$[0, 1)$  oraliqdagi tasodifiy sonni aniqlash funksiyasi*  
 D) *Tasodifiy harflar generatori*

### FIZIKA

1. Linzaning fokal tekisligi deb nimaga aytiladi?

- A) *linzaning fokuslaridan bosh optik o'qqa perpendikular ravishda o'tkazilgan tekislik*  
 B) *bosh optik o'qqa  $45^\circ$  burchak ostida o'tkazilgan tekislik*  
 C) *linza markazidan o'tgan tekislik*  
 D) *bosh optik o'qqa parallel o'tkazilgan tekislik*

2. Tebranish konturdagi kondensator sig'imi 25 marta ortirilsa, g'altakning induktivligi 16 marta kamaytirilsa, tebranish davri necha marta o'zgaradi?

- A)  *$5/4$  marta ortadi* B)  *$1,6$  marta ortadi*  
 C)  *$1,6$  marta kamayadi* D)  *$4/5$  marta ortadi*

3. Moddiy nuqtaning harakati  $x = 20 + 4t$  qonuniyat bo'yicha ro'y bermoqda. Agar moddiy nuqtaning massasi 14 kg bo'lsa, uning impulsi (kg·m/s) nimaga teng?

- A) 50 B) 56 C) 26 D) 28

4. Hajmi bir litr bo'lgan kub shaklidagi idish suv bilan to'ldirilgan. Suvning idish tubiga va to'rt devoriga bo'lgan umumiy bosim kuchini (N) aniqlang.

- A) 28,3 B) 24,4 C) 30 D) 29,4

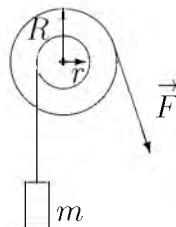
5. Havoning nisbiy namligini o'lchaydigan asbob nima?

- A) *ariometr* B) *psixrometr* C) *barometr*  
 D) *gigrometr*

6. Qavariq sferik ko'zguning egrilik radiusi 1,6 m predmet tasviri o'zi turgan masofaga qaraganda 1,5 marta yaqin bo'lishi uchun uni ko'zgundan qanday masofada (?) joylashtirish kerak?

- A) 0,5 B) 0,4 C) 0,6 D) 0,3

7. Massasi 100 kg bo'lgan yuk bir o'qqa mahkamlangan ikkilangan blok yordamida  $F=500$  N kuch ta'sirida ko'tarilmoqda. Devorga mahkamlangan o'q atrofida aylanayotgan bloklarning radiuslari  $r=10$  sm va  $R=25$  sm bo'lsa, yuk qanday tezlanish ( $m/s^2$ ) bilan ko'tariladi?

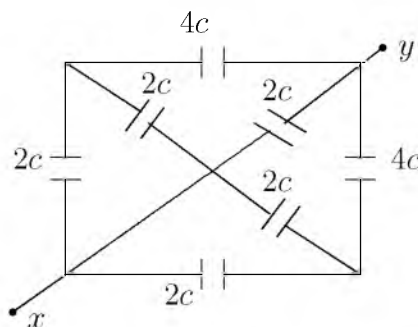


- A) 1,25 B) 25 C) 2,5 D) 2

8. Tutash idishlardan biriga suv ( $\rho_{suv}=1000$  kg/m<sup>3</sup>), ikkinchisiga kerosin ( $\rho_{kerosin}=800$  kg/m<sup>3</sup>) qo'yildi. Suv sathidan kerosin ustuni necha foiziga yuqori bo'ladi?

- A) 18,6 B) 25 C) 50 D) 20

9. Sxemaning umumiy sig'imini toping.



- A) 2C B) 3C C) 4C D) 6C

10. Massasi 10 kg va uzunligi 40 sm bo'lgan tayoqning uchlariga massalari 40 va 10 kg bo'lgan yuklar osilgan. Tayoq muvozanatda turishi uchun uning birinchi uchidan qanday masofada (sm) tayanch qo'yish lozim?

- A) 12 B) 10 C) 11 D) 9

11. Osilgan prujinaga yuk 0,5 s davr bilan tebranmoqda. Agar yuk prujinadan olinsa, prujina qanchaga qisqaradi (sm)?

- A) 5,4 B) 39,7 C) 6,3 D) 2,0

12. 10 m/s tezlik bilan kelayotgan avtomobil keskin tormozlanganda tormozlanish yo'li 10 m bo'lsa, avtomobil g'ildiragi va yo'l orasidagi ishqalanish koeffitsiyentini toping.

- A) 0,05 B) 0,25 C) 0,5 D) 0,1

13. Tovush chastotasining balandligi 80 Gs bo'lgan odam tovushining to'lqin uzunligini (m) aniqlang. Tovush tezligi havoda 340 m/s.  
A) 4,25 B) 6,80 C) 160 D) 5
14. Qarshiligi  $0,5 \omega$  bo'lgan o'tkazgichdan yasalgan yopiq kontur bilan chegaralangan sirtidan o'tuvchi magnit oqimi 0,2 mVb dan 1 mVb gacha tekis ortdi. O'tkazgichning kesimidan qancha zaryad (mKl) o'tgan?  
A) 2,4 B) 3,2 C) 1,8 D) 1,6
15. Chang'ichi  $0,2 \text{ m/s}^2$  tezlanish bilan harakatlanib, uzunligi 50 m bo'lgan qiyalikni 10 s da o'tdi. Uning qiyalik boshidagi tezligi (m/s) qanday bo'lgan?  
A) 3 B) 4 C) 2 D) 5
16. Quvvatning SI dagi o'lchov birligini belgilang.  
A) Nyuton B) Paskal C) Volt D) Vatt
17. Agar ichki qarshiligi  $1 \Omega$  bo'lgan ampermetrga  $0,2 \Omega$  qarshilik parallel ulansa, uning o'lchash chegarasi necha marta orttirilgan bo'ladi?  
A) 8 B) 2 C) 6 D) 4
18. Ikki kosmik kema  $v_1 = v_2 = 0,75c$  tezlik bilan qarama-qarshi yo'nalishda harakatlanmoqda. Birining 2-siga nisbatan tezligi qanday?  
A)  $0,86c$  B)  $c$  C)  $0,9c$  D)  $0,96c$
19. Metall o'tkazgichning ko'ndalang kesim yuzasini o'zgartirmasdan massasini 2 marta kamaytirsak, uning solishtirma elektr qarshiligi qanday o'zgaradi?  
A) 2 marta kamayadi B) 4 marta kamayadi  
C) 2 marta ortadi D) o'zgarmaydi
20. 40 l  $10^\circ\text{C}$  li suvga 20 l  $40^\circ\text{C}$  li suv aralashtirildi. Aralashmaning haroratini ( $^\circ\text{C}$ ) toping.  
A) 28 B) 24 C) 20 D) 22
21. 30 sm uzunlikdagi elastik prujinaga 100 g massali jism mahkamlangan va gorizont tekislikda aylantirilmoqda. Bunda prujina 10 sm ga cho'zilgan. Jismning aylanish tezligi 2 m/s ga teng bo'lsa, prujina bikirligini (N/m) toping.  
A) 10 B) 20 C) 13 D) 17
22. 25 kg toshko'mir batamom yonganda qancha issiqlik (J) ajralib chiqadi?  $q = 2,7 \cdot 10^7 \text{ J/kg}$   
A)  $5 \cdot 10^8$  B)  $6,5 \cdot 10^8$  C)  $6 \cdot 10^8$  D)  $6,75 \cdot 10^8$
23. Ikki sharchaga bir xil  $2 \cdot 10^{-8} \text{ Kl}$  zaryad berilgan zaryadlar vakuumda  $10^{-3} \text{ N}$  kuch bilan ta'sirlashmoqda. Ular orasidagi masofani (sm) toping.  
A)  $\sqrt{6}$  B) 12 C) 10 D) 6
24. Yer sirtidan qanday balandlikda (km) jismning massasi 4 marta kamayadi?  $R = 6400 \text{ km}$   
A) o'zgarmaydi B) 12800 C) 6400  
D) 19200
25. Bosimi 8 MPa bo'lgan gaz izobarik kengayib, hajmi  $0,5 \text{ m}^3$  ga ortdi. Bunda gazga 6 MJ issiqlik miqdori berilgan bo'lsa, gazning bajargan ishini va energiyaning o'zgarishini (MJ) toping.  
A) 2; 4 B) 3; 6 C) 4; 2 D) 6; 3
26. Ideal gazning harorati 4 marta orttirilib, hajmi 2 marta kamaytirilsa, bosim qanday o'zgaradi?  
A) 2 marta ortadi B) 8 marta ortadi  
C) 2 marta kamayadi D) 4 marta ortadi
27. Yadro bombasining portlashi nimadan iborat?  
A) og'ir vodorod yadrolarining sintez reaksiyasidan  
B) poroxning portlashidan  
C) yadrolar parchalanishining zanjirli reaksiyasidan  
D) dinamitning portlashidan
28. O'zgarmas tok manbaiga ulangan  $8 \mu\text{F}$  sig'imli kondensatorga parallel ulangan voltmeter 6 V kuchlanishni ko'rsatdi. Agar bu kondensatorga  $4 \mu\text{F}$  sig'imli ikkinchi kondensator ketma-ket ulansa, voltmeter qanday kuchlanishni (V) ko'rsatadi?  
A) 2 B) 3 C) 6 D) 4
29. Yerdan Oygacha bo'lgan masofa 384 ming km bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?  
A) 1,4 B) 1,2 C) 1,3 D) 1,5
30. Foton energiyasi 3 marta oshsa uning to'lqin impulsi va to'lqin uzunligi necha marta ortadi?  
A) 3 va 3 marta B) 3 va 1,5 marta  
C) 3 va 1/3 marta D) 1,5 va 1/3 marta



31. 120 V ga mo'ljallangan 40 Vt li lampochka 220 V li tarmoqqa ulanganda normal yonishi uchun unga ketma-ket qilib necha metr  $3 \cdot 10^{-4}$  m diametrli nixrom simdan ulash kerak bo'ladi? Nixromning solishtirma qarshiligi  $1,1 \cdot 10^{-6}$  Om·m.  
A) 19,3 B) 9,3 C) 15,3 D) 10,6

32. Bosim 100 Pa, molekullari konsentratsiyasi  $10^{25}$  m<sup>-3</sup> bo'lganda gazning temperaturasini (K) toping.  
A) 725 B) 800 C) 500 D) 650

33. Tebranish konturi sig'imi 200 pF bo'lgan kondensator va induktivligi 10 mH bo'lgan g'altakdan iborat. Agar tok kuchi amplitudasi 1,0 A bo'lsa, kuchlanish amplitudasini (V) toping.  
A) 7290 B) 7200 C) 7070 D) 7380

34. Elektr choynagi 220 V kuchlanishga ulangan holda 3,2 A tok iste'mol qilib 1 l suvni 12 minutda qaynatdi. Suvning boshlang'ich harorati 20°C bo'lsa, FIKni (%) toping.  
$$c_{suv} = 4200 \frac{J}{kg \cdot ^\circ C}$$
  
A) 98 B) 66 C) 71 D) 84

35. Elektron vakuumda induksiyasi  $5 \cdot 10^{-3}$  T bo'lgan bir jinsli magnitoviy maydonda  $10 \cdot 10^3$  km/s tezlik va induksiya chiziqlariga perpendikular yo'nalgan holda harakatlanmoqda. Elektroniga ta'sir etuvchi kuchni toping (N)?  
A)  $4 \cdot 10^{-15}$  B)  $8 \cdot 10^{-15}$  C)  $2 \cdot 10^5$   
D)  $5 \cdot 10^{-15}$

36. 2 m/s boshlang'ich tezlik va 2 m/s<sup>2</sup> tezlanish bilan harakatlanayotgan jismning 4-sekunddagi ko'chishining modulini (m) toping.  
A) 11 B) 8 C) 9 D) 10

## INGLIZ TILI

1. Choose the answer which correctly completes the sentence.  
It took me one and ... half hours to get there.  
A) the B) an C) a D) -

2. Choose the answer which correctly completes the sentence.  
Before Brian started his job last month, he had been told by the manager that he ... dress very smartly.  
A) had to B) could C) ought D) must

3. Choose the answer which correctly completes the sentence.  
I met Caty ... chance when I was shopping in town.  
A) with B) in C) by D) for

4. Choose the answer which correctly complete the sentence.  
Children enjoy going to the zoo. The first zoo ... around 3500 years ago by an Egyptian queen for her personal enjoyment.  
A) was established B) established  
C) has been established D) was establishing

5. Choose the answer which correctly completes the sentence.  
Last week I was held up ... 3 hours because of the traffic.  
A) for B) since C) while D) during

6. Choose the answer which correctly completes the sentence.  
If I had eaten breakfast several hours ago, I ... hungry now.  
A) wouldn't have been B) had been  
C) wouldn't be D) weren't

7. Choose the answer which correctly complete the sentence.  
Most students in Britain ... pay at least part of their university fees.  
A) can B) have to C) may D) ought

8. Choose the answer which correctly completes the sentence.  
You can't have good crops unless you ... the soil. It is usually poor without care and cultivation.  
A) will not cultivate B) cultivate  
C) don't cultivate D) will cultivate

9. Choose the answer which correctly completes the sentence.  
I saw you in the park yesterday. You ... with your friend Tom.  
A) *sat* B) *had sat* C) *sit* D) *were sitting*
10. Choose the answer which correctly completes the sentence.  
They asked me, "Where has she gone?"  
I wonder where ...  
A) *has she gone* B) *she has gone*  
C) *she had gone* D) *had she gone*
11. Choose the answer which correctly completes the sentence.  
Please give him this book. He lives near you, ...?  
A) *he doesn't* B) *does he* C) *lives he*  
D) *doesn't he*
12. Choose the answer which correctly completes the sentence.  
The job of a teacher requires ... education than a taxi driver.  
A) *a few* B) *many* C) *few* D) *more*
13. Choose the answer which correctly completes the sentence.  
Dan's goldfish died when he was away on holiday. His sister forgot ... them.  
A) *being fed* B) *to feed* C) *feeding*  
D) *to be fed*
14. Choose the answer which correctly completes the sentence.  
She thinks those flowers would grow ... - if you gave them some water.  
A) *good* B) *best* C) *better* D) *the best*
15. Choose the answer which correctly complete the sentence.  
After the president of the company had made decision, his resignation ... announced yesterday on television.  
A) *have been* B) *was* C) *-* D) *has*
16. Choose the answer which correctly completes the sentence.  
He's talked about it many times. Any ... discussion is useless.  
A) *farthest* B) *furthest* C) *further* D) *far*
17. Choose the answer which correctly complete the sentence.  
When she got results of her medical tests, she realized that she had been feeling ill since she ... on holiday.  
A) *has been* B) *was* C) *were*  
D) *had been*
18. Choose the answer which correctly completes the sentence.  
Nancy used ... a bike to work, but now she drives.  
A) *to be ridden* B) *to ride* C) *ride*  
D) *riding*
19. Choose the answer which correctly complete the sentence.  
In September, 2000, the people of Denmark voted "no" to joining the single European currency ... euro.  
A) *a* B) *-* C) *an* D) *the*
20. Choose the answer which correctly completes the sentence.  
The five-cent coin looks very Canadian, ... it has a picture of a beaver on it.  
A) *since* B) *despite* C) *when*  
D) *although*
21. Choose the answer which correctly completes the sentence.  
He's always found her to be ... friendly.  
A) *except* B) *exceptionally* C) *exceptional*  
D) *excepted*
22. Choose the answer which correctly completes the sentence.  
When Alice was small, she ... of darkness and always slept with the light on.  
A) *had afraid* B) *had been afraid* C) *afraid*  
D) *used to be afraid*

23. Choose the answer which correctly completes the sentence.

This is the shop . . . sells the best fruit.

- A) *where* B) *that* C) *who* D) *what*

Read the text. Then choose the correct answer to question 24-26.

One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.

24. The passage tells us that the shrew . . .

- A) *has a very short life span.*  
 B) *is similar to a mouse in appearance*  
 C) *lives in dense forests.*  
 D) *is in the habit of eating every two hours.*

25. The passage states that shrews . . .

- A) *eat each other when they can't find any food.*  
 B) *are the smallest living mammals.*  
 C) *are found in huge numbers in Australia.*  
 D) *eat rarely but in large amounts at a time.*

26. From what is stated in the passage, we can infer that a shrewish woman is someone who . . .

- A) *has tiny eyes and ears.*  
 B) *easily gets annoyed.*  
 C) *is noticeably smaller than the average.*  
 D) *is very fond of velvet and fur.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Many famous people did not enjoy (27). . . success in their early lives. Walt Disney, who was the creator of Mickey Mouse and the founder of his own movie production company, once was fired by a newspaper editor because he had (28). . . good ideas.

- 27.

- A) *immediacy* B) *immediately*  
 C) *immediate* D) *imitate*

- 28.

- A) *any* B) *none* C) *no* D) *nothing*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

A forest is a thickly wooded area. Forests have a wide (29). . . of plants and animals living among the trees. Forests that like cooler climates (30). . . largely in the northern hemisphere, far north of the equator. Forest floors are shady places and it can be hard (31). . . plants to grow.

- 29.

- A) *various* B) *vary* C) *variety*  
 D) *variable*

- 30.

- A) *were found* B) *are found* C) *found*  
 D) *find*

31.

- A) *for*   B) *from*   C) *of*   D) *by*

Read the text. Then choose the correct answer to question 32-33.

On the day of my first piano concert, I became more and more nervous. To help me calm down, my piano teacher told me to place several cabbages in the room where I practiced. I was so eager to get over my nerves that I was willing to try anything. For the next few hours, I played to an audience of cabbages. When the time of the concert came, I was still terribly nervous. My hands felt like ice.

When I finally walked across the stage, I looked out into the dark audience, but I couldn't see anyone. I tried to imagine that all the people sitting in the hall just as well might be cabbages.

As I sat down to play, my hands relaxed and I played all my pieces without a mistake. The concert was a success.

32. The pianist stopped feeling nervous...

- A) *as soon as the concert was over*  
 B) *because he had practiced a lot*  
 C) *when he found he couldn't see the audience*  
 D) *when the audience began to applaud*

33. On the day of the concert the teacher ...

- A) *advised him to eat a little cabbage*  
 B) *couldn't think of a way helping the pianist to stay calm*  
 C) *felt nearly as nervous as the pianist*  
 D) *advised him to put cabbages in the room where he practiced*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Martian soil is rocky*  
 B) *Mars is larger than Earth*  
 C) *It takes longer for Mars to circle the Sun than it takes Earth*  
 D) *Mars has two moons*

35. Man-made canals were supposedly discovered by ...
- A) *Martian*
  - B) *Phobos*
  - C) *Viking I*
  - D) *Schiaparelli*

36. Mars has been nicknamed as ...
- A) *Viking I*
  - B) *Deimos*
  - C) *Martian*
  - D) *The Red Planet*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000053**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

- $A(2; 1)$  nuqtadan o'tib, koordinata o'qlariga urinuvchi aylana tenglamasini tuzing.
  - $(x - 2)^2 + (y - 4)^2 = 9$
  - $(x - 3)^2 + (y - 3)^2 = 9$
  - $(x - 1)^2 + (y - 5)^2 = 16$
  - $(x - 5)^2 + (y - 5)^2 = 25$  yoki  $(x - 1)^2 + (y - 1)^2 = 1$
- Omonatchi bankga 25000 so'm pul qo'ydi. Oradan 3 yil o'tgach, u o'ziga tegishli hamma pulni qaytarib oldi. Agar bank yiliga 5% foyda to'lasa, omonatchi bankdan necha so'm pul olgan?
  - 28000,125
  - 28940,625
  - 59490,235
  - 27941
- $\frac{\sqrt{x^2 - 3x + 2}}{4x - x^2 - 3} \geq 0$ 
  - [2; 3]
  - (0;  $\infty$ )
  - [0; 2)
  - (0; 1)
- To'g'ri burchakli trapetsiyaning diagonali uning yon tomoniga teng. Agar bu trapetsiyaning balandligi 2 ga, yon tomoni esa 4 ga teng bo'lsa, uning o'rta chizig'i uzunligini toping.
  - $5\sqrt{3}$
  - $3\sqrt{2}$
  - $6\sqrt{2}$
  - $3\sqrt{3}$
- $\vec{a}(1; -2; 2)$  va  $\vec{b}(2; -2; -1)$  vektorlar berilgan bo'lsa,  $2\vec{a}^2 - 4(\vec{a}\vec{b}) + 5\vec{b}^2$  ifodaning qiymatni toping.
  - 46
  - 44
  - 47
  - 45
- $\log_{x-1}(x+1) > 2$  tengsizlikni yeching.
  - $(-\infty; 0) \cup (3; \infty)$
  - (2; 3)
  - (0; 1)  $\cup$  (2; 3)
  - (2; 3)  $\cup$  (3;  $\infty$ )
- $(x - 1)^2(x^2 - 2x) = 12$  tenglamaning haqiqiy ildizlari yig'indisini toping.
  - 2
  - 4
  - 0
  - 3
- Rombning tomoni  $10\sqrt{3}$  ga, o'tmas burchagi  $120^\circ$  ga teng. Rombga ichki chizilgan doiraning yuzini hisoblang.
  - $48,75\pi$
  - $58,6\pi$
  - $52,25\pi$
  - $56,25\pi$
- $5^{200}$  sonini 24 ga bo'lganda qoladigan qoldiqni aniqlang.
  - 23
  - 1
  - 15
  - 3
- $-2 \leq \frac{x+5}{x} < 2$  tengsizlikning yechimini toping.
  - $\left(-1\frac{2}{3}; 5\right]$
  - $\left(-\infty; -1\frac{2}{3}\right] \cup (0; 5)$
  - $\left(-\infty; -1\frac{2}{3}\right] \cup (5; \infty)$
  - $\left[-1\frac{2}{3}; 0\right] \cup (5; \infty)$
- $\arccos \frac{1}{x} = \frac{\pi}{2}(1 - \sqrt[3]{x})$  tenglamani yeching.
  - $\pm 1$
  - 2
  - $\pm 8$
  - $\emptyset$
- $M$  nuqta  $ABC$  uchburchakning og'irlik markazi. Shu uchburchak tekisligidan 7 sm uzoqlikda  $O$  nuqta olingan.  $\vec{OA} + \vec{OB} + \vec{OC}$  vektor bilan  $\vec{OM}$  vektor uzunliklari nisbatini toping.
  - 3
  - 2
  - 1
  - 4
- Konusning balandligi va uning yasovchisi mos ravishda 4 sm va 5 sm ga teng. Asosi konus asosida yotgan ichki chizilgan yarimsharning hajmini ( $\text{sm}^3$ ) toping.
  - $\frac{1152}{125}\pi$
  - $\frac{156}{137}\pi$
  - $8\pi$
  - $\frac{125}{1152}\pi$
- $\sqrt[3]{x} + 6 = \sqrt[3]{x^2}$  tenglamaning katta va kichik ildizlari ayirmasini toping.
  - 50
  - 35
  - 45
  - 25
- 3; 5; 9; 17; 33; 65; ... ketma-ketlikning dastlabki  $n$  ta hadining yig'indisini toping.
  - $2^{n+1} + n - 2$
  - $2^n + n - 2$
  - $(2 + 2^{n-1}) \cdot n$
  - $2n$
- Agar  $x \in [-1; 2]$  bo'lsa,  $y = 5^x$  funksiya qaysi oraliqda yotadi?
  - (0;  $\infty$ )
  - (0; 25]
  - [1; 5]
  - [0; 2; 25]

17. Hosila uchun qaysi munosabatlar o'rinli?

1)  $(\ln \sin x)' = ctgx$ ;

2)  $\left(\cos \frac{1}{x}\right)' = -\frac{1}{x^2} \sin \frac{1}{x}$ ;

3)  $(\log_4 5x)' = \frac{1}{5x \ln 4}$ ;

4)  $(2^{\sqrt{x}})' = \frac{2^{\sqrt{x}} \ln 2}{2\sqrt{x}}$

A) 1, 2    B) 1, 3    C) 3, 4    D) 1, 4

18.  $y = \frac{2}{\sqrt[4]{2x+5}}$  funksiyaning boshlang'ich funksiyasini toping.

A)  $\frac{8}{3} \sqrt[4]{(2x+5)^3} + c$

B)  $\frac{4}{3} \sqrt[4]{2x+5} + c$

C)  $\frac{4}{3} \sqrt[4]{(2x+5)^3} + c$

D)  $-\frac{4}{3} \sqrt[4]{(2x+5)^3} + c$

19.  $\frac{x^2 - (m-4)x - 4m}{x^2 + (1-m)x - m}$  ni hisoblang.

A)  $\frac{x-4}{x-1}$     B)  $\frac{x-1}{x+2}$     C)  $\frac{x+4}{x+1}$     D)  $\frac{x-4}{x-2}$

20. XOY uchburchakda  $\angle XOY = 90^\circ$ . M va N nuqtalar mos ravishda OX va OY tomonlarning o'rtalari. Agar  $XN=19$  va  $YM=22$  bo'lsa, XY ni toping.

A) 26    B) 14    C) 28    D) 13

21. Balandligi asosining diametriga teng silindrning yon sirti  $16\pi$  ga teng. Silindr asosining diametrini toping.

A) 8    B) 1    C) 2    D) 4

22.  $4^x - 2 \cdot 6^x = 9^{x+\frac{1}{2}}$  tenglama ildizini toping.

A)  $\frac{\lg 3}{\lg \frac{2}{3}}$

B)  $\lg 3$

C)  $\lg \frac{2}{3}$

D)  $-\lg \frac{2}{3}$

23. Uchburchakli piramidaning yon yoqlari asos tekisligi bilan  $60^\circ$  li burchak tashkil etadi. Agar piramida asosining yuzi 40 ga teng bo'lsa, piramidaning to'la sirtini toping.

A) 128    B) 72    C) 120    D) 80

24.  $\sqrt{4\sqrt{2} + 2\sqrt{6}}$  ifodani soddalashtiring.

A)  $\sqrt{18} + \sqrt{2}$

B)  $\sqrt[4]{18} - \sqrt[4]{2}$

C)  $\sqrt{18}$

D)  $\sqrt[4]{18} + \sqrt[4]{2}$

25. Agar to'g'ri to'rtburchak kichik tomoni  $a = 10\sqrt{2}$  bo'lsa, uning ixtiyoriy burchagidan katta tomonga o'tgan bissektrisasi uzunligi qancha?

A) 30    B) 10    C) 20    D) 15

26.  $\left| \frac{2x^5}{x^4 - 16} \right| = \frac{2x^5}{16 - x^4}$  tenglamaning barcha natural yechimlari yig'indisidan eng katta manfiy butun yechimi ayirmasini toping.

A) 1    B) 4    C) 3    D) 2

27.  $y = \sqrt{16 - x^2}$  funksiyaning grafigi bo'lgan egri chiziq uzunligini toping.

A)  $6\pi$     B)  $4\pi$     C)  $8\pi$     D) aniqlab bo'lmaydi

28.  $(2 + \frac{2}{3} - \frac{1}{2}) \cdot 6 + (\frac{8}{21} + \frac{1}{3} - \frac{5}{7}) \cdot 21 + (\frac{3}{14} - \frac{2}{7} + \frac{1}{2}) \cdot 14$  ni hisoblang.

A) 18    B) 20    C) 19    D) 15

29. Barcha ikki xonali sonlar ko'paytmasidan tashkil topgan ko'paytmada 7 sonining eng katta darajasini aniqlang.

A) 13    B) 14    C) 15    D) 16

30.  $f(x) = x^2 + 2x + 1$  funksiyaning hosilasini toping.

A)  $x^2 + 2$     B)  $2x^2 + 2$     C)  $2x - 2$

D)  $2x + 2$

31. Agar kitobdagi axborot hajmi 7 Kbayt bo'lsa, uni nechta "Axborot" so'zi bilan almashtirish mumkin?

A) 1024    B) 2048    C) 2000    D) 14336



32. Amal va o'tkazish natijasini aniqlang.  
 $63_8 + 21_8 \rightarrow x_2$   
 A)  $1000100_2$  B)  $1010100_2$  C)  $1011000_2$   
 D)  $1011001_2$
33. Nomi S harfidan boshlanuvchi va faqat to'rtta belgidan iborat ixtiyoriy kengaytmali fayllar qanday belgilanadi?  
 A)  $S* *.*.*$  B)  $S?????$  C)  $S????*$  D)  $S*.*$
34. MS Excel 2003 da katakchadagi  
 "= $CYMM(A1:A10;B1;C5)$ " formula nechta katakchadagi sonni qo'shadi?  
 A) 12 ta B) 15 ta C) 10 ta D) 20 ta
35. Kompyuter ekranida aks etgan holatni rasmga olish uchun qaysi klavishlardan foydalaniladi?  
 A) *Shift + Delete* B) *Ctrl + Alt + Delete*  
 C) *Print Screen / Sys Rq* D) *Ctrl + F12*
36. Paskal dasturi lavhasidagi natijani aniqlang.  
 begin X:=2; p:=1; 1:P:=P\*(2\*x-2); X:=X+3; if X<=6 then goto 1; writeln(P); end.  
 A) 16 B) 20 C) 2 D) 24
5. Dengizdagi to'lqin do'ngliklari orasidagi masofa 5 m. Katerning to'lqinga qarshi harakatiga 1 s da kater korpusiga 4 marta to'lqin urildi. To'lqin bilan bitta yo'nalishda harakatlenganda 2 marta urildi. Agar kater tezligi to'lqin tezligidan katta bo'lsa kater (m/s) va to'lqin (m/s) tezligini toping.  
 A) 15; 5 B) 10; 5 C) 20; 10 D) 25; 5
6. Muz ustida turgan konkichi 5 m/s tezlik bilan 10 kg massali toshni gorizontga  $30^\circ$  burchak ostida uloqtiradi. Agar konkichining massasi 64 kg bo'lsa, uning harakatdagi boshlang'ich tezligi (m/s) qanday bo'ladi?  
 A) 0,168 B) 0,36 C) 0,136 D) 0,68
7.  $v$  tezlik bilan borayotgan odam ko'cha chiroqlari tagidan o'tib bormoqda, chiroqlar yerdan  $H$  balandlikka osilgan. Odamning balandligi  $h$  ga teng bo'lsa, uning yerdagi soyasining uchki qismi qanday tezlikda harakatlanadi?  
 A)  $\frac{H+h}{H}v$  B)  $v$  C)  $\frac{H}{H-h}v$  D)  $\frac{H-h}{H}v$
8. Temperatura ortishi bilan yarimo'tkazgichning qarshiligi ...  
 A) kamayadi B) avval ortadi, keyin kamayadi  
 C) o'zgarmaydi D) ortadi

### FIZIKA

1. Tovush havodan suvga o'tganda tovush to'lqinining uzunligi necha marta o'zgaradi? Tovushning suvdagi tezligi 1480 m/s, havodagi tezligi 340 m/s.  
 A) 4,35 B) 43,5 C) 0,435 D) 435
2. Energiyasi  $6 \cdot 10^{-19}$  J ga teng bo'lgan fotonning impulsi (kg·m/s) qancha?  $c=3 \cdot 10^8$  m/s  
 A)  $2 \cdot 10^{-27}$  B)  $0,2 \cdot 10^{-27}$  C)  $2 \cdot 10^{-28}$   
 D)  $0,2 \cdot 10^{-28}$
3. Buyum sochuvchi linzadan  $d = 4F$  masofada joylashgan. Tasvir linzadan qancha masofada joylashgan?  
 A)  $0,5F$  B)  $0,8F$  C)  $0,6F$  D)  $0,4F$
4. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 11-sekundda bosib o'tgan yo'li 10-sekundda bosib o'tgan yo'ldan necha marta farq qiladi?  
 A) 21/19 B) 121/100 C) 7/3 D) 21/17
9. Massasi 4,9 kg bo'lgan jism 2,5 kg massali qo'zg'almas jism bilan to'qnashgandan keyin bu ikki jismlar sistemasining kinetik energiyasi 5 J ga teng bo'lib qolgan. Urilishni markaziy va noelastik hisoblab birinchi jismning urilishdan oldingi kinetik energiyasini (J) toping.  
 A) 8,5 B) 8,0 C) 7,0 D) 7,55
10. Molekulalari konsentratsiyasi  $2 \cdot 10^{24}$  m<sup>-3</sup> ga teng bo'lgan idishdagi gazning bosimi  $3 \cdot 10^4$  N/m<sup>2</sup> ga teng. Bitta molekulaning o'rtacha kinetik energiyasini (J) toping.  
 A)  $2,5 \cdot 10^{-20}$  B)  $3 \cdot 10^{-21}$  C)  $2,75 \cdot 10^{-20}$   
 D)  $2,25 \cdot 10^{-20}$
11. Massasi va boshlang'ich temperaturasi bir xil bo'lgan vodorod va geliy gazlari 70 K ga qizdirildi. Vodorodni qizdirishda bajarilgan ish  $A_1$  va geliy qizdirishda bajarilgan ish  $A_2$  lar qanday munosabatda bo'ladi? ( $P=\text{const}$ )  
 A)  $A_2 = 4A_1$  B)  $A_2 = 2A_1$  C)  $A_1 = 2A_2$   
 D)  $A_1 = A_2$

12.  $v_0 = \sqrt{2gh}$  tezlikli jism qanday balandlikka ko'tariladi?

- A)  $h$  B)  $h\sqrt{2}$  C)  $\frac{h}{\sqrt{2}}$  D)  $2h$

13. 220 V kuchlanishli tarmoqqa ulangan transformatorning birlamchi chulg'amidagi o'ramlar soni 100 ta bo'lsa, o'ramlar soni 20 ta bo'lgan ikkilamchi chulg'amda qanday kuchlanishdagi tok hosil bo'ladi (V)?

- A) 36 B) 22 C) 220 D) 44

14. Ballonda 20 mol gaz bo'lsa, undagi molekular sonini toping.

- A)  $1,2 \cdot 10^{25}$  B)  $1,2 \cdot 10^{24}$  C)  $12 \cdot 10^{25}$   
D)  $12 \cdot 10^{24}$

15. Elementlari parallel ulangan zanjirning o'zgaruvchan tokka nisbatan qarshiligi  $\left(\frac{1}{R^2} + \left(\omega C - \frac{1}{\omega L}\right)^2\right)^{-1/2}$  ga teng. Rezonans paytida bu qarshilik qanday bo'ladi?

- A)  $\infty$   
B) 0  
C)  $\sqrt{R^2 + (\omega C + 1/\omega L)^2}$   
D)  $R$

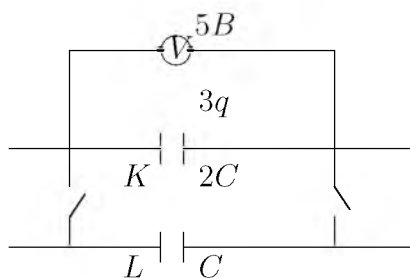
16. Ko'tarish kranida 10 ta ko'char blokdan foydalaniladi. Uning necha marta kuchdan yutuq berishini aniqlang.

- A) 20 B) 1024 C) 512 D) 32

17. Jismning massasi 1 g ga ortishi uchun uning to'liq energiyasi (TJ) qanchaga ortishi kerak?

- A) 80 B) 97 C) 100 D) 90

18. Shakldagi  $3q$  zaryadli kondensatorning uchlari orasidagi potentsiallar farqi 5 V.  $K$  kondensator zaryadsiz  $L$  kondensatorga parallel ulansa  $L$  kondensatorning uchlari orasidagi potentsiallar farqi (V) nimaga teng?



- A) 2/5 B) 5/3 C) 19/3 D) 10/3

19. Massasi 4 kg bo'lgan jism havoda  $8,3 \text{ m/s}^2$  tezlanish bilan tushmoqda. Havoning qarshilik kuchini (N) toping.  $g=9,8 \text{ m/s}^2$

- A) 6 B) 60 C) 33,2 D) 40

20. Radiusi 0,2 m bo'lgan metall sharda  $4\pi \cdot 10^{-8} \text{ C}$  zaryad bo'lsa, uning sirtida zaryadning o'rtacha zichligi qanday ( $\text{C/m}^2$ )?  $\epsilon=1$  deb oling.

- A)  $4,2 \cdot 10^{-7}$  B)  $0,8 \cdot 10^{-7}$  C)  $1,6 \cdot 10^{-7}$   
D)  $2,5 \cdot 10^{-7}$

21. Bir noinersial sanoq sistemasiga nisbatan o'zgarmas tezlik bilan harakat qilayotgan zaryadlangan zarracha, ikkinchi inersial sanoq sistemasiga nisbatan qanday maydon hosil qiladi? 1 - o'zgaruvchan elektr maydoni; 2 - o'zgarmas elektr maydoni; 3 - o'zgaruvchan magnit maydoni; 4 - o'zgarmas magnit maydoni; 5 - gravitasion maydon.

- A) 1, 3, 5 B) 2, 4, 5 C) 1, 2, 3, 4, 5  
D) 2, 5

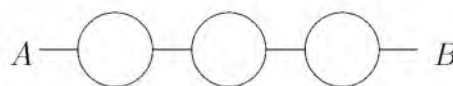
22. Tok manbaiga  $5 \Omega$  qarshilikka ega bo'lgan rezistor ulanganda tok kuchi 1 A ga,  $1,5 \Omega$  qarshilikka ega bo'lgan rezistor ulanganda esa 2 A ga teng bo'ldi. Manbaning ichki qarshiligini ( $\Omega$ ) toping.

- A) 0,5 B) 1 C) 2 D) 2,5

23. Hajmi bir litr bo'lgan kub shaklidagi idish suv bilan to'ldirilgan. Suvning idish tubiga va to'rt devoriga bo'lgan umumiy bosim kuchini (N) aniqlang.

- A) 24,4 B) 30 C) 28,3 D) 29,4

24. Rasmda tasvirlangan har bir halqa qarshiligi  $R$  ga teng bo'lgan o'tkazgichdan tayyorlanib, ular rasmda ko'rsatilgandek ulansa  $A$  va  $B$  nuqtalar orasidagi umumiy qarshilik nimaga teng bo'ladi?



- A)  $5R/2$  B)  $0,75R$  C)  $1,5R$  D)  $7R/2$

25. Elektr choynagi 220 V kuchlanishga ulangan holda 3,2 A tok iste'mol qilib 1 l suvni 12 minutda qaynatdi. Suvning boshlang'ich harorati  $20^\circ\text{C}$  bo'lsa, FIKni (%) toping.

$$c_{suv} = 4200 \frac{J}{kg \cdot ^\circ C}$$

- A) 66 B) 71 C) 98 D) 84

26. O'zgaras kuchlanish manbaiga ulangan  $2R$  qarshilikka qanday qarshilik ketma-ket ulansa, uning quvvati 2,25 marta kamayadi?

- A)  $2,25R$  B)  $0,5R$  C)  $2R$  D)  $2,5R$

27. Markazga intilma tezlanish ...

- A) aylanish davri bog'liq emas  
 B) aylanish davri ortishi bilan ortadi  
 C) aylanish davrining kvadratiga teskari proporsional  
 D) aylanish davrida teskari proporsional

28. Hajmi  $60 \text{ m}^3$  bo'lgan xonadagi havoning temperaturasi normal bosimda 280 K dan 300 K gacha ko'tarilganda xonadan qancha massali (kg) havo chiqib ketadi?

- A) 50 B) 20 C) 5 D) 2

29.  $N = N_0 \cdot 2^{-t/T}$

Radioaktiv parchalanish qonunida  $N$  nimani bildiradi?

- A) majburiy parchalangan yadrolar sonini  
 B) tabiiy parchalangan yadrolar sonini  
 C) radioaktiv parchalangan yadrolar sonini  
 D) radioaktiv parchalanmagan yadrolar sonini

30. Ideal gazning massasi o'zgarmagani holda uning hajmi 4 marta kamaytirilib, bosimi 7 marta orttirilsa, gazning ichki energiyasi necha marta ortadi?

- A)  $11/4$  B)  $4/11$  C)  $7/4$  D)  $4/7$

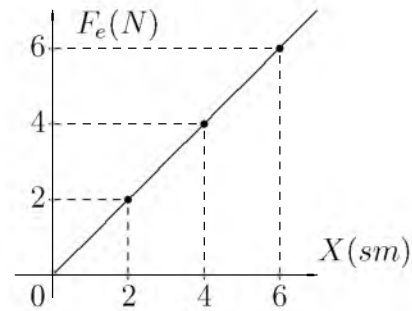
31. Koptok yerdan qaytib  $2h$  balandlikka ko'tarilishi uchun uni,  $h$  balandlikdan pastga qanday  $v_0$  boshlang'ich tezlik bilan tashlash kerak? Urilish absolut elastik deb hisoblansin.

- A)  $v = 2gh$  B)  $v = g/h$  C)  $v = gh$   
 D)  $v = \sqrt{2gh}$

32. Yerdan Oygacha bo'lgan masofa 384 ming km bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?

- A) 1,4 B) 1,2 C) 1,3 D) 1,5

33. Grafikdan foydalangan holda elastiklik kuchining bajargan ishini toping.



- A) 0,2 B) 0,08 C) 0,18 D) 0,8

34. Induktivligi  $400 \mu\text{H}$  bo'lgan g'altak 400 kHz chastotali tarmoqqa ulangan. G'altakning reaktiv qarshiligini ( $k\Omega$ ) toping.

- A) 2,5 B) 1 C) 2 D) 3

35. Tutash idishlardan biriga suv ( $\rho_{suv}=1000 \text{ kg/m}^3$ ), ikkinchisiga kerosin ( $\rho_{kerosin}=800 \text{ kg/m}^3$ ) qo'yildi. Suv sathidan kerosin ustuni necha foiziga yuqori bo'ladi?

- A) 50 B) 18,6 C) 25 D) 20

36. Biror  $m$  massali gaz o'zgaras bosimda  $T_0$  dan boshlab, ikkinchi marta  $T_0 + 1$  dan boshlab isitiladi. Ikkala holda ham gaz hajmi 2 marta ortdanda isitish to'xtatildi. Bunda issiqlik miqdori qanday farq qiladi?

- A) bir xil sarf bo'ladi B)  $2m \cdot c_p$   
 C)  $m \cdot c_p(T_0 + 1)$  D)  $m \cdot c_p \cdot T_0$

## INGLIZ TILI

1. Choose the answer which correctly complete the sentence.

The news is going ... tomorrow or the day after tomorrow.

- A) to announce B) is announcing  
 C) be announced D) to be announced

2. Choose the answer which correctly complete the sentence.

At the circus the children were kept ... by clown acts.

- A) amuse B) to amuse C) amusing  
 D) amused

3. Choose the answer which correctly completes the sentence.

If I bought him a computer he would ... games all day long.

- A) have played B) played C) be playing  
 D) to play

4. Choose the answer which correctly completes the sentence.  
She wouldn't have got wet if she ... her umbrella.  
A) *takes* B) *would take* C) *took*  
D) *had taken*
5. Choose the answer which correctly complete the sentence.  
They have promised to lend me a tennis racket so I ... take mine.  
A) *mustn't* B) *can't* C) *don't have to*  
D) *daren't*
6. Choose the answer which correctly completes the sentence.  
It was lovely and ... in the swimming pool so he dived straight in.  
A) *warmth* B) *warmly* C) *warmed*  
D) *warm*
7. Choose the answer which correctly completes the sentence.  
You can't go on holiday without ... money.  
A) *some* B) *many* C) *any* D) *no*
8. Choose the answer which correctly completes the sentence.  
The Chinese were the first ... on the construction of the transcontinental railroad system.  
A) *to work* B) *works* C) *working*  
D) *work*
9. Choose the answer which correctly completes the sentence.  
They asked me, "Where has she gone?"  
I wonder where ...  
A) *she has gone* B) *has she gone*  
C) *had she gone* D) *she had gone*
10. Choose the answer which correctly complete the sentence.  
The employees think ... of their new manager.  
A) *highly* B) *higher* C) *highest*  
D) *the highest*
11. Choose the answer which correctly completes the sentence.  
Last summer we went to stay in ... village where my grandmother was born.  
A) *an* B) *a* C) *-* D) *the*
12. Choose the answer which correctly completes the sentence.  
In Britain you ... drive a car when you're 17.  
A) *must* B) *need* C) *have to* D) *can*
13. Choose the answer which correctly completes the sentence.  
She went to the bank ... to get some money.  
A) *even though* B) *in case* C) *unless*  
D) *in order*
14. Choose the answer which correctly completes the sentence.  
The sky grew ... as the storm approached.  
A) *dark* B) *darken* C) *darkly*  
D) *darkness*
15. Choose the answer which correctly completes the sentence.  
I haven't got enough cash. Can I pay ... cheque?  
A) *with* B) *in* C) *from* D) *by*
16. Choose the answer which correctly completes the sentence.  
I saw you in the park yesterday. You ... with your friend Tom.  
A) *sit* B) *sat* C) *had sat* D) *were sitting*
17. Choose the answer which correctly complete the sentence.  
Sara, my next door neighbour, has a car, but she ... it very often.  
A) *isn't using* B) *hasn't been using*  
C) *doesn't use* D) *hasn't used*
18. Choose the answer which correctly completes the sentence.  
I still prefer to travel by plane ... the increase in air fares.  
A) *because of* B) *despite* C) *although*  
D) *in spite*
19. Choose the answer which correctly complete the sentence.  
After the president of the company had made decision, his resignation ... announced yesterday on television.  
A) *-* B) *was* C) *has* D) *have been*

20. Choose the answer which correctly completes the sentence.

Horror films are popular ... there is a lot of criticism of them.

A) *though* B) *as if* C) *despite* D) *so*

21. Choose the answer which correctly completes the sentence.

There are 9 planets in our solar system, and ... Pluto is the farthest.

A) *an* B) *-* C) *the* D) *a*

22. Choose the answer which correctly complete the sentence.

Sorry about the mess - I ... the house.

A) *painted* B) *had painted*  
C) *have been painting* D) *will have painted*

23. Choose the answer which correctly completes the sentence.

I don't like cooking, and...

A) *he doesn't either* B) *either he doesn't*  
C) *he doesn't neither* D) *he either doesn't*

Read the text. Then choose the correct answer to question 24-26.

When the first cars hit British roads in the late 19th century, they had an unusual safety feature. Every "horseless carriage" was guided by a man walking in front waving a red flag to warn other road users of the vehicle's approach. These early precautions, known as the "red flag laws", seem laughable now. However, future generations may look at current safety measures in much the same way. In the US state of Nevada, the government has begun to draft a set of regulations that will allow self-driving vehicles on its roads. These cars will have technological advantages such as cameras that determine exactly where other cars are and how fast they are moving. Promoters of the self-driving cars believe they will save time and fuel, and reduce traffic jams. If these cars become a reality, there may be a dramatic decrease in human drivers on the roads. People who still want the pleasure of driving themselves will someday have to warn other road users that they are engaging in such a dangerous activity. People then might consider reintroducing the red flags.

24. The author of the passage thinks that ...

A) *many cars will not be driven by humans when unmanned cars come into existence.*  
B) *current technology is insufficient to meet safety needs on today's roads.*  
C) *precautions taken by the British were not as effective as those of the Nevada government.*  
D) *road users rely heavily on self-driving cars due to their technological advantages.*

25. It can be understood from the passage that ...

A) *we need to build special roads for self-driving cars.*  
B) *the technical features of self-driving cars will make them expensive at first.*  
C) *the designs of self-driving cars will be more attractive than current ones.*  
D) *promoters of the self-driving cars believe these cars will have several benefits.*

26. It is inferred in the passage that ...

A) *driving a car yourself may be considered dangerous in the future.*  
B) *the Nevada government was inspired by the "red flag laws" while drafting regulations for self-driving cars.*  
C) *cars were often used to carry equipment when they were first introduced to British roads in the 19th century.*  
D) *a red flag was generally used to signal the approach of a pedestrian.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Many famous people did not enjoy (27)... success in their early lives. Walt Disney, who was the creator of Mickey Mouse and the founder of his own movie production company, once was fired by a newspaper editor because he had (28)... good ideas.

- 27.

A) *immediate* B) *immediately*  
C) *immediacy* D) *imitate*

28.

- A) *no* B) *nothing* C) *none* D) *any*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

29.

- A) *familiarity* B) *familiar* C) *familiarize*  
D) *familiarly*

30.

- A) *are* B) *is* C) *have been* D) *will be*

31.

- A) *into* B) *towards* C) *of* D) *with*

Read the text. Then choose the correct answer to questions 32-33.

Launched on October 4, 1957, Sputnik 1 was the first craft in orbit around the earth. Named from the Russian phrase for "traveling companion of the world" (Sputnik Zemli), it was a small satellite measuring only 58 cm across. It circled the earth once 96,2 minutes and transmitted information about the earth's atmosphere. After 57 days in space, it re-entered the atmosphere and was destroyed.

This historic launch began an era of intensive space programmes by both the Soviet Union and the United States. In the next three decades, hundreds of probes, satellites, and other missions were to follow Sputnik on the quest to explore both the wonders and the practical potential of space.

32. What is the main idea of the text?

- A) *The success of Sputnik 1 exploration.*  
B) *Sputnik 1's crash on re-entry delayed other explorations.*  
C) *The main role of satellites is to send information from space.*  
D) *United States tried hard to launch their own satellite.*

33. How long did Sputnik 1 stay in space?

- A) *4 days* B) *57 days* C) *96,2 minutes*  
D) *58 minutes*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deimos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?

- A) *Mars has two moons*  
B) *Mars is larger than Earth*  
C) *Martian soil is rocky*  
D) *It takes longer for Mars to circle the Sun than it takes Earth*

35. Man-made canals were supposedly discovered by ...

- A) *Schiaparelli* B) *Phobos* C) *Martian*  
D) *Viking I*

36. Mars has been nicknamed as ...

- A) *The Red Planet* B) *Martian* C) *Deimos*  
D) *Viking I*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

## REPITISION TEST TOPSHIRUVCHILAR UCHUN

# SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000054**

Toshkent – 2014

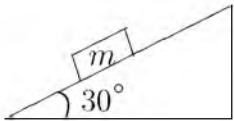
**MATEMATIKA (INFORMATIKA BILAN)**

1.  $f(x+1) = x \cdot f(x) + 4$ ,  $f(2)$ -?
  - A) 0    B) 16    C) 6    D) 8
2. Uchburchakli piramidaning yon yoqlari asos tekisligi bilan  $60^\circ$  li burchak tashkil etadi. Agar piramida asosining yuzi 40 ga teng bo'lsa, piramidaning to'la sirtini toping.
  - A) 72    B) 80    C) 128    D) 120
3. Omonatchi bankga 25000 so'm pul qo'ydi. Oradan 3 yil o'tgach, u o'ziga tegishli hamma pulni qaytarib oldi. Agar bank yiliga 5% foyda to'lasa, omonatchi bankdan necha so'm pul olgan?
  - A) 59490,235    B) 27941    C) 28000,125
  - D) 28940,625
4. Dastlabki o'nta hadining yig'indisi 55 ga teng bo'lgan arifmetik progressiyaning o'ninchi hadi 19 ga teng bo'lsa, uning ayirmasini toping.
  - A) 3    B) 2    C) -3    D) -2
5.  $\frac{a^3 - 2a^2 + 5a + 26}{a^3 - 5a^2 + 17a - 13}$  kasrni qisqartiring.
  - A)  $\frac{a+2}{a-1}$     B)  $\frac{1-a}{a+2}$     C)  $\frac{a+2}{a-2}$     D)  $\frac{a-2}{a+2}$
6.  $x^2 + y^2 + 8x - 2y - 8 = 0$  aylana va  $x + y = 4$  to'g'ri chiziqning kesishish nuqtalarini toping.
  - A) (2; 1), (-2; 1)    B) (3; 2), (5; -1)
  - C) (4; 9), (-5; 1)    D) (0; 4), (-1; 5)
7. Asosi  $a$ , perimetri 42 bo'lgan to'g'ri to'rtburchakning yuzini hisoblash uchun ifoda tuzing.
  - A)  $S = a(21 - a)$     B)  $S = a^2 - 21$
  - C)  $S = a(a - 21)$     D)  $S = ax$
8. Quyidagi tenglamalar sistemasini yeching.
 
$$\begin{cases} EKUB(x; y) = 45 \\ \frac{x}{y} = \frac{11}{7} \end{cases}$$
  - A)  $x = 275$ ,  $y = 175$     B)  $x = 220$ ,  $y = 140$
  - C)  $x = 495$ ,  $y = 315$     D)  $x = 143$ ,  $y = 91$
9.  $\arccos(1+x) + 2\arcsin x = 0$  tenglamani yeching.
  - A) 0    B) -1    C)  $\frac{1}{3}$     D)  $-\frac{1}{2}$
10.  $\sqrt{2^{1,5}} \sqrt{5^3} \sqrt{2^{1,5}} \sqrt{5^3} \dots$  ifodaning qiymatini toping.
  - A) 12    B) 14    C) 17    D) 10
11.  $\log_{x-1}(x+1) > 2$  tengsizlikni yeching.
  - A)  $(0; 1) \cup (2; 3)$
  - B)  $(-\infty; 0) \cup (3; \infty)$
  - C)  $(2; 3)$
  - D)  $(2; 3) \cup (3; \infty)$
12. Rombning tomoni 4 ga, o'tkir burchagi  $30^\circ$  ga teng bo'lsa, unga ichki chizilgan aylananing uzunligini toping.
  - A)  $2\pi$     B)  $4\pi$     C)  $\pi$     D)  $\frac{\pi}{2}$
13.  $(x-1)^2(x^2-2x) = 12$  tenglamaning haqiqiy ildizlari yig'indisini toping.
  - A) 0    B) 2    C) 3    D) 4
14. Yig'indisi  $\frac{4}{3}$  ga, hadlar kvadratlarining yig'indisi  $\frac{16}{27}$  ga teng bo'lgan cheksiz kamayuvchi geometrik progressiya hadlari kublarining yig'indisini toping.
  - A)  $\frac{56}{189}$     B)  $\frac{64}{189}$     C)  $\frac{8}{27}$     D)  $\frac{64}{81}$
15.  $x^2 - 3x + \sqrt{x^2 - 3x + 5} = 7$  tenglamani katta ildizining kichik ildiziga nisbatini toping.
  - A) -4    B) 4    C) 5    D) -5
16.  $\int_0^{\frac{\pi}{4}} \cos 2x dx$  ni hisoblang.
  - A)  $\sqrt{2}$     B)  $\frac{1}{2}$     C)  $-\frac{1}{\sqrt{2}}$     D)  $\frac{\sqrt{2}}{2}$
17. Qanday ko'pburchak diagonallarining soni tomonlarining sonidan 12 ta ortiq?
  - A) oltiburchak    B) o'nikkiburchak
  - C) to'rtburchak    D) sakkizburchak
18. Parallelogrammning uchta ketma-ket  $A(-3; -2; 0)$ ,  $B(3; -3; 1)$  va  $C(5; 0; 2)$  uchlari berilgan.  $\vec{AC}$  va  $\vec{BD}$  vektorlar orasidagi burchakni toping.
  - A)  $120^\circ$     B)  $150^\circ$     C)  $60^\circ$     D)  $135^\circ$
19.  $y = \sqrt{\sin^3 2x}$  ning hosilasini hisoblang.
  - A)  $\frac{3}{2} \sqrt{\sin 2x}$     B)  $3 \cos 2x \sqrt{\sin 2x}$
  - C)  $3 \sqrt{\sin 2x}$     D)  $-3 \cos 2x \sqrt{\sin 2x}$

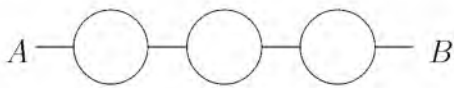


20.  $|1 - |1 - x|| = 0,5$  tenglamaning ildizlari yig'indisini toping.  
A) 4 B) 1 C) 5 D) 3
21. Teng yonli uchburchakning yon tomoni 10 sm, asosi 12 sm ga teng. Uchburchakka ichki chizilgan aylanaga o'tkazilgan urinmalar uchburchakning asosiga tushirilgan balandligiga parallel va berilgan uchburchakdan ikkita to'g'ri burchakli uchburchak ajratadi. Ushbu uchburchakning tomonlarini (sm) toping.  
A) 2; 2; 3 B) 2; 3; 4 C) 3; 4; 5 D) 3; 3; 5
22.  $y = \frac{2x - 1}{\sqrt{x^2 - 5x + 6}}$  funksiyaning aniqlanish sohasini toping.  
A)  $(-\infty; 2) \cup (3; \infty)$   
B)  $(-2; 3)$   
C)  $(0; 2)$   
D)  $(-\infty; 3)$
23. Arifmetik progressiyada  $a_4 + a_7 = 10$  bo'lsa,  $a_2 + a_9$  ni toping.  
A) 11 B) 9 C) 10 D) 8
24. Uzunligi 17 ga teng bo'lgan kesmaning uchlari tekislikdan 4 va 12 ga teng uzoqlikda yotishi ma'lum bo'lsa, kesmaning tekislikdagi proyeksiyasi uzunligini toping.  
A) 10 B) 15 C) 12 D) 16
25.  $\frac{18}{2 + \frac{x+7}{2 + \frac{x-3}{2}}} = 3$  tenglamani yeching.  
A) 5 B) 1 C) 4 D) 3
26. Balandligi 12 ga, asosining radiusi 5 ga teng bo'lgan konusga ichki chizilgan oltiburchakli muntazam piramidaning katta diagonal kesimi yuzini hisoblang.  
A) 72 B) 50 C) 60 D) 38
27. Agar arifmetik progressiyada  $s_{2n} = 2013$ ,  $S_{3n} = 2001$  bo'lsa,  $S_n$  ni toping.  
A) 1346 B) 1344 C) 1350 D) 1354
28. Agar  $xy + yz + zx = 16$  bo'lsa,  $(x + y + z)^2$  ifoda teng bo'lishi mumkin bo'lgan eng kichik qiymatni toping.  
A) 16 B) 64 C) 32 D) 48
29.  $a > b > 0$  va  $c = \frac{a+b}{b}$  berilgan. Quyidagi tasdiqlardan qaysi biri to'g'ri?  
A)  $c = 1$  B)  $c = 2$  C)  $a < c < 2$  D)  $c > 2$
30. Uchburchak tomonlari 5, 6, 7 sm. Uning yuzasini ( $\text{sm}^2$ ) toping.  
A) 8 B)  $5\sqrt{5}$  C) 6 D)  $6\sqrt{6}$
31. Dastur asosida boshqariladigan birinchi hisoblash mashinasini kim va qachon ixtiro qilgan?  
A) 1930 yil, V.Bush B) 1941 yil, K.Suze  
C) 1944 yil, G.Eyken D) 1907 yil, Li de Fores
32. Agar  $A=\text{rost}$ ,  $B=\text{yolg'on}$ ,  $C=5$ ,  $D=6$  bo'lsa, quyidagilardan qaysi birining natijasi yolg'on bo'ladi?  
A)  $A \vee B \wedge (C = D)$   
B)  $A \wedge B \vee (C > D)$   
C)  $\neg A \vee B \vee (C < D)$   
D)  $A \wedge \neg B \vee (C < D)$
33. Faylning xususiy nomi nechta belgidan iborat bo'lishi mumkin?  
A) 1 tadan 8 tagacha  
B) 1 tadan 64 tagacha  
C) operatsion sistema va dasturga bog'liq  
D) 1 tadan 255 tagacha
34. MS Excelning A5:C12 katakchalar blokida nechta katakcha bor?  
A) 22 ta B) 18 ta C) 21 ta D) 24 ta
35. Tashkil etish texnologiyasiga ko'ra web-sahifalar necha va qanday turga bo'linadi?  
A) 2 turga: statik, dinamik  
B) 3 turga: statik, dinamik, interaktiv  
C) 4 turga: statik, dinamik, interaktiv, input type  
D) 2 turga: input type va interaktiv
36. Paskal dasturi lavhasidagi S ning qiymati nimaga teng?  
begin S:=0; for I:=1 to 3 do S:=S+2\*i;  
writeln(S); end.  
A) 24 B) 48 C) 96 D) 12

1. 200 V kuchlanishgacha zaryadlanib tok manbaidan ajratilgan  $10 \mu\text{F}$  sig'imli kondensator qoplamalari orasidan dielektrik singdiruvchanligi  $\varepsilon=2,5$  bo'lgan dielektrikni tortib olish uchun qancha ish (J) bajarish kerak?  
A) 1,25 B) 0,3 C) 3 D) 5
2. Ko'ndalang kesim yuzasi  $20 \text{ mm}^2$ , tok tashuvchi elektronlarining konsentratsiyasi  $2 \cdot 10^{22} \text{ sm}^{-3}$  va tartibli harakat tezligi  $0,01 \text{ mm/s}$  ga teng bo'lgan o'tkazgichning ko'ndalang kesimi orqali 5 minutda o'tgan elektronlar sonini toping.  
A)  $1,2 \cdot 10^{21}$  B)  $2 \cdot 10^{20}$  C)  $2,2 \cdot 10^{21}$   
D)  $4 \cdot 10^{21}$
3. 100 m balandlikdan tushgan jism Yerga  $40 \text{ m/s}$  tezlik bilan tushdi. Agar jism massasi  $2 \text{ kg}$  bo'lsa havoning qarshilik kuchiga qarshi qanday ish (J) bajarilgan?  
A) 300 B) 360 C) 200 D) 450
4. Yadro bombasining portlashi nimadan iborat?  
A) og'ir vodorod yadrolarining sintez reaksiyasidan  
B) poroxning portlashidan  
C) yadrolar parchalanishining zanjirli reaksiyasidan  
D) dinamitning portlashidan
5. Issiqlik mashinasi sovtgichining harorati  $200 \text{ K}$  ga, isitgichiniki esa  $400 \text{ K}$  ga teng. Agar isitgichning harorati 2 marta ortsa, uning maksimal FIK necha foizga o'zgaradi?  
A) 25% ga ortadi B) 25% ga kamayadi  
C) 50% ga kamayadi D) 50% ga ortadi
6. Elementlari ketma-ket ulangan zanjirning o'zgaruvchan tokka nisbatan to'liq qarshiligi  $\sqrt{R^2 + (\omega L - 1/\omega C)^2}$  ga teng. Chastota  $\omega$  rezonans chastotaga nisbatan ikki marta katta bo'lsa, bu qarshilik nimaga teng?  
A)  $\sqrt{R^2 + \left(\frac{3L}{2C}\right)^2}$   
B)  $\sqrt{R^2 + \left(2\sqrt{\frac{C}{L}} + \frac{1}{2}\sqrt{\frac{L}{C}}\right)^2}$   
C)  $\sqrt{R^2 + \left(\sqrt{\frac{C}{L}} - \sqrt{\frac{L}{C}}\right)^2}$   
D)  $\sqrt{R^2 + \left(\sqrt{\frac{C}{L}} + \sqrt{\frac{L}{C}}\right)^2}$
7. Prujinaga mahkamlangan shar muvozanat vaziyatidan chiqarib qo'yib yuborildi. Prujina muvozanat vaziyatidan amplitudaning yarmigacha ( $v_1$ ) va to'rttdan bir qismigacha ( $v_2$ ) uzoqlashgan nuqtalardagi tezliklari nisbati  $v_1/v_2$  ni toping. Tebranishlar kosinus qonuni asosida ro'y bermoqda.  $\sin 30^\circ = 1/2$ ;  $\sin 82^\circ = 0,99$ ;  $\sin 60^\circ = \sqrt{3}/2$ ;  $\sin 75^\circ = 0,96$   
A)  $\sqrt{5}/5$  B)  $\sqrt{3}/2$  C)  $2\sqrt{5}$  D) 2
8. Agar yorug'lik impulsi moddada  $1,5 \text{ m}$  masofani  $0,0075 \mu\text{s}$  da o'tsa moddaning sindirish ko'rsatkichi qanday?  
A) 1,2 B) 1,8 C) 1,5 D) 1,4
9. Massasi  $700 \text{ g}$  bo'lgan jismni vertikal ravishda yuqoriga  $15 \text{ m/s}$  tezlik bilan otildi. U yerga  $13 \text{ m/s}$  tezlik bilan qaytib tushdi. Havoning qarshiligini yengish uchun bajarilgan ishni (J) hisoblang.  
A) 18,6 B) 19,6 C) 19,2 D) 19,4
10. 2 jism  $t$  vaqt oralig'i bilan, bir xil  $v_0$  boshlang'ich tezlik bilan yuqoriga vertikal tik otildi. 2-jism 1-jismga nisbatan qanday tezlik bilan harakatlanadi?  
A)  $v_0 - gt$  B)  $v_0/g + t$  C)  $gt - v_0$  D)  $gt$
11. Tok manbaidagi mis kuporosining eritmasi orqali  $500 \text{ C}$  miqdoriga zaryadli ionlar o'tganda elektrodlardagi kuchlanish  $2 \text{ V}$  bo'lsa, tok qancha ish (J) bajargan?  
A) 500 B) 1000 C) 200 D) 2000
12. Induksiyasi  $20 \text{ mT}$  bo'lgan bir jinsli magnit maydonda joylashgan uzunligi  $50 \text{ sm}$  bo'lgan,  $10 \text{ A}$  tok o'tayotgan o'tkazgichni, magnit maydon yo'nalishiga perpendikular ravishda  $40 \text{ sm}$  masofaga ko'chirishga bajarilgan ishni (mJ) toping.  
A) 20 B) 10 C) 50 D) 40
13. Agar tok kuchi  $30 \text{ A}$  bo'lganda tashqi zanjirdagi quvvat  $180 \text{ W}$ , tok kuchi  $10 \text{ A}$  bo'lganda esa  $100 \text{ W}$  bo'lsa, tok manbaining ichki qarshiligi ( $\Omega$ ) va EYuK (V) qancha?  
A) 5; 10 B) 0,2; 3 C) 0,4; 6 D) 0,2; 12
14. Elektromagnit to'lqinlari hosil qiluvchi asbob - ...  
A) Leybnis tarog'i B) Geyger sanagichi  
C) Faradey so'rg'ichi D) Gers vibrator

15.  $m$  massali zarraning energiyasi  $E$  bo'lsa, kinetik energiyasi  $W$  nimaga teng?  
 A)  $W = c\sqrt{p^2 + m^2c^2}$  B)  $W = E - mc^2$   
 C)  $W = p^2/2m$  D)  $W = E + mc^2$
16. Lorens kuchi ifadasining to'g'ri javob yozilgan variantini tanlang.  
 A)  $F = qE$  B)  $F = IB\sin\alpha$   
 C)  $F = qvB\sin\alpha$  D)  $F = \frac{mv^2}{R}$
17. Idishdagi gazning hajmi o'zgarmas temperaturada 5% ga kamayishi uchun gaz bosimini necha foizga orttirish kerak?  
 A) 7 B) 5,3 C) 4,9 D) 10
18. Silindrik idishga bir xil massali suv ( $\rho_{suv}=1\cdot 10^3 \text{ kg/m}^3$ ) va simob ( $\rho_{sim}=13,6\cdot 10^3 \text{ kg/m}^3$ ) qo'yildi. Idishdagi suyuqliklar ustunining umumiy balandligi 143 sm. Idish tubiga bo'lgan bosim qancha (kPa)?  
 A) 15,4 B) 26 C) 14,6 D) 10
19. Bir atomli 1 mol gaz izobarik kengayganda 160 J ish bajaradi va temperaturasi  $10^\circ\text{C}$  ga ortadi. Gazga qancha issiqlik miqdori (J) berilgan?  
 A) 160 B) 124 C) 284 D) 84
20. Teplovoz 1 vagonga  $6 \text{ m/s}^2$ , 2 vagonga  $4 \text{ m/s}^2$ , 3 vagonga  $2 \text{ m/s}^2$  tezlanish beradi. Bu uchala vagondan iborat sostavga teplovoz qanday tezlanish ( $\text{m/s}^2$ ) beradi?  
 A) 11/15 B) 12/11 C) 12/15 D) 11/12
21. Alfa zarra ( $m=6,65\cdot 10^{-27} \text{ kg}$ ) elektr maydonida  $6,4\cdot 10^{11} \text{ m/s}^2$  tezlanish bilan harakatlanishi uchun, elektr maydon kuchlanganligi qanday bo'lishi (kV/m) kerak?  
 A) 4,26 B) 13,3 C) 7,87 D) 26,6
22. Malus qonuni ifodalovchi formulani ko'rsating.  
 A)  $I = I_0\sin\alpha$  B)  $I = I_0 + I\cos\alpha$   
 C)  $I = I_0\cos\alpha$  D)  $I = I_0\cos^2\alpha$
23. 6 kg massali jism qiya tekislikdan o'zgarmas tezlik bilan sirpanib tushmoqda. 30 sm masofada bajarilgan ish (J) nimaga teng?
- 
- A) 5 B) 2,5 C) 9 D) 6
24. Sanoq jismi ,unga bog'langan koordinatalar sistemasi va vaqt o'lchash asbobi ... deyiladi.  
 A) koorinata boshi B) sanoq sistemasi  
 C) fazo D) sanoq jismi
25. Agar metall sirtlari 350 va 540 nm to'lqin uzunlikli nurlanish bilan galma-gal yoritilsa, u holda fotoelektronlarning maksimal tezliklari bir-biridan 2 marta farq qiladi. Bu metaldan elektronlarning chiqish ishini (J) aniqlang.  
 $h=6,63\cdot 10^{-34} \text{ J}\cdot\text{s}$   
 A)  $30\cdot 10^{-29}$  B)  $3\cdot 10^{-19}$  C)  $25\cdot 10^{-29}$   
 D)  $30\cdot 10^{-30}$
26. Massasi 350 kg bo'lgan chelak tekis tezlanuvchan harakat bilan quduqqa tushirilmoqda. Birinchi 10 s da u 35 m tushadi. Chelak osilgan arqonning taranglik kuchini (N) toping.  $g=9,8 \text{ m/s}^2$   
 A) 3250 B) 3200 C) 3330 D) 3300
27. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 10- sekundda bosib o'tgan yo'li 5- sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
 A) 19/7 B) 4 C) 19/5 D) 19/9
28. Elektr dvigateli ulangan simdan 0,5 A tok o'tmoqda. Undagi kuchlanish 20 V. Dvigatel 1 soatda qancha ish (kJ) bajaradi? Dvigatelning FIK 80% ga teng.  
 A) 480 B) 28,8 C) 800 D) 288
29. Harorati 550 K, bosimi 150 kPa bo'lgan gaz molekularining konsentratsiyasini ( $1/\text{m}^3$ ) toping. Boltsman doimiysi  $k=1,38\cdot 10^{-23} \text{ J/K}$ .  
 A)  $10^{25}$  B)  $2\cdot 10^{25}$  C)  $6\cdot 10^{25}$  D)  $5,1\cdot 10^{26}$
30. Tutash idishlardan biriga suv ( $\rho_{suv}=1000 \text{ kg/m}^3$ ), ikkinchisiga kerosin ( $\rho_{kerosin}=800 \text{ kg/m}^3$ ) qo'yildi. Suv sathidan kerosin ustuni necha foiziga yuqori bo'ladi?  
 A) 20 B) 18,6 C) 25 D) 50
31. Harorati 600 K bo'lgan bir atomli gaz molekulasi ilgariharakatining kinetik energiyasi (J) qanday bo'ladi?  
 A)  $6,21\cdot 10^{-21}$  B)  $12,4\cdot 10^{-21}$   
 C)  $62,1\cdot 10^{-21}$  D)  $10\cdot 10^{-21}$
32. Yopiq idishda suv va uning to'yingan bug'i bor. Harorat pasayganda to'yingan bug'ning zichligi qanday o'zgaradi?  
 A) boshlang'ich haroratga bog'liq  
 B) kamayadi C) o'zgarmaydi D) ortadi

33. Momaqaldiroq ovozi chaqmoq chaqnagandan 8 sekund keyin eshitildi. Chaqmoq kuzatuvchidan qancha masofada (km) chaqnagan? Tovush tezligi 343 m/s.  
A) 20 B) 2,7 C) 2700 D) 2744
34. Ko'tarish kranida 10 ta ko'char blokdan foydalaniladi. Uning necha marta kuchdan yutuq berishini aniqlang.  
A) 20 B) 32 C) 1024 D) 512
35. Uzunligi 4 m bo'lgan avtomobil s'yomka qilinayotganda plyonka obyektivida 60 mm masofada joylashgan. Agar avtomobilning negativ tasviri uzunligi 32 mm bo'lsa, uni qanday masofada (m) olingan?  
A) 8,5 B) 0,075 C) 7,5 D) 2,1
36. Rasmda tasvirlangan har bir halqa qarshiligi  $R$  ga teng bo'lgan o'tkazgichdan tayyorlanib, ular rasmda ko'rsatilgandek ulansa  $A$  va  $B$  nuqtalar orasidagi umumiy qarshilik nimaga teng bo'ladi?



- A)  $7R/2$  B)  $1,5R$  C)  $5R/2$  D)  $0,75R$

### INGLIZ TILI

- Choose the answer which correctly complete the sentence.  
I am fond of ... for walks in bad weather.  
A) *going* B) *have gone* C) *went* D) *to go*
- Choose the answer which correctly complete the sentence.  
In September, 2000, the people of Denmark voted "no" to joining the single European currency ... euro.  
A) *the* B) *an* C) *a* D) -
- Choose the answer which correctly complete the sentence.  
A huge snowstorm has hit Toronto. Over 40 sm of show fell over the past twelve house. Residents ... advised to stay at home.  
A) *have* B) *have been* C) *was* D) *is*
- Choose the answer which correctly completes the sentence.  
Kate reads "The Washington Post" every day. She doesn't read any ... newspapers.  
A) *other* B) *the other* C) *another* D) *others*
- Choose the answer which correctly completes the sentence.  
The roads were slippery and we ... had an accident this morning.  
A) *next* B) *nearly* C) *near* D) *nearer*
- Choose the answer which correctly completes the sentence.  
I wish I ... everything to you yesterday.  
A) *could explain* B) *have explained* C) *could have explained* D) *explained*
- Choose the answer which correctly complete the sentence.  
They have promised to lend me a tennis racket so I ... take mine.  
A) *don't have to* B) *daren't* C) *mustn't* D) *can't*
- Choose the answer which correctly completes the sentence.  
You will see nothing ... you use a microscope. It is the most interesting insect.  
A) *providing* B) *unless* C) *if* D) *in case*
- Choose the answer which correctly completes the sentence.  
Just a minute! Do you hear someone ... for help? Shall we call the police?  
A) *called* B) *calling* C) *will call* D) *to call*
- Choose the answer which correctly completes the sentence.  
I haven't heard or read about the accident ... it was on the front page of every newspaper.  
A) *although* B) *because of* C) *despite* D) *as*
- Choose the answer which correctly completes the sentence.  
Technically, glass is a mineral and ... .  
A) *so is water* B) *so water is* C) *water is so* D) *is water so*

12. Choose the answer which correctly completes the sentence.  
As soon as I walked into the room, she ... me the letter.  
A) *hand* B) *had handed* C) *was handing*  
D) *handed*
13. Choose the answer which correctly completes the sentence.  
She took the bus to work because her car ... at the time.  
A) *had serviced* B) *was serviced*  
C) *was being serviced* D) *serviced*
14. Choose the answer which correctly completes the sentence.  
We had to walk home in the rain because Jimmy ... his car keys.  
A) *lost* B) *was losing* C) *has lost*  
D) *had lost*
15. Choose the answer which correctly completes the sentence.  
The Buckets, of course, ... starve, but they felt hungry from morning till night.  
A) *were* B) *didn't* C) *does* D) *do*
16. Choose the answer which correctly completes the sentence.  
She noticed him ... away from the house.  
A) *to run* B) *was running* C) *run* D) *ran*
17. Choose the answer which correctly completes the sentence.  
"What time are we leaving tomorrow?"  
The woman asked the tour guide what time ... the next day.  
A) *did they leave* B) *we left* C) *do we leave*  
D) *they were leaving*
18. Choose the answer which correctly completes the sentence.  
The report should be ready ... two weeks.  
A) *since* B) *during* C) *in* D) *before*
19. Choose the answer which correctly completes the sentence.  
It took me one and ... half hours to get there.  
A) *an* B) *-* C) *the* D) *a*
20. Choose the answer which correctly complete the sentence.  
We went home so that we could hear the news of Eurovision ... the radio.  
A) *in* B) *for* C) *on* D) *from*
21. Choose the answer which correctly completes the sentence.  
They are not such ... children as we'd expected.  
A) *many terribly* B) *terrible* C) *terribly*  
D) *more terrible*
22. Choose the answer which correctly complete the sentence.  
There was a long line in front of the theatre. We ... wait almost an hour to buy our tickets.  
A) *need* B) *must* C) *were able* D) *had to*
23. Choose the answer which correctly complete the sentence.  
Our car stopped on the halfway to the city. We couldn't go ... because we had no petrol left.  
A) *far* B) *farthest* C) *further* D) *farther*
- Read the text. Then choose the correct answer to question 24-26.
- Contrary to common knowledge, the water, milk and meat of coconuts only begin the list of uses of this versatile tree. The outer husk of the ripe nuts contains fibres that, when separated, can be twisted into twine rope of amazing toughness. It is quite resistant to rot from dampness or seawater. Despite the advent of nails and screws, this rope continues to be widely used for binding together the timbers of houses and the parts of canoes, tools and the like. Expert craftsmen can make sizeable ropes, which, after use, become quite flexible. The inner shell of the ripe nut can be cut and carved into ladles, scrapers, combs and cups and will take a high polish. Furthermore, the sap of the coconut can be fermented to make a pleasant tasting wine, while the fresh sap can be used as food for babies.

24. According to the passage, twine rope . . .
- A) *can easily be damaged if not protected from rain and sea water.*
  - B) *is the best possible material for making small boats.*
  - C) *can be used for some of the same functions as nails.*
  - D) *is sometimes used in the manufacture of polishes.*

25. We learn from the passage that, despite the many uses of the coconut, it is . . .
- A) *better known among people as a source of food.*
  - B) *only the experts who know how to use it to the full.*
  - C) *most commonly used as a material for making ropes.*
  - D) *very difficult to grow, harvest and process the nut.*

26. It is clear from the passage that . . .
- A) *wine made from the coconut tree tastes better than other types.*
  - B) *baby food made from the coconut palm has a great nutritive value.*
  - C) *baby food made from coconut palms contains a bit of alcohol.*
  - D) *the same part of the coconut palm is used to make wine and baby food.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Johannes Brahms is a German composer, pianist, and conductor. His works (27) . . . four symphonies, songs and concertos for piano and for violin. He (28) . . . and conducted his own works.

- 27.
- A) *include*    B) *includes*    C) *are included*
  - D) *will include*

- 28.
- A) *designed*    B) *performed*    C) *attempted*
  - D) *recognized*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

One of the earliest methods of home heating, the fireplace continues (29) . . . popular today. Ancient fireplaces were usually central pits in the house that also served as stoves, light sources, and (30) . . . from wild animals. Modern fireplaces are sometimes valued more (31) . . . their appearance than their actual heating capacities.

- 29.
- A) *is*    B) *to be*    C) *was*    D) *been*
- 30.
- A) *protection*    B) *challenge*    C) *benefit*
  - D) *comfort*
- 31.
- A) *for*    B) *after*    C) *on*    D) *at*

Read the text. Then choose the correct answer to questions 32-33.

Launched on October 4, 1957, Sputnik 1 was the first craft in orbit around the earth. Named from the Russian phrase for "traveling companion of the world" (Sputnik Zemli), it was a small satellite measuring only 58 cm across. It circled the earth once 96,2 minutes and transmitted information about the earth's atmosphere. After 57 days in space, it re-entered the atmosphere and was destroyed.

This historic launch began an era of intensive space programming by both the Soviet Union and the United States. In the next three decades, hundreds of probes, satellites, and other missions were to follow Sputnik on the quest to explore both the wonders and the practical potential of space.

32. What is the main idea of the text?
- A) *Sputnik 1's crash on re-entry delayed other explorations.*
  - B) *The success of Sputnik 1 exploration.*
  - C) *United States tried hard to launch their own satellite.*
  - D) *The main role of satellites is to send information from space.*

33. How long did Sputnik 1 stay in space?  
A) 57 days    B) 4 days    C) 96,2 minutes  
D) 58 minutes

Read the text. Then choose the correct answer to question 34-36.

In 1971 the Great Persian Empire celebrated the 1500 th anniversary of its founding.

Its founder was Cyrus the Great, who proclaimed himself the King of the Kings. His son Cambyses succeeded his throne, conquering Egypt and expanding the empire.

Darius I followed Cambyses and was probably the most famous of this long line of kings. Under his rule, the empire stretched as far as India.

Governors were placed in charge of the provinces. Extensive systems of roads and waterways improved communication throughout the kingdom. He was one of a few ancient rulers who permitted his subjects to worship as they wished. The magnificent city of Persepolis, founded under his direction in 518 B.C. was a ceremonial center.

34. Who is considered the creator of the Persian Empire?  
A) *Persepolis*    B) *Darius I*    C) *Cyrus*  
D) *Combyses*
35. Who was the predecessor of Cambyses?  
A) *Darius I*    B) *Cyrus*    C) *Egypt*  
D) *Persepolis*

36. Who were responsible for the provinces?  
A) *the subjects*    B) *the King*  
C) *the governors*    D) *the Egyptians*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000055**

Toshkent – 2014



**MATEMATIKA (INFORMATIKA BILAN)**

1. 2012<sup>2011</sup><sup>2010</sup> sonining oxirgi raqamini toping.

- A) 8 B) 2 C) 6 D) 4

2.  $\frac{\left(\frac{1}{a} + \frac{1}{b} - \frac{2c}{ab}\right)(a+b+2c)}{\frac{1}{a^2} + \frac{1}{b^2} + \frac{2}{ab} - \frac{4c^2}{a^2b^2}}$  ifodani

soddalashtiring va uning son qiymatini toping.

$$a=7,4; b = \frac{5}{37}.$$

- A)  $\frac{1}{2}$  B) 1 C) 0 D)  $\frac{4}{5}$

3.  $\int_0^2 (x^2 + 1) dx$  ni hisoblang.

- A)  $4\frac{5}{6}$  B)  $4\frac{3}{4}$  C)  $4\frac{2}{3}$  D)  $4\frac{4}{5}$

4.  $\begin{cases} \sin(x-y) = 2 \sin x \sin y, \\ x+y = \frac{\pi}{2} \end{cases}$  sistemani yeching.

A)  $\left(-\frac{\pi}{8} + \frac{\pi k}{2}; \frac{5\pi}{8} - \frac{\pi k}{2}\right), k \in Z$

B)  $\left(\frac{\pi}{8} + \frac{\pi k}{2}; \frac{5\pi}{8} + \frac{\pi k}{2}\right), k \in Z$

C)  $\left(-\frac{\pi}{8} + \pi k; \frac{5\pi}{8} - \pi k\right), k \in Z$

D)  $\left(\frac{\pi}{8} + \pi k; \frac{5\pi}{8} + \pi k\right), k \in Z$

5.  $\vec{a}(1; -1)$  va  $\vec{b}(-2; m)$  vektorlar kollinear.  $m$  ning nimaga tengligini toping.

- A) 2 B) 1 C) -3 D) -2

6. Idish to'g'ri burchakli parallelepiped shaklida bo'lib, uning bo'yi 60 sm, eni 45 sm va balandligi 47 sm ga teng. Agar idishdagi suv sathi 40 sm balandlikda bo'lsa, unda necha litr suv bor?

- A) 135 B) 106 C) 115 D) 108

7. Sharning radiusi  $\frac{\sqrt{48}}{\sqrt{\pi}}$  ga teng. Radiusning oxiridan u bilan  $60^\circ$  li burchak tashkil etadigan kesuvchi tekislik o'tkazilgan. Kesimning yuzini toping.

- A) 14 B) 8 C) 12 D) 16

8. Muntazam yigirmaburchakning eng katta va eng kichik diagonallari orasidagi burchakni toping.

- A)  $80^\circ$  B)  $72^\circ$  C)  $82^\circ$  D)  $76^\circ$

9. Zavodning 3 ta sexida 2740 nafar ishchi ishlaydi. Ikkinchi sexda birinchisiga nisbatan 140 ta ko'p ishchi, uchinchi sexda esa ikkinchisiga nisbatan 1,2 marta ko'p ishchi ishlaydi. Har bir sexda qanchadan ishchi ishlaydi?

- A) 760; 980; 1000 B) 760; 900; 1080  
C) 750; 900; 1090 D) 790; 900; 1050

10.  $x^2 - 3x - 6\sqrt{3x} + 18 = 0$  tenglama ildizlari ko'paytmasining ildizlari soniga ko'paytmasini toping.

- A)  $\frac{2}{3}$  B) -3 C) 3 D) 6

11.  $f(x) = \sin 2x + 4x, f'(x) = ?$

- A)  $2\cos 2x + 4$  B)  $\cos 2x + 4x$   
C)  $-\cos 2x + 4$  D)  $\cos x + 4$

12. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $4\sqrt{2}$  bo'lsa, aylanaga ichki chizilgan kvadratning yuzini hisoblang.

- A) 64 B) 50 C) 52 D) 48

13.  $\frac{\sqrt{x^2 - 3x + 2}}{4x - x^2 - 3} \geq 0$

- A)  $(0; \infty)$  B)  $(0; 1)$  C)  $[2; 3)$  D)  $[0; 2)$

14. Doiraning yuzasi 44% ga oshirilsa, uning radiusi necha foizga oshadi?

- A) 35 B) 25 C) 20 D) 30

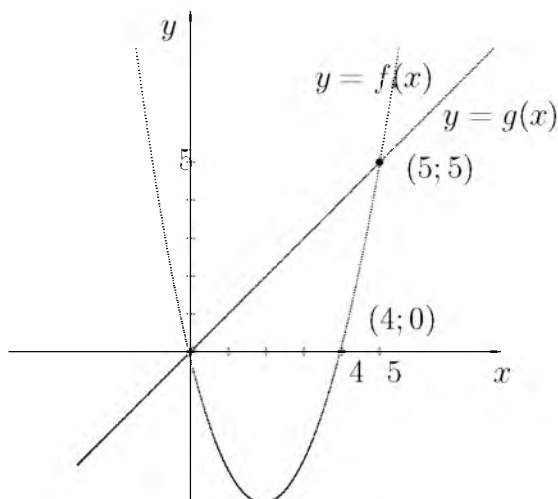
15.  $|\log_{2013} x - 2| + |\log_{2013} x - 4| < 4$  tengsizlikni yeching.

- A)  $\emptyset$   
B)  $\{2013; 2013^5\}$   
C)  $\{2013\}$   
D)  $(2013; 2013^5)$

16.  $x, y$  butun sonlar uchun  $-8 \leq x \leq 19,$   
 $-4 \leq y \leq 13$  va  $x - y \neq 0$  bo'lsa,  $\frac{x+y}{x-y}$  ning eng katta qiymatini toping.

- A) 32 B) 27 C) 18 D) 28

17. Quyidagi chizmaga asoslanib  $\frac{f(8)}{g(8)}$  ning qiymatini toping.



- A) 4 B) -4 C) 3 D) 2
18. Cheksiz kamayuvchi ishorasi almashinuvchi geometrik progressiyada ketma-ket kelgan uchta hadning yig'indisi -21 ga, ko'paytmasi 729 ga teng bo'lsa, shu sonlarni toping.  
A) -28; 14; -7 B) -3; 9; -27 C) -27; 9; -3 D) 27; -9; 3
19.  $y = \log_{0,5}x$  funksiyaga teskari funksiyani toping.  
A)  $y = (0,5)^x$  B)  $x = \log_{0,5}y$  C)  $x = (0,5)^y$  D)  $x = \log_2y$
20. 117, 177, 237 sonlarini  $A$  soniga bo'lganda mos ravishda 5, 9, 13 qoldiqlar chiqadi.  $A$  ning qabul qilishi mumkin bo'lgan qiymatlari yig'indisini toping.  
A) 42 B) 120 C) 98 D) 31
21. Yo'lovchi yuqoriga harakatlanib, harakatsiz eskalatorlarda 3 minutda, harakatlanayotgan eskalatorlarda 45 sekundda ko'tariladi. Eskalatorlarda harakatsiz turgan yo'lovchi qancha vaqtda (min) ko'tariladi?  
A) 2 B) 1 C) 2,5 D) 1,5
22.  $y = x + 3$ ,  $x + 2y = 6$  va  $y = 0$  to'g'ri chiziqlar bilan chegaralangan figuraning yuzini toping.  
A) 12,5 B) 27 C) 13,5 D) 25
23.  $(x - 1)^2(x^2 - 2x) = 12$  tenglamaning haqiqiy ildizlari yig'indisini toping.  
A) 0 B) 4 C) 2 D) 3
24.  $M$  nuqta  $ABC$  uchburchakning og'irlik markazi. Shu uchburchak tekisligidan 7 sm uzoqlikda  $O$  nuqta olingan.  $\overline{OA} + \overline{OB} + \overline{OC}$  vektor bilan  $\overline{OM}$  vektor uzunliklari nisbatini toping.  
A) 2 B) 4 C) 3 D) 1
25.  $\frac{2x - 5}{x + 3} > 3$  tengsizlikni yeching.  
A)  $(-14; -3)$   
B)  $(-\infty; -14) \cup (-3; \infty)$   
C)  $(-14; -3) \cup (-3; \infty)$   
D)  $(-14; 3)$
26. Teng yonli trapetsiyaning diagonali yon tomoniga perpendikular. Trapetsiyaning kichik asosi 2 sm, balandligi  $\sqrt{24}$  sm ga teng. Trapetsiya katta asosining uzunligini (sm) toping.  
A)  $2\sqrt{24}$  B) 8 C) 10 D) 6
27.  $\frac{x^{\frac{1}{2}} + 1}{x + x^{\frac{1}{2}} + 1} : \frac{1}{x^{1,5} - 1}$  ifodani soddalashtiring.  
A) 1 B)  $1 - x$  C)  $x - 1$  D)  $x + 1$
28. Muntazam o'n burchakning har bir ichki burchagi necha gradusga teng?  
A)  $150^\circ$  B)  $144^\circ$  C)  $135^\circ$  D)  $146^\circ$
29. Radiusi 5 ga teng bo'lgan doiradagi uzunligi 8 ga teng vatar doira markazidan qancha uzoqlikda bo'ladi?  
A) 3,2 B) 4 C) 3,6 D) 3
30. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $2\sqrt{3}$  sm bo'lsa, shu aylanaga ichki chizilgan kvadratning yuzini ( $\text{sm}^2$ ) hisoblang.  
A) 20 B) 16 C) 18 D) 12
31. "Mantiq insonga shunday bir qoida beradiki, bu qoida yordamida xulosa chiqarishda xatolardan saqlanadi". Ushbu fikr kimga tegishli?  
A) Abu Nasr Farobiy B) Alisher Navoiy  
C) Kamoliddin Behzod D) Abu Ali Ibn Sino
32. Protessorlardan ma'lumotlarni baytlarda olib, qurilmalarga bitlarda uzatadigan port turini aniqlang.  
A) parallel B) ketma-ket C) slot  
D) shina

33. Kompyuter uchun yangi dasturlar tayyorlash va tahrirlashni yengillashtiruvchi dasturlar qanday nomlanadi?

- A) *Sistema dasturlari* B) *Amaliy dasturlar*  
C) *Uskunaviy dasturlar* D) *Utilitalar*

34. MS Excelning A5:C12 katakchalar blokida nechta katakcha bor?

- A) 22 ta B) 18 ta C) 21 ta D) 24 ta

35. Axborot uzatish jarayonida quyidagi qismlardan qaysi biri bo'lishi shart?

- 1) Axborot qabul qiluvchi 2) Axborot manbai  
3) Axborot uzatish vositasi  
A) 1, 2, 3 B) 1 C) 1, 2 D) 1, 3

36. Random (x) funksiyasining vazifasini aniqlang.

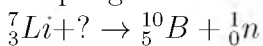
- A) *Parametrli takrorlash funksiyasi*  
B) *[0, x) oraliqdagi tasodifiy sonni aniqlash funksiyasi*  
C) *[0, 1) oraliqdagi tasodifiy sonni aniqlash funksiyasi*  
D) *Tasodifiy harflar generatori*

## FIZIKA

1. 72 km/h tezlikda harakatlanayotgan poyezd dvigateli o'chirilsa, qancha masofa (m) yo'l o'tib to'xtaydi? Ishqalanish koeffitsienti  $\mu=0,02$ .

- A) 720 B) 1440 C) 1000 D) 500

2. Yadro reaksiyasida tushirib qoldirilgan zarrani aniqlang.

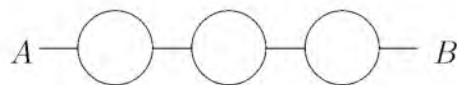


- A)  $\gamma$  B)  $\alpha$  C)  $n$  D)  $\beta$

3. Gaz razryadi jarayonida qanday zarrachalar ishtirok etadi?

- A) *faqat elektronlar*  
B) *elektronlar, musbat va manfiy ionlar*  
C) *elektronlar va kovaklar*  
D) *faqat ionlar*

4. Rasmda tasvirlangan har bir halqa qarshiligi  $R$  ga teng bo'lgan o'tkazgichdan tayyorlanib, ular rasmda ko'rsatilgandek ulansa  $A$  va  $B$  nuqtalar orasidagi umumiy qarshilik nimaga teng bo'ladi?



- A)  $1,5R$  B)  $0,75R$  C)  $7R/2$  D)  $5R/2$

5. Bikrligi 250 N/m bo'lgan prujinaga bog'lab qo'yilganda 16 s ichida 20 marta tebradigan yukning massasini (kg) toping.  $\pi^2=10$

- A) 16 B) 0,4 C) 1,6 D) 4

6. Buyum va tasvir orasidagi masofa 9 sm. Agar tasvir 2 marta kattalashgan bo'lsa, linzaning fokus masofasi (sm) qanday?

- A) 4,5 B) 6 C) 2 D) 18

7. Chang'ichi  $0,2 \text{ m/s}^2$  tezlanish bilan harakatlanib, uzunligi 50 m bo'lgan qiyalikni 10 s da o'tdi. Uning qiyalik boshidagi tezligi (m/s) qanday bo'lgan?

- A) 4 B) 5 C) 3 D) 2

8. 220 V kuchlanishli tarmoqqa ulangan lampochkadan 1 A tok o'tmoqda. Lampochkada tok bajargan ishning 4% yorug'lik energiyasiga aylanadi. Lampochkada 0,5 soat davomida qancha yorug'lik energiyasi (J) tarqaladi?

- A) 15840 B) 15800 C) 15000 D) 15400

9.  $\alpha$ -zarraning tezligi 0 dan  $0,9c$  gacha orttirilganda uning massasi qanchaga ortadi (m.a.b.)? Tinchlikdagi massasi  $m_0=4$  m.a.b. deb oling.

- A) 5,5 B) 4,8 C) 6 D) 5,2

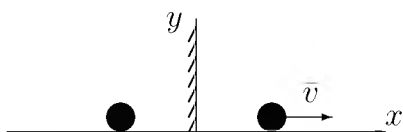
10. Izolatsialangan sistema energiyasi  $\Delta W$  ning o'zgarishi sistema bajargan  $A$  ishga teng. Quyidagi tasdiqqa mos formulasi ko'rsating.

- A)  $\Delta W = Q$  B)  $\Delta W = -A$   
C)  $\Delta W - A = Q$  D)  $\Delta W = A$

11. Tebranish konturidagi tebranishlar chastotasini 2 marta orttirish uchun kondensator sig'imini qanday o'zgartirish lozim?

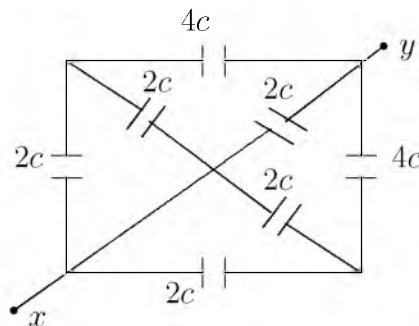
- A) 2 marta kamaytirish B) 4 marta orttirish  
C) 9 marta orttirish D) 4 marta kamaytirish

12. Silindrik idishga bir xil massali suv ( $\rho_{suv}=1 \cdot 10^3 \text{ kg/m}^3$ ) va simob ( $\rho_{sim}=13,6 \cdot 10^3 \text{ kg/m}^3$ ) qo'yildi. Idishdagi suyuqliklar ustunining umumiy balandligi 143 sm. Idish tubiga bo'lgan bosim qancha (kPa)?  
A) 10 B) 26 C) 15,4 D) 14,6
13. Agar tormozlanishdagi ishqalanish koeffitsienti 0,4 ga teng bo'lsa, 12 m/s tezlik bilan harakatlanayotgan avtobus qancha vaqtdan (s) keyin to'xtaydi?  $g=10 \text{ m/s}^2$   
A) 30 B) 4 C) 3 D) 0,3
14. Bir jinsli elektr maydonida  $\alpha$ -zarrachasi kuchlanganlik vektorining yo'nalishi bo'ylab ko'chgan bo'lsa uning potensial energiyasi qanday o'zgaradi?  
A) kamayadi B) ortqdi C) o'zgarmaydi D) avval ortib so'ngra kamayadi
15. Harorati  $-73^\circ\text{C}$  bo'lgan gaz molekullari ilgarilanma harakat kinetik energiyasini 3 marta ortirish uchun gazni qanday haroratgacha ( $^\circ\text{C}$ ) qizdirish kerak?  
A) 219 B) 600 C) 200 D) 327
16. Agar azotning ionlashuv potensial 14,5 V bo'lsa, azot atomini ionlashtirish uchun elektron qanday eng kichik tezlikki (m/s) ega bo'lish kerak?  
A)  $1,8 \cdot 10^6$  B)  $3,6 \cdot 10^6$  C)  $2,3 \cdot 10^6$  D)  $2,6 \cdot 10^6$
17. Sharcha yassi ko'zgu bilan bog'langan sistemada  $\vec{v}$  tezlik bilan kuzgudan uzoqlashmoqda. Sharcha tasvirini tezligi nimaga teng?



- A)  $2v$  B)  $v$  C)  $-v$  D)  $-2v$

18. Sxemaning umumiy sig'imini toping.



- A)  $2C$  B)  $4C$  C)  $3C$  D)  $6C$

19. Qizil yorug'lik nuri ( $\lambda = 700 \text{ nm}$ ) va rentgen nuri ( $\lambda = 10^{-10} \text{ m}$ ) ning energiyalari nisbati  $\frac{E_c}{E_r}$  qanchaga teng?  
A)  $7 \cdot 10^{-4}$  B)  $1,4 \cdot 10^{-4}$  C)  $1,4 \cdot 10^{-3}$  D)  $7 \cdot 10^{-5}$
20. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 10- sekundda bosib o'tgan yo'li 5- sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
A)  $19/5$  B)  $19/9$  C) 4 D)  $19/7$
21. 4 g vodoroddagi modda miqdorini (mol) toping.  
A) 3 B) 4 C) 1 D) 2
22. Tovush havodan suvga o'tganda tovush to'liqinining uzunligi necha marta o'zgaradi? Tovushning suvdagi tezligi 1480 m/s, havodagi tezligi 340 m/s.  
A) 435 B) 4,35 C) 0,435 D) 43,5
23. Gorizontallik bilan unda yotgan 0,7 kg massali taxta orasidagi ishqalanish koeffitsienti 0,6 ga teng. Taxtaga 0,3 kg massali yuk qo'yilgan. Yuk va taxta orasidagi ishqalanish koeffitsienti 0,4 ga teng. Yuk sirpanib tushib qolishi uchun taxtani gorizontallik yo'nalishda eng kamida qanday doimiy kuch (N) bilan tortish kerak?  
A) 11 B) 19 C) 9,8 D) 4,9
24. Yerdan Oygacha bo'lgan masofa 384 ming km bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?  
A) 1,5 B) 1,3 C) 1,2 D) 1,4

25. Yopiq idishga to'yingan bug' qamalgan bo'lib bosimi 10 kPa. Agar bosimni 2 marta oshirib, hajmini 2 marta kamaytirsak to'yingan suv bug'larining zichligi qanday o'zgaradi? Jarayon izotermik.
- A) 2 marta kamayadi  
B) 2 marta oshadi  
C) haroratning qandayligicha bog'liq  
D) o'zgarmaydi
26. Tezligi 10 m/s, massasi 10 kg bo'lgan granata ikki bo'lakka ajraldi. Katta bo'lakning tezligi 25 m/s bo'lib granataning harakat yo'nalishida, kichik bo'lakning tezligi 12,5 m/s bo'lib qarama-qarshi yo'nalishda harakatlansa, bo'laklarning massalarini (kg) toping.
- A) 6 va 4    B) 7 va 3    C) 9 va 1    D) 8 va 2
27. Elementlari ketma-ket ulangan zanjirning o'zgaruvchan tokka nisbatan to'liq qarshiligi  $\sqrt{R^2 + (\omega L - 1/\omega C)^2}$  ga teng. Bu zanjirning doimiy tokka nisbatan qarshiligi qanday?
- A)  $\sqrt{R^2 + (\omega C + 1/\omega L)^2}$   
B)  $\infty$   
C)  $R$   
D) 0
28. Isitgich elektr choynakda boshlang'ich temperaturasi 10°C bo'lgan 2 kg massali suvni quvvati 1 kVt bo'lgan. Elektr choynakning FIK 90%. Agar kuchlanish 220 V bo'lsa, isitgich elementining elektr spiralidagi tok kuchi (A) qanday bo'ladi?
- A) 45    B) 450    C) 4,5    D) 4500
29. Elektron vakuumda induksiyasi  $5 \cdot 10^{-3}$  T bo'lgan bir jinsli magnitoviy maydonda  $10 \cdot 10^3$  km/s tezlik va induksiya chiziqlariga perpendikular yo'nalgan holda harakatlanmoqda. Elektroniga ta'sir etuvchi kuchni toping (N)?
- A)  $2 \cdot 10^5$     B)  $4 \cdot 10^{-15}$     C)  $5 \cdot 10^{-15}$   
D)  $8 \cdot 10^{-15}$
30. 25 kg toshko'mir batamom yonganda qancha issiqlik (J) ajralib chiqadi?  $q=2,7 \cdot 10^7$  J/kg
- A)  $6 \cdot 10^8$     B)  $6,75 \cdot 10^8$     C)  $6,5 \cdot 10^8$     D)  $5 \cdot 10^8$
31. Ikkita proton qarama-qarshi yo'nalishda harakatlanmoqda. Ular o'rtasida mavjud bo'luvchi barcha ta'sir kuchlarini aniqlang. 1 - elektr tortishish; 2 - elektr itarishish; 3 - magnit tortishish; 4 - magnit itarishish; 5 - gravitasion tortishish
- A) 1, 4, 5    B) 2, 4, 5    C) 1, 3, 5    D) 2, 3, 5
32. Suyuqlikning idish devoriga bosim kuchi  $F$  idish tubiga bo'lgan bosim kuchiga teng bo'lishi uchun  $R$  radiusli silindrik idishga qanday balandlik  $H$  gacha suv qiyish kerak?
- A)  $R = H/2$     B)  $R = 4H$     C)  $R = 2H$   
D)  $R = H$
33. Bola yelkasiga 15 kg yukni ko'tarib turibdi. Agar bolaning massasi 45 kg bo'lsa, Yer tomonidan bolaga ta'sir etayotgan reaksiya ko'chini (N) toping.
- A) 150    B) 600    C) 300    D) 450
34. 30 m/s tezlik bilan gorizontol otilgan 1 kg massali jismning 6-sekund oxiridagi kinetik energiyasini (kJ) aniqlang.
- A) 20    B) 4,5    C) 1    D) 2,25
35. Bir xil massali va bir xil temperaturadagi karbonat angidrid va metan gazlarining zichliklari ham teng bo'lishi uchun bosimlari qanday nisbatda bo'lishi kerak?
- A) 1:3    B) 1:5    C) 1:2    D) 1:4
36. 2 g geliy doimiy bosim ostida 17 °C ga isitilgan bo'lsa gaz bajargan ishni  $A$  (J) va ichki energiyaning  $\Delta U$  (J) o'zgarishini aniqlang. ( $M_{He}=40$  g/mol;  $R=8$  J/(mol·K))
- A) 102; 272    B) 68; 170    C) 102; 170  
D) 68; 102

### INGLIZ TILI

1. Choose the answer which correctly completes the sentence.
- Our new office building will be located downtown ... the corner of Euclid Avenue and East Ninth Street.
- A) in    B) on    C) of    D) to

2. Choose the answer which correctly completes the sentence.  
Even though a great deal of the lawn is open to the sun, there are ... of shade trees to make it comfortable.  
A) *some* B) *plenty* C) *no* D) *none*
3. Choose the answer which correctly complete the sentence.  
We hurried to the airport, but the plane ... a few minutes ago.  
A) *was taken off* B) *has taken off*  
C) *take off* D) *took off*
4. Choose the answer which correctly completes the sentence.  
A telephone recorder tells callers what time ..., so you needn't go specially to find out the time.  
A) *start the movie* B) *the movie starts*  
C) *starts the movie* D) *does the movie start*
5. Choose the answer which correctly completes the sentence.  
She went to the bank ... to get some money.  
A) *in order* B) *in case* C) *even though*  
D) *unless*
6. Choose the answer which correctly completes the sentence.  
We would rather ... out late tonight.  
A) *not stay* B) *not to stay* C) *staying*  
D) *don't stay*
7. Choose the answer which correctly completes the sentence.  
Dad, I have nothing to wear. The jeans you bought me ... fit me.  
A) *isn't* B) *aren't* C) *don't* D) *doesn't*
8. Choose the answer which correctly complete the sentence.  
Staying in a hotel costs ... renting a room in a dormitory for a week.  
A) *as much twice as* B) *twice more as*  
C) *twice more than* D) *twice as much as*
9. Choose the answer which correctly complete the sentence.  
Fatima wouldn't have overslept if her alarm-clock ... slow.  
A) *hadn't been* B) *hasn't been* C) *weren't*  
D) *wasn't*
10. Choose the answer which correctly completes the sentence.  
Sunday morning breakfast ... in the kitchen at nine.  
A) *is serving* B) *serves* C) *is served*  
D) *is being served*
11. Choose the answer which correctly completes the sentence.  
"Don't let anyone into the house."  
Mrs Jackson told her son ... anyone into the house.  
A) *not let* B) *don't let* C) *not to let*  
D) *didn't let*
12. Choose the answer which correctly completes the sentence.  
The course is very popular, but we are only able to accept twenty of the ... people.  
A) *application* B) *applying* C) *to apply*  
D) *apply*
13. Choose the answer which correctly completes the sentence.  
The Great Wall of China is ... structure that has ever been built.  
A) *longer* B) *long* C) *longest*  
D) *the longest*
14. Choose the answer which correctly completes the sentence.  
Did you tell him the news? He hadn't heard the news, ...?  
A) *had he* B) *he had* C) *hadn't he*  
D) *had he heard*
15. Choose the answer which correctly complete the sentence.  
We usually have ... breakfast at 8 o'clock.  
A) - B) *the* C) *an* D) *a*
16. Choose the answer which correctly completes the sentence.  
When did you ... the books back?  
A) *have to give* B) *must give*  
C) *had to give* D) *can give*
17. Choose the answer which correctly completes the sentence.  
Dan's goldfish died when he was away on holiday. His sister forgot ... them.  
A) *to be fed* B) *to feed* C) *being fed*  
D) *feeding*

18. Choose the answer which correctly complete the sentence.

As usual, he woke up late and had ... big breakfast.

A) - B) *an* C) *the* D) *a*

19. Choose the answer which correctly complete the sentence.

I got lost in the forest because I took the road I ... before.

A) *never took* B) *didn't never take*  
C) *had never taken* D) *didn't take*

20. Choose the answer which correctly completes the sentence.

If I bought him a computer he would ... games all day long.

A) *be playing* B) *to play* C) *have played*  
D) *played*

21. Choose the answer which correctly completes the sentence.

I didn't get a promotion ... working very hard.

A) *however* B) *in spite of*  
C) *despite the fact* D) *although*

22. Choose the answer which correctly completes the sentence.

She would have recognised him if she ... him before.

A) *saw* B) *had seen* C) *would see* D) *see*

23. Choose the answer which correctly completes the sentence.

I didn't see Diana at the party, so she ... have been there.

A) *mustn't* B) *can't* C) *shouldn't*  
D) *oughtn't*

Read the text. Then choose the correct answer to question 24-26.

In the past, before technology was used to monitor the weather accurately, people looked at the skies, watched how animals and plants behaved, and relied on signs and superstitions to forecast the weather. Indeed, some people still believe that, when cows lie down or a cat sneezes, it is going to rain. Nowadays, scientists who study the weather, called meteorologists, use many different methods to make their forecasts. Satellites monitor our weather and send information to computers at special processing stations. On the ground, weather stations all over the world record wind speeds and directions, temperature, clouds and air pressure.

24. It is clear from the passage that reasonably accurate weather forecasting ...
- A) *is now available worldwide.*  
B) *does not require much technological assistance.*  
C) *is of little importance to most people in the world.*  
D) *is just one stage in an effort to control the climate.*
25. As is pointed out in the passage, before the coming of technology, ...
- A) *the only way to learn about the weather was through the behaviour of plants and animals.*  
B) *people weren't really interested in weather conditions.*  
C) *the methods used to forecast the weather are all now regarded as completely useless.*  
D) *several methods were used in an effort to forecast the weather.*

26. According to the passage, it is now possible, with the aid of technology, to forecast the weather, but ...
- A) *much relevant material is never processed.*
  - B) *long-term forecasts are still far from accurate.*
  - C) *it is still a very complex process.*
  - D) *changing wind speeds can affect predictions.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Although they were described as the (27)... designs in many years, there isn't anything very new about the latest line of shoes from Santorelli. As one of the most famous designers in Italy, Salvatore Santorelli is expected to do more than simply repeat the previous year's (28)... formula of "smart, but casual" sandals in a range of pastels.

- 27.
- A) *Italian first new*    B) *new first Italian*
  - C) *first new Italian*    D) *first Italian new*
- 28.
- A) *succession*    B) *successfully*    C) *success*
  - D) *successful*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

In 900AD the cities of the Mayan civilization were still prosperous, but a hundred years later they (29)... . A number of theories have been put (30)... to explain this. One theory is that the Mayan ruling class died out because rulers did not work and so became (31)..., and there was nobody to tell the farmers what to do.

- 29.
- A) *had abandoned*    B) *have been abandoned*
  - C) *had been abandoned*    D) *abandoned*
- 30.
- A) *forward*    B) *at*    C) *through*    D) *down*

- 31.
- A) *unhealth*    B) *healthy*    C) *health*
  - D) *unhealthy*

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *The danger of two breeds of dolphins disappearing.*
  - B) *The danger of hunting for the Brazilian population.*
  - C) *The breeding of small river dolphins.*
  - D) *Hydro-electric dam projects on the Yangtze river.*



33. What does the number 10 in the text refer to?
- A) *The percentage of Amazonian dolphins which die out every year.*
  - B) *The percentage of living Yangtze river dolphins.*
  - C) *Groups of biologist who are trying to repopulate dolphins.*
  - D) *Governmental organizations which fight the pollution of rivers.*
36. Why is the Great Pyramid of Giza considered one of the Seven Wonders of the World?
- A) *it was built by a super race*
  - B) *it was selected as the tomb of Pharaoh Cheops*
  - C) *it is perfectly aligned to the four cardinal points of the compass and contains many prophesies*
  - D) *it is very old*

Read the text. Then choose the correct answer to question 34-36.

The Great Pyramid of Giza, a monument of wisdom and prophecy, was built as a tomb for Pharaoh Cheops in 2720 B.C. Despite its antiquity, certain aspects of its construction make it one of the truly great wonders of the world. The four sides of the pyramid are aligned almost exactly on true north, south, east, and west - an incredible engineering feat. The ancient Egyptians were sun worshippers and great astronomers, so computations for the Great Pyramid were based on astronomical observations.

Explorations and detailed examinations of the base of the structure reveal many intersecting lines. Further scientific study indicates that these represent a type of time line of events past, present, and future. Many of the events have been interpreted and found to coincide with known facts of the past.

Others are prophesied for future generations and presently are under investigation.

Was this superstructure made by ordinary beings, or one built by a race superior to any known today?

34. What did the ancient Egyptians base on their calculations?
- A) *advanced technology*
  - B) *knowledge of the earth's surface*
  - C) *observation of the celestial bodies*
  - D) *advanced tools of measurement*
35. Why was the Great Pyramid constructed?
- A) *as an engineering feat*
  - B) *as a religious temple*
  - C) *as a tomb for the pharaoh*
  - D) *as a solar observatory*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000056**

Toshkent – 2014

### MATEMATIKA (INFORMATIKA BILAN)

1.  $\arccos \frac{1}{x} = \frac{\pi}{2} (1 - \sqrt[3]{x})$  tenglamani yeching.  
A) 2    B)  $\pm 1$     C)  $\pm 8$     D)  $\emptyset$
2. Asosi  $a$ , perimetri 42 bo'lgan to'g'ri to'rtburchakning yuzini hisoblash uchun ifoda tuzing.  
A)  $S = a(21 - a)$     B)  $S = a(a - 21)$   
C)  $S = ax$     D)  $S = a^2 - 21$
3.  $\left( \sqrt{m(1-m)} + \frac{\sqrt{m^3}}{\sqrt{1-m}} : \left( \frac{1}{1+\sqrt{m}} + \frac{\sqrt{m}}{1-m} \right) \right) \cdot \sqrt{m(1-m)}$  ifodani soddalashtiring.  
( $m \in (0; 1)$ )  
A) 1    B)  $1 + m$     C)  $1 - m$     D)  $\frac{1}{m}$
4. 2, 6, 10, ..., 102 sonlarining o'rta arifmetik qiymatini toping.  
A) 60    B) 52    C) 42    D) 62
5.  $|\log_{2013} x - 2| + |\log_{2013} x - 4| < 4$  tengsizlikni yeching.  
A) {2013; 2013<sup>5</sup>}  
B)  $\emptyset$   
C) {2013; 2013<sup>5</sup>}  
D) {2013}
6.  $2x^2 + 5y^2 - 4xy - 2y - 4x + 5 = 0$  tenglamani qanoatlantiruvchi nechta  $(x, y)$  juftlik mavjud?  
A) mavjud emas    B) 3 ta    C) 1 ta    D) 2 ta
7. Muntazam o'nikkiburchakka tashqi chizilgan aylana radiusi  $\sqrt{2 + \sqrt{3}}$  ga teng bo'lsa, uning tomonini toping.  
A) 1    B)  $\sqrt{3}$     C) 2    D)  $\sqrt{2 + \sqrt{3}}$
8. To'g'ri burchakli  $ABC$  uchburchakda  $\angle A = 30^\circ$  bo'lib,  $AB=6$  sm li gipotenuzasini diametri qilib, doira chizildi. Hosil bo'lgan eng kichik segmentning yuzini toping.  
A)  $36\pi$     B)  $\frac{12\pi - 9\sqrt{3}}{4}$     C)  $\frac{6\pi - 9\sqrt{3}}{4}$   
D)  $18\pi$
9. Radiusi  $R$  ga teng bo'lgan doiraning markazidan bir tomonda ikkita bir-biriga parallel vatar o'tkazildi. Bunda ulardan biri  $120^\circ$  li, ikkinchisi  $60^\circ$  li yoylarni tortib tursa, vatarlar orasida joylashgan maydon yuzini toping.  
A)  $\frac{\pi R^2}{3}$     B)  $\frac{5\pi R^2}{8}$     C)  $\frac{\pi R^2}{6}$     D)  $\frac{\pi R^2}{4}$
10. To'g'ri burchakli uchburchakning katetlaridan biri 15 sm ga, ikkinchi katetning gipotenuzadagi proyeksiyasi esa 16 sm ga teng. Bu uchburchakka ichki chizilgan aylananing radiusini (sm) toping.  
A) 5    B) 3    C) 4    D) 6
11. To'g'ri to'rtburchakning diagonalini 17 sm, tomonlaridan biri esa 8 sm. To'g'ri to'rtburchakning yuzini (sm<sup>2</sup>) toping.  
A) 160    B) 120    C) 80    D) 140
12.  $f(x) = x^2 + 2x + 1$  funksiyaning hosilasini toping.  
A)  $2x^2 + 2$     B)  $x^2 + 2$     C)  $2x - 2$   
D)  $2x + 2$
13.  $a > b > 0$  va  $c = \frac{a+b}{b}$  berilgan. Quyidagi tasdiqlardan qaysi biri to'g'ri?  
A)  $a < c < 2$     B)  $c = 2$     C)  $c = 1$     D)  $c > 2$
14. 3; 5; 9; 17; 33; 65; ... ketma-ketlikning dastlabki  $n$  ta hadining yig'indisini toping.  
A)  $2^n + n - 2$     B)  $(2 + 2^{n-1}) \cdot n$   
C)  $2^{n+1} + n - 2$     D)  $2n$
15.  $h(x) = |x|$ ,  $g(x) = \frac{2x+3}{3x-1}$ ,  $f(x) = \sqrt{x+1}$  bo'lsa, quyidagilardan qaysi biri to'g'ri?  
A)  $f(g(x)) = \frac{\sqrt{5x+4}}{\sqrt{3x-1}}$   
B)  $f(h(x)) = \sqrt{|x|+1}$   
C)  $h(f(x)) = \sqrt{|x+1|}$   
D)  $g(h(x)) = \frac{2|x|+3}{3|x|+1}$
16. Sferaga balandligi asosining diametriga teng bo'lgan konus ichki chizilgan. Agar sfera sirtining yuzi 125 ga teng bo'lsa, konus asosining yuzini toping.  
A) 10    B) 20    C)  $5\pi$     D) 15

17.  $|(x+3)(x+1)+1| \leq 0$  tengsizlikni yeching.  
A) 2 B)  $\emptyset$  C)  $-2$  D) 0
18.  $ABC$  uchburchakda  $a=3$ ;  $b=5$ ;  $\angle C=60^\circ$  bo'lsa,  $c$  ni toping.  
A)  $\sqrt{19}$  B)  $\sqrt{17}$  C)  $\sqrt{23}$  D)  $\sqrt{21}$
19. Koordinata boshidan o'tuvchi tekislik tenglamasini toping.  
A)  $x+3y+9z-1=0$  B)  $2x-2y+5z=0$   
C)  $x+y+1=0$  D)  $x+y-1=0$
20. Ishorasi almashinuvchi geometrik progressiyaning birinchi hadi  $-2$  ga, uchinchi hadi  $-8$  ga teng bo'lsa, shu progressiyaning dastlabki 6 ta hadi yig'indisini toping.  
A) 36 B)  $-42$  C) 42 D)  $-36$
21. Agar  $|\vec{AB}| = |\vec{AC}| = |\vec{AB} + \vec{AC}| = 4$  bo'lsa,  $|\vec{CB}|$  ning qiymatini toping.  
A)  $4\sqrt{3}$  B)  $4\sqrt{2}$  C)  $2\sqrt{3}$  D) 4,5
22. 
$$\begin{cases} 2^{\frac{x-y}{2}} + 2^{\frac{y-x}{2}} = 2,5 \\ \lg(2x-y) + 1 = \lg(y+2x) + \lg 6 \end{cases}$$
 tenglamalar sistemasini yeching.  
A)  $(1; -1)$  va  $(1; 0)$   
B)  $\left(\frac{2}{3}; -\frac{2}{3}\right)$  va  $\left(\frac{4}{3}; -\frac{4}{3}\right)$   
C)  $\left(\frac{1}{2}; -\frac{1}{2}\right)$  va  $\left(\frac{1}{4}; -\frac{1}{4}\right)$   
D)  $(4; 2)$
23.  $n \in N$  va  $\frac{1}{2} + \frac{1}{3} + \frac{1}{7} + \frac{1}{n}$  yig'indi butun son bo'lsa, quyidagilardan qaysi biri noto'g'ri?  
A)  $n$  soni 2 ga bo'linadi B)  $n > 84$   
C)  $n$  soni 6 ga bo'linadi  
D)  $n$  soni 3 ga bo'linadi
24.  $\sqrt[3]{x} + 6 = \sqrt[3]{x^2}$  tenglamaning katta va kichik ildizlari ayirmasini toping.  
A) 50 B) 25 C) 35 D) 45
25.  $\int_{\frac{\pi}{4}}^{\pi} 8 \cos^2 x \cdot \sin 2x dx$  integralni hisoblang.  
A) 1 B) 3 C) 2 D)  $-3$
26.  $M$  va  $N$  nuqtalar  $ABC$  uchburchakning  $AB$  va  $AC$  tomonlari o'rtasida yotadi.  $ANM$  uchburchakning perimetri 21 sm bo'lsa,  $ABC$  uchburchakning perimetrini (sm) toping.  
A) 63 B) 42 C) 50 D) 84
27. Markazlari bir nuqtada bo'lgan ikki doiradan kattasining radiusi kichigining radiusidan 20% ga katta. Ularning orasidagi halqaning yuzi katta doira yuzidan necha marta kam?  
A)  $2\frac{4}{7}$  B)  $3\frac{3}{11}$  C)  $3\frac{4}{9}$  D)  $2\frac{3}{7}$
28. Agar  $xy + yz + zx = 16$  bo'lsa,  $(x+y+z)^2$  ifoda teng bo'lishi mumkin bo'lgan eng kichik qiymatni toping.  
A) 64 B) 32 C) 16 D) 48
29. Uchburchakli piramidaning asosi tomonlari 4; 4 va 2 ga teng bo'lgan uchburchakdan iborat. Piramidaning barcha yon yoqlari asos tekisligi bilan  $60^\circ$  li burchak tashki etadi. Piramidaning hajmini toping.  
A) 3 B)  $2\sqrt{3}$  C)  $\sqrt{3}$  D) 6
30. Uchta butun son tashkil etgan arifmetik progressiyada birinchi hadi 1 ga teng. Agar ikkinchi hadga 3 qo'shilsa, uchinchi kvadratga ko'tarilsa, geometrik progressiya hosil bo'ladi. Uchinchi sonni toping.  
A) 7 B) 9 C) 6 D) 8
31. Dastur asosida boshqariladigan birinchi hisoblash mashinasini kim va qachon ixtiro qilgan?  
A) 1930 yil, V.Bush B) 1941 yil, K.Suze  
C) 1944 yil, G.Eyken D) 1907 yil, Li de Fores
32. Hisoblang va o'tkazishni bajaring:  
 $27_{10} + 111_2 \rightarrow x_2$   
A)  $100010_2$  B)  $100011_2$  C)  $100110_2$   
D)  $100111_2$
33. Qaysi javobda faqat arxivlangan fayllar kengaytmasi berilgan?  
A) .dll, .zip B) .xls, .rar C) .zip, .rar  
D) .exe, .com
34. MS Excel 2003 da A1 dan A10 gacha bo'lgan katakchalardagi qiymatlarni yig'indisini hisoblash formulasini aniqlang.  
A)  $CYMM(A1:A10)$  B)  $=summa(A1:A10)$   
C)  $A1+A10$  D)  $=CYMM(A1:A10)$

35. Biror Web-saytni ochish uchun quyidagilardan qaysi birini qo'llash mumkin?  
1) Web-brauzerning manzil satrida web-sayt nomi kiritiladi va Enter klavishi bosiladi. 2) Biror web-saytdan kerakli web-saytga o'tish belgisi tanlanadi. 3) MS Word dasturi matnida yozilgan kerakli web-sayt manzili tanlanadi.  
A) 1 B) 1, 2 C) 1, 3 D) 1, 2, 3

36. Paskal dasturi lavhasidagi S ning qiymati nimaga teng?  
begin S:=0; for I:=1 to 3 do S:=S+2\*i;  
writeln(S); end.  
A) 24 B) 48 C) 96 D) 12

### FIZIKA

1. Bikrligi 400 N/m bo'lgan prujinaga 400 N kuch ta'sir qilmoqda. Prujinaning potentsial energiyasini (J) toping.  
A) 1000 B) 200 C) 2000 D) 100

2. Buyum va uning tasviri orasidagi masofa  $l$  ga teng bo'lib, tasvir buyumdan  $n$  marta katta bo'lsa, linzaning fokus masofasini ( $F$ ) toping.  
A)  $\frac{n}{(n+1)^2 l}$  B)  $\frac{n+1}{n^2}$  C)  $\frac{\ln}{(n+1)^2}$   
D)  $\frac{l(n+1)}{n^2}$

3. Quyidagi yadro reaksiyasida qanday  $X$  zarra hosil bo'lgan?  
 ${}^{14}_7\text{N} + {}^4_2\text{He} = X + {}^{17}_8\text{O}$   
A) *proton* B) *geliy yadrosi*  
C) *vodorod yadrosi* D) *neytron*

4. Massasi va boshlang'ich temperaturasi bir xil bo'lgan vodorod va geliy gazlari 70 K ga qizdirildi. Vodorodni qizdirishda bajarilgan ish  $A_1$  va geliyni qizdirishda bajarilgan ish  $A_2$  lar qanday munosabatda bo'ladi? ( $P=\text{const}$ )  
A)  $A_1 = 2A_2$  B)  $A_1 = A_2$  C)  $A_2 = 4A_1$   
D)  $A_2 = 2A_1$

5. Agar tok kuchi 30 A bo'lganda tashqi zanjirdagi quvvat 180 W, tok kuchi 10 A bo'lganda esa 100 W bo'lsa, tok manbaining ichki qarshiligi ( $\Omega$ ) va EYuK (V) qancha?  
A) 0,2; 3 B) 0,4; 6 C) 5; 10 D) 0,2; 12

6. 5 kg massali yuk qiya tekislikdan 20 N kuch ta'sirida ko'tarildi. Qiya tekislikning uzunligi 10 m, balandligi 3 m. Qiya tekislikning foydali ish koeffitsienti (%) nimaga teng?  
A) 50 B) 75 C) 90 D) 60

7. Chaqmoq chaqqandan so'ng 6 s o'tgach momoqaldiraq gumburladi, yashin razradi kuzatuvchidan qanday masofada (km) bo'lgan?  
A) 45 B) 2 C) 256 D) 56

8. Manba ichki qarshiligi 0,5  $\Omega$  ga teng. Tashqi qarshilik 4  $\Omega$  dan 8  $\Omega$  ga o'zgartirilganda FIK (%) qanchaga ortadi?  
A) 5 B) 3 C) 11 D) 9

9. Sterjen qanday tezlik bilan harakatlansa, uning uzunligi 2 marta kamayadi?

A)  $v = \frac{\sqrt{5}}{2}c$

B)  $v = \frac{\sqrt{2}}{2}c$

C)  $v = \frac{1}{2}c$

D)  $v = \frac{\sqrt{3}}{2}c$

10. Ishlab chiqarilgan o'zgaruvchan elektr toki kuchlanishining ta'sir qiymati 220 V ga teng bo'lsa, uning maksimal qiymatini (V) toping.  
A) 300 B) 310 C) 320 D) 330

11. 20 g massali o'q 600 m/s tezlik bilan devorga kelib urildi. Agar devorning 4 sm gacha kirib borgan bo'lsa, devor qarshilik kuchi bajarilgan ishni (kJ) toping. O'qning oxirgi tezligi nolga teng.  
A) 36 B) 3,6 C) 72 D) 7,2

12. Aylana bo'ylab tekis harakat qilayotgan moddiy nuqtaning chiziqli tezligi 2 m/s va burchak tezligi 5 rad/s bo'lsa, markazga intilma tezlanishini ( $\text{m/s}^2$ ) toping.  
A) 10 B) 5 C) 15 D) 20

13. Yukni qiyaligi 30° bo'lgan qiya tekislik bo'ylab 100 m masofaga tortib chiqarishda 20 kJ ish bajarilgan bo'lsa, qiya tekislikni FIKi (%) qanday?  
A) 75 B) 25 C) 55 D) 50

14. Bikrligi 250 N/m bo'lgan prujinaga bog'lab qo'yilganda 16 s ichida 20 marta tebradigan yukning massasini (kg) toping.  $\pi^2=10$   
A) 1,6 B) 16 C) 4 D) 0,4
15. Idishdagi gazning hajmi o'zgarmas temperaturada 5% ga kamayishi uchun gaz bosimini necha foizga orttirish kerak?  
A) 4,9 B) 7 C) 5,3 D) 10
16. Ko'z akkomodatsiyasi nima?  
A) uzoqdan ko'rarlik  
B) ko'rish burchagi  
C) ko'z gavharining fokus masofasini kuzatilayotgan buyumgacha bo'lgan masofaga moslash qobiliyati  
D) yaqindan ko'rarlik
17. 72 km/h tezlikda harakatlanayotgan poyezd dvigateli o'chirilsa, qancha masofa (m) yo'l o'tib to'xtaydi? Ishqalanish koeffitsienti  $\mu=0,02$ .  
A) 720 B) 500 C) 1000 D) 1440
18. Vakuimli diodning anodiga  $4 \cdot 10^{16}$  ta elektron etib borganida elektr maydoni 3,2 J ish bajargan bo'lsa anod kuchlanishini (V) toping.  
A) 800 B) 128 C) 250 D) 500
19. Induktivligi 0,4 H bo'lgan o'tkazgichning induktiv qarshiligi ( $\Omega$ ) tok chastotasi 50 Hz bo'lganda qanday?  
A) 20 B) 200 C) 126 D) 113
20. Induksiya vektorining moduli 0,8 T, yo'nalishi gorizontal bo'lgan bir jinsli magnit maydonida uzunligi 25 sm, massasi 16 g bo'lgan gorizontal sim muallaq turishi uchun simning ko'ndalang kesim yuzasi orqali har sekundda nechta elektron oqib o'tishi kerak?  $g=10 \text{ m/s}^2$ .  
A)  $1,2 \cdot 10^{17}$  B)  $5 \cdot 10^{18}$  C)  $2,5 \cdot 10^{18}$   
D)  $2,5 \cdot 10^{17}$
21. Radiostansiya to'lqin uzunligi 60 m bo'lgan radioto'lqin tarqatadi. Bunda tovush chastotasi 500 Hz ga teng. Bitta tovush to'lqiniga yuqori chastotali nechta elektromagnit to'lqin joylasha oladi?  
A)  $10^2$  B)  $10^4$  C)  $10^3$  D)  $10^5$
22. Kon elektrovozi poyezdni  $0,1 \text{ m/s}^2$  tezlanish bilan tortib bormoqda. Poyezdning massasi 60 t. Harakatga qarshilik kuchi 4120 N. Tortish kuchini (kN) toping.  
A) 11,12 B) 10,12 C) 11 D) 12
23. Normal atmosfera bosimi ( $P_0 = 101325 \text{ Pa}$ ) ostidagi 10 l hajmli gaz o'zgarmas temperaturada 6 l qancha siqildi. Gazning keyingi bosimini (Pa) toping.  
A) 168 875 B) 210 000 C) 182 714  
D) 100 000
24. Yuqoriga  $a$  tezlanish bilan ko'tarilayotgan havo sharidan  $t$  sekunddan so'ng bir buyum tushib ketdi. Bu buyum qancha vaqtda yerga tushadi?  
A)  $\frac{t}{g}(2a + \sqrt{a^2 - ga})$   
B)  $\frac{t}{g}(a + \sqrt{a^2 + ga})$   
C)  $\frac{t}{g}(2a + \sqrt{a^2 + ga})$   
D)  $\frac{t}{g}(a - \sqrt{a^2 + ga})$
25. Izotermik kengayganda ideal gaz 20 J ish bajaradi. Gazga qancha issiqlik miqdori (J) berilgan?  
A) 20 B) issiqlik miqdori berilmaydi C) 50  
D) 30
26. Boshqa jismlardan uzoqda joylashgan mis sharcha to'lqin uzunligi 180 nm bo'lgan elektromagnit to'lqin bilan nurlantirilganda qanday maksimal potensialgacha (V) zaryadlanadi? Elektronning zaryadi  $-1,6 \cdot 10^{-15} \text{ Kl}$ , mis uchun elektronlarning chiqish ishi 4,4 eV.  
A) 6 B) 4,7 C) 2,8 D) 2,5
27. Elektr sig'implari  $C_1 = C_2 = 2 \mu\text{F}$  bo'lgan va o'zaro parallel ulangan kondensatorlar  $C_3 = 4 \mu\text{F}$  sig'imli kondensatorga ketma-ket ulanib, kondensatorlar bateriyasi hosil qilindi va zanjir 4 V kuchlanishga ega bo'lgan o'zgarmas tok manbaiga ulandi. Uchinchi kondensator olgan elektr maydon energiyasini ( $\mu\text{J}$ ) toping.  
A) 12 B) 8 C) 16 D) 24

28. Agar paravoz quvvati 4000kW bo'lib 15 m/s tezlik bilan yursa u vagonlarni qanday kuch (kN) bilan tortadi?  
A) 60 B) 267 C) 60000 D) 27
29. EYuK si 12 V bo'lgan batareyaning qisqa tutashuv toki 5 A bo'lsa, batareya zanjiridagi eng katta quvvatni (W) aniqlang.  
A) 15 B) 30 C) 50 D) 40
30. Molekulalari konsentratsiyasi  $2 \cdot 10^{24} \text{ m}^{-3}$  ga teng bo'lgan idishdagi gazning bosimi  $3 \cdot 10^4 \text{ N/m}^2$  ga teng. Bitta molekulaning o'rtacha kinetik energiyasini (J) toping.  
A)  $2,75 \cdot 10^{-20}$  B)  $3 \cdot 10^{-21}$  C)  $2,5 \cdot 10^{-20}$   
D)  $2,25 \cdot 10^{-20}$
31. Muz parchasi suv sirtidan 2 sm chiqqan holda suzib yuribdi. Muz parchasi asosining yuzi  $200 \text{ cm}^2$  bo'lsa, uning og'irligi (N) qancha? Muzning zichligi  $0,9 \text{ g/cm}^3$ .  
A) 35 B) 90 C) 3,6 D) 45
32. 100 V va 50 V kuchlanishgacha zaryadlangan  $2 \mu\text{F}$  va  $0,5 \mu\text{F}$  sig'imli kondensatorlarni bir xil ishorali qoplamalari bilan o'zaro ulanganda issiqlikka aylangan elektr energiyasi miqdorini (J) aniqlang.  
A)  $25 \cdot 10^{-4}$  B)  $0,5 \cdot 10^{-4}$  C)  $5 \cdot 10^{-4}$   
D)  $2,5 \cdot 10^{-4}$
33. Ko'ndalang kesim yuzasi  $16 \text{ mm}^2$ , tok tashuvchi elektronlarining konsentratsiyasi  $2 \cdot 10^{22} \text{ cm}^{-3}$  va tartibli harakat tezligi  $0,01 \text{ mm/s}$  ga teng bo'lgan o'tkazgichning ko'ndalang kesimi orqali 5 minutda o'tgan elektronlar sonini toping.  
A)  $2,4 \cdot 10^{20}$  B)  $3,2 \cdot 10^{20}$  C)  $2 \cdot 10^{19}$   
D)  $9,6 \cdot 10^{20}$
34. Kanalning kesimi asoslari 2 va 2,5 m balandligi esa 1 m bo'lgan trapetsiya shaklida suvning oqish tezligi  $0,4 \text{ m/s}$  bo'lsa kanaldagi suv sarfi ( $\text{m}^3/\text{s}$ ) toping.  
A) 45 B) 0,9 C) 0,7 D) 15
35. Yerdan Oygacha bo'lgan masofa 384 ming km bo'lsa, Oydan yorug'lik nuri qancha vaqtda (s) yetib keladi?  
A) 1,5 B) 1,2 C) 1,4 D) 1,3

36. Bir xil massali va bir xil temperaturadagi karbonat anhidrid va metan gazlarining zichliklari ham teng bo'lishi uchun bosimlari qanday nisbatda bo'lishi kerak?

A) 1:2 B) 1:5 C) 1:4 D) 1:3

### INGLIZ TILI

- Choose the answer which correctly complete the sentence.  
He deserved to be given an ... for bravery.  
A) ticket B) mark C) direction D) award
- Choose the answer which correctly completes the sentence.  
I selected a DVD ... random and put it in the DVD player.  
A) to B) at C) for D) on
- Choose the answer which correctly complete the sentence.  
The employees think ... of their new manager.  
A) highly B) the highest C) higher  
D) highest
- Choose the answer which correctly completes the sentence.  
I need proper shoes to go hiking in the mountains, ... the ground is rough and hard.  
A) as B) when C) although D) despite
- Choose the answer which correctly completes the sentence.  
Until last week I never ... motorbike before.  
A) had ridden B) rode C) was riding  
D) rides
- Choose the answer which correctly complete the sentence.  
I'm accustomed to ... with the window open.  
A) sleeping B) slept C) to sleep D) sleep
- Choose the answer which correctly completes the sentence.  
She'll have the film ... in the city.  
A) developing B) developed C) to develop  
D) develop
- Choose the answer which correctly complete the sentence.  
I wish I ... taller, because I am not very tall.  
A) would be B) were C) would have been  
D) will be

9. Choose the answer which correctly completes the sentence.  
He's talked about it many times. Any ... discussion is useless.  
A) *far* B) *farthest* C) *further* D) *furthest*
10. Choose the answer which correctly completes the sentence.  
I would go out more often if I ... to work so much.  
A) *hadn't* B) *didn't have* C) *wouldn't have*  
D) *don't have*
11. Choose the answer which correctly completes the sentence.  
They asked me, "Where has she gone?"  
I wonder where ... .  
A) *she has gone* B) *has she gone*  
C) *had she gone* D) *she had gone*
12. Choose the answer which correctly completes the sentence.  
Dad, I have nothing to wear. The jeans you bought me ... fit me.  
A) *doesn't* B) *aren't* C) *isn't* D) *don't*
13. Choose the answer which correctly completes the sentence.  
Isabel travels by train because she is terrified ... flying.  
A) *for* B) *from* C) *by* D) *of*
14. Choose the answer which correctly completes the sentence.  
You will see nothing ... you use a microscope. It is the most interesting insect.  
A) *in case* B) *unless* C) *if* D) *providing*
15. Choose the answer which correctly completes the sentence.  
They closed down the factory because it ... money for years.  
A) *was losing* B) *had been losing*  
C) *has lost* D) *lost*
16. Choose the answer which correctly completes the sentence.  
It was a chance in ... million that my cousin and I should run into each other in London.  
A) *an* B) *a* C) *-* D) *the*
17. Choose the answer which correctly completes the sentence.  
When did you ... the books back?  
A) *had to give* B) *can give* C) *have to give*  
D) *must give*
18. Choose the answer which correctly completes the sentence.  
Jack called me ... day; he said he was coming home the following week.  
A) *the other* B) *any* C) *others*  
D) *another*
19. Choose the answer which correctly completes the sentence.  
The children shouldn't play outside in cold weather, and ...  
A) *she should neither* B) *neither should she*  
C) *she should either* D) *neither she should*
20. Choose the answer which correctly completes the sentence.  
I haven't heard or read about the accident ... it was on the front page of every newspaper.  
A) *despite* B) *because of* C) *as*  
D) *although*
21. Choose the answer which correctly completes the sentence.  
It was lovely and ... in the swimming pool so he dived straight in.  
A) *warmth* B) *warmed* C) *warm*  
D) *warmly*
22. Choose the answer which correctly completes the sentence.  
The cause of car accident ... at present.  
A) *are being investigated*  
B) *is being investigated* C) *is investigated*  
D) *have been investigated*



23. Choose the answer which correctly complete the sentence.

As usual, he woke up late and had ... big breakfast.

- A) *an* B) *-* C) *the* D) *a*

Read the text. Then choose the correct answer to question 24-26.

Babies whose mothers smoke during pregnancy could be at higher risk of growing up to be criminals, new research suggests. This is the first study to examine the relationship between mothers who smoke and their children's adult behaviour. The findings were based on data for 4,169 males born in Copenhagen between September 1959 and December 1961. Their arrest records at age 34 were studied. It was discovered that the number of cigarettes their mothers had smoked during the last third of their pregnancy affected the men's arrests for both violent and non-violent crimes. This was true even when other possible causes, such as use of alcohol, divorce, income, and home environment had been taken into consideration.

24. The main idea of the passage is that ...

- A) *most criminals are heavy smokers*  
 B) *pregnant women who smoke should be regarded as criminals and be punished.*  
 C) *smoking during pregnancy increases the possibility of the child committing crimes in adult life.*  
 D) *4,169 males were born in Copenhagen between the years 1959 and 1961*

25. The research mentioned in the passage ...

- A) *concentrated on the effects of smoking before and after pregnancy.*  
 B) *was a repetition of several previous studies, which were inconclusive.*  
 C) *mainly dealt with the adult behaviour of the children of smoking mothers.*  
 D) *studied only the last third of a mother's pregnancy.*

26. From the passage, we can say that the researchers were careful because ...

- A) *they chose subjects who had only committed minor crimes.*  
 B) *other possible causes of crime were also considered.*  
 C) *they studied so many men from so many different countries.*  
 D) *all men born between September 1959 and December 1961 were studied.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Many famous people did not enjoy (27)... success in their early lives. Walt Disney, who was the creator of Mickey Mouse and the founder of his own movie production company, once was fired by a newspaper editor because he had (28)... good ideas.

- 27.

- A) *immediate* B) *imitate* C) *immediacy*  
 D) *immediately*

- 28.

- A) *no* B) *any* C) *nothing* D) *none*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

A forest is a thickly wooded area. Forests have a wide (29)... of plants and animals living among the trees. Forests that like cooler climates (30)... largely in the northern hemisphere, far north of the equator. Forest floors are shady places and it can be hard (31)... plants to grow.

- 29.

- A) *variety* B) *various* C) *variable*  
 D) *vary*

- 30.

- A) *were found* B) *found* C) *are found*  
 D) *find*

31. A) *by* B) *from* C) *for* D) *of*

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *The danger of hunting for the Brazilian population.*
- B) *Hydro-electric dam projects on the Yangtze river.*
- C) *The danger of two breeds of dolphins disappearing.*
- D) *The breeding of small river dolphins.*

33. What does the number 10 in the text refer to?
- A) *Groups of biologist who are trying to repopulate dolphins.*
- B) *Governmental organizations which fight the pollution of rivers.*
- C) *The percentage of living Yangtze river dolphins.*
- D) *The percentage of Amazonian dolphins which die out every year.*

Read the text. Then choose the correct answer to question 34-36.

In 1971 the Great Persian Empire celebrated the 1500 th anniversary of its founding.

Its founder was Cyrus the Great, who proclaimed himself the King of the Kings. His son Cambyses succeeded his throne, conquering Egypt and expanding the empire.

Darius I followed Cambyses and was probably the most famous of this long line of kings. Under his rule, the empire stretched as far as India.

Governors were placed in charge of the provinces. Extensive systems of roads and waterways improved communication throughout the kingdom. He was one of a few ancient rulers who permitted his subjects to worship as they wished. The magnificent city of Persepolis, founded under his direction in 518 B.C. was a ceremonial center.

34. Who is considered the creator of the Persian Empire?
- A) *Combyses* B) *Cyrus* C) *Darius I*  
D) *Persepolis*
35. Who was the predecessor of Cambyses?
- A) *Persepolis* B) *Darius I* C) *Cyrus*  
D) *Egypt*
36. Who were responsible for the provinces?
- A) *the governors* B) *the King*  
C) *the Egyptians* D) *the subjects*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000057**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1.  $ax = by = cz = 6$  va  $x + y + z = 36$  ekani ma'lum bo'lsa,  $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$  ni toping.  
A) 9 B) 5 C) 12 D) 6
2. Dastlabki o'nta hadining yig'indisi 55 ga teng bo'lgan arifmetik progressiyaning o'ninchi hadi 19 ga teng bo'lsa, uning ayirmasini toping.  
A) 3 B) -2 C) -3 D) 2
3. Teng yonli uchburchakning uchidagi tashqi burchagi ichki burchagi bilan 7:5 nisbatda bo'lsa, asosidagi tashqi burchagini toping.  
A)  $120^\circ$  B)  $127^\circ$  C)  $120,5^\circ$  D)  $127,5^\circ$
4. To'g'ri burchakli  $ABC$  uchburchakda  $\angle A = 30^\circ$  bo'lib,  $AB=6$  sm li gipotenuzasini diametri qilib, doira chizildi. Hosil bo'lgan eng kichik segmentning yuzini toping.  
A)  $36\pi$  B)  $\frac{6\pi - 9\sqrt{3}}{4}$  C)  $\frac{12\pi - 9\sqrt{3}}{4}$   
D)  $18\pi$
5. Asosining tomonlari 12; 9 va 15 hamda asosidagi barcha ikki yoqli burchaklari  $60^\circ$  dan iborat bo'lgan uchburchakli piramidaning hajmini toping.  
A)  $54\sqrt{3}$  B)  $162\sqrt{3}$  C)  $108\sqrt{3}$  D)  $27\sqrt{3}$
6.  $ABC$  uchburchakda  $AB = 3AC$ . Uchburchakning  $C$  va  $B$  uchlaridan o'tkazilgan balandliklarining nisbati qanday?  
A) 1:3 B) 1:4 C) 3:1 D) 2:3
7.  $\frac{x^2 - (m-4)x - 4m}{x^2 + (1-m)x - m}$  ni hisoblang.  
A)  $\frac{x-4}{x-2}$  B)  $\frac{x-4}{x-1}$  C)  $\frac{x+4}{x+1}$  D)  $\frac{x-1}{x+2}$
8.  $\left( \sqrt{m(1-m)} + \frac{\sqrt{m^3}}{\sqrt{1-m}} : \left( \frac{1}{1+\sqrt{m}} + \frac{\sqrt{m}}{1-m} \right) \right)$ :  
 $\sqrt{m(1-m)}$  ifodani soddalashtiring.  
( $m \in (0; 1)$ )  
A)  $\frac{1}{m}$  B)  $1-m$  C)  $1+m$  D) 1
9.  $y = \sqrt{\sin^3 2x}$  ning hosilasini hisoblang.  
A)  $-3\cos 2x \sqrt{\sin 2x}$  B)  $\frac{3}{2} \sqrt{\sin 2x}$   
C)  $3\cos 2x \sqrt{\sin 2x}$  D)  $3\sqrt{\sin 2x}$
10.  $y = \ln ||x| + 1|$  funksiyaning aniqlanish sohasini toping.  
A)  $(-\infty; \infty)$   
B)  $(-\infty; 0)$   
C)  $(1; \infty)$   
D)  $(0; \infty)$
11.  $4^{tg^2 x} + 2^{\frac{1}{\cos^2 x}} - 80 = 0$  tenglamani yeching.  
A)  $\frac{\pi}{4} + \pi k, k \in Z$   
B)  $\pm \frac{\pi}{3} + \pi k, k \in Z$   
C)  $\pi(k+1), k \in Z$   
D)  $\pi k, k \in Z$
12.  $y = 1994x + 2013$  funksiya grafigi qaysi choraklardan o'tadi?  
A) I, III, IV B) II, III, IV C) I, II, III  
D) I, II, IV
13.  $\sqrt{5 - \sqrt{2x-7}} = 2$  tenglamaning ildizlari quyidagi oraliqlardan qaysi biriga tegishli?  
A) [4; 6) B) (-1; 1) C) [1; 3) D) [3; 4)
14. Silindrga muntazam uchburchakli prizma ichki chizilgan, prizмага esa silindr ichki chizilgan bo'lsa, katta silindr hajmi kichik silindr hajmidan necha marta katta bo'ladi?  
A) 2 B) 6 C) 3 D) 4
15.  $y = \sqrt{25 - x^2}$  funksiyaning grafigi bo'lgan egri chiziq va  $y = 0$  to'g'ri chiziq bilan chegaralangan shakl yuzini toping.  
A)  $5\pi$  B)  $12,5\pi$  C) aniqlab bo'lmaydi  
D)  $25\pi$
16.  $(x-1)^2(x^2-2x) = 12$  tenglamaning haqiqiy ildizlari yig'indisini toping.  
A) 4 B) 2 C) 0 D) 3
17. Agar  $\frac{3^x + 9^x + 18^x}{2^x + 6^x + 12^x} = \frac{24}{81}$  bo'lsa,  $x$  ni toping.  
A) -5 B) -4 C) -2 D) -3
18. Arifmetik progressiyaning dastlabki to'rtta hadi yig'indisi 124 ga, oxirgi to'rttasiniki 156 ga teng. Progressiyaning hadlari yig'indisi 490 ga teng. Progressiyaning nechta hadi bor?  
A) 11 B) 12 C) 10 D) 14

19.  $ABC$  uchburchak berilgan.  $AB$  to'g'ri chiziqqa parallel tekislik bu uchburchakning  $AC$  tomonini  $A_1$  nuqtada,  $BC$  tomonini  $B_1$  nuqtada kesib o'tadi.  $AB=15$  sm,  $AA_1 : AC = 2 : 3$  bo'lsa,  $A_1B_1$  kesma uzunligini (sm) toping.  
A) 2 B) 3 C) 5 D) 4
20. Agar arifmetik progressiyada  $s_{2n} = 2013$ ,  $S_{3n} = 2001$  bo'lsa,  $S_n$  ni toping.  
A) 1346 B) 1344 C) 1350 D) 1354
21. Balandligi asosining diametriga teng silindrning yon sirti  $16\pi$  ga teng. Silindr asosining diametrini toping.  
A) 8 B) 4 C) 2 D) 1
22.  $\sqrt{x^2 + 2x + 1} - |x - 4| = 2$  tenglamaning  $[1; 3]$  kesmadagi ildizini toping.  
A) 2,5 B) bu oraliqda yechimi yo'q C) 1,5 D) 2,(3)
23. 
$$\begin{cases} 2x - 1 > x, \\ x^2 - 7x + 6 > 0, \\ 2^x < 128 \end{cases}$$
 tengsizliklar sistemasini yeching.  
A)  $(7; \infty)$   
B)  $(-\infty; 6)$   
C)  $(-\infty; 6) \cup (7; \infty)$   
D)  $(6; 7)$
24. Uchlari  $A(-2; 3)$ ,  $B(-1; -2)$  va  $C(1; 1)$  nuqtalarda bo'lgan uchburchakning A va C burchaklarini toping.  
A)  $45^\circ; 90^\circ$  B)  $45^\circ; 45^\circ$  C)  $30^\circ; 90^\circ$   
D)  $90^\circ; 45^\circ$
25.  $\int_0^{\frac{\pi}{4}} \cos 2x dx$  ni hisoblang.  
A)  $\frac{\sqrt{2}}{2}$  B)  $\sqrt{2}$  C)  $-\frac{1}{\sqrt{2}}$  D)  $\frac{1}{2}$
26.  $y = -3x^2 + 2x + |x + 2|$  funksiyaning eng katta qiymatini toping.  
A)  $2\frac{4}{5}$  B)  $2\frac{3}{4}$  C) 10 D)  $3\frac{11}{12}$
27.  $31 \cdot 52 - 93 \cdot 4 + 57 \cdot 25 - 19 \cdot 35 + 2 \cdot (-10)^3$   
A) 4000 B) 1000 C) -1000 D) 0
28. Teng yonli trapetsiyaning diagonali 10 ga teng va u asos bilan  $60^\circ$  li burchak tashkil etadi. Trapetsiyaning o'rta chizig'ini toping.  
A) 5 B) 4 C) 6 D)  $\frac{5\sqrt{3}}{2}$
29. Radiusi 1 ga teng bo'lgan aylana uchta yoyga bo'lingan. Ularga mos markaziy burchaklari 1, 2 va 3 sonlariga proporsional bo'lsa, yoylardan eng kattasining uzunligini toping.  
A)  $\pi$  B)  $\frac{2\pi}{3}$  C)  $\frac{\pi}{3}$  D)  $\frac{3\pi}{2}$
30.  $|(x + 3)(x + 1) + 1| \leq 0$  tengsizlikni yeching.  
A) -2 B) 2 C) 0 D)  $\emptyset$
31. Kodlashning Morze usuli qanday usulga misol bo'ladi?  
A) Notekis kodlash usulu  
B) Tekis kodlash usuli  
C) Tartib raqamlari yordamida kodlash usuli  
D) Alifboni surish usuli
32. Protessorlardan ma'lumotlarni baytlarda olib, qurilmalarga bitlarda uzatadigan port turini aniqlang.  
A) parallel B) ketma-ket C) slot  
D) shina
33. Windows yo'l boshlovchisini ishga tushirish uchun Пуск menyusidagi qaysi bo'lim tanlanadi?  
A) Программы B) Документы C) Найти  
D) Настройка
34. MS Excelning A5:C12 katakchalar blokida nechta katakcha bor?  
A) 22 ta B) 18 ta C) 21 ta D) 24 ta
35. Elektron pochta manziliga oid mulohazalardan xatosini aniqlang.  
A) E-mail manzilida @ belgisi ishtirok etmaydi  
B) E-mail manzilida probel (bo'shliq) belgisi ishtirok etmaydi  
C) E-mail manzilida raqamlar ishtirok etadi  
D) E-mail manzilida lotin harflari ishtirok etadi

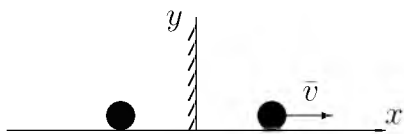
36. Random ( $x$ ) funksiyasining vazifasini aniqlang.
- A) *Parametrli takrorlash funksiyasi*  
 B)  *$[0, x]$  oraliqdagi tasodifiy sonni aniqlash funksiyasi*  
 C)  *$[0, 1)$  oraliqdagi tasodifiy sonni aniqlash funksiyasi*  
 D) *Tasodifiy harflar generatori*

### FIZIKA

1. Massasi va boshlang'ich temperaturasi bir xil bo'lgan vodorod va geliy gazlari 70 K ga qizdirildi. Vodorodni qizdirishda bajarilgan ish  $A_1$  va geliyni qizdirishda bajarilgan ish  $A_2$  lar qanday munosabatda bo'ladi? ( $P = \text{const}$ )  
 A)  $A_2 = 2A_1$     B)  $A_2 = 4A_1$     C)  $A_1 = A_2$   
 D)  $A_1 = 2A_2$
2. Agar tok kuchi 30 A bo'lganda tashqi zanjirdagi quvvat 180 W, tok kuchi 10 A bo'lganda esa 100 W bo'lsa, tok manbaining ichki qarshiligi ( $\Omega$ ) va EYuK (V) qancha?  
 A) 0,2; 3    B) 0,2; 12    C) 5; 10    D) 0,4; 6
3. Sanoq jismi ,unga bog'langan koordinatalar sistemasi va vaqt o'lchash asbobi ... deyiladi.  
 A) *fazo*    B) *koorinata boshi*  
 C) *sanoq sistemasi*    D) *sanoq jismi*
4. 220 V kuchlanishli elektr tarmoqqa ulangan elektr lampochkadan 1 A tok o'tmoqda. Shu lampochkani 110 V kuchlanishli elektr tarmoqqa ulansa, undan qancha tok kuchi (A) o'tadi?  
 A) 1    B) 0,5    C) 2    D) 3
5. Yorug'lik to'liqini uzunligi qanday elektromagnit to'liqlardan (m) iborat?  
 A)  $5 \cdot 10^{-8}$ - $7 \cdot 10^{-8}$   
 B)  $6 \cdot 10^{-6}$ - $9 \cdot 10^{-6}$   
 C)  $3 \cdot 10^{-5}$ - $8 \cdot 10^{-5}$   
 D)  $4 \cdot 10^{-7}$ - $7,6 \cdot 10^{-7}$
6. Ko'ndlang kesimining yuzi  $1,72 \text{ mm}^2$  bo'lgan mis simdan 10 sm diametri halqa kavsharlab yasalgan. Halqa bir jinsli magnit maydonga, magnit induksiya chiziqlariga perpendikular ravishda joylashgan. Agar magnit maydon induksiyasi 1 T/s tezlik bilan bir tekis o'zgara boshlasa, halqada qanday tok kuchi (A) paydo bo'ladi?  $\rho_m = 1,72 \cdot 10^{-8} \Omega \cdot \text{m}$   
 A) 5    B) 2,5    C) 10    D) 7,5

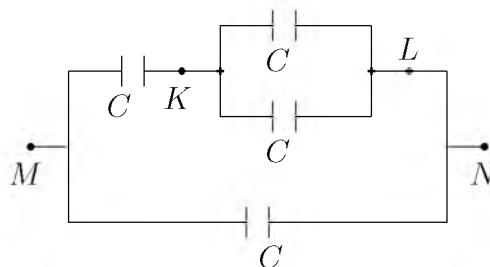
7. Elektron  $E_1$  energiyali satqdan  $E_2$  energiyali sathga o'tgandan keyin nurlangan kvant energiyasining to'liq uzunligi  $\lambda$  topilsin.  
 A)  $\frac{h\nu}{E_1 - E_2}$     B)  $\frac{hc}{E_2 - E_1}$     C)  $\frac{h}{E_1 - E_2}$   
 D)  $\frac{E_1 - E_2}{hc}$
8. Gorizontga nisbatan  $53^\circ$  burchak ostida  $v_0$  tezlik bilan ottilgan jismning 20 m balandlikdan erkin tushgan jism bilan uchish vaqtlari teng bo'lsa,  $v_0$  ni (m/s) toping.  $\cos 53^\circ = 0,6$   
 A) 19,2    B) 13,4    C) 16,3    D) 12,5
9. Yorug'lik suvda qanday tezlik (m/s) bilan tarqaladi?  $n_{\text{suv}} = 1,33$   
 A)  $2,20 \cdot 10^8$     B) 00000    C)  $3 \cdot 10^8$   
 D)  $2,25 \cdot 10^8$
10. Qarshiliklari  $R_1 = 20 \Omega$  va  $R_2 = 10 \Omega$  bo'lgan o'tkazgichlar o'zaro parallel ulangan holda elektr tarmog'iga ulandi. Tarmoqdagi tok kuchi 300 mA ga teng bo'lsa, birinchi o'tkazgichda 1 minut ichida qancha issiqlik miqdori (J) ajralib chiqadi?  
 A) 36    B) 24    C) 12    D) 15
11. Konturdagi induktivlikni 2 marta kamaytirsak, sig'imi esa 8 marta orttirsak, unda erkin tebranish chastotasi qanday o'zgaradi?  
 A) 2 marta kamayadi    B) 2 marta ortadi  
 C) 4 marta ortadi    D) 4 marta kamayadi
12. Harorati  $-73^\circ\text{C}$  bo'lgan gaz molekullari ilgarilanma harakat kinetik energiyasini 3 marta ortirish uchun gazni qanday haroratgacha ( $^\circ\text{C}$ ) qizdirish kerak?  
 A) 600    B) 327    C) 219    D) 200
13. Gorizont ravishda aylanayotgan disk ustida, disk o'qidan 1 m masofada 1 m/s chiziqli tezlik bilan aylanayotgan jism ishqalanish koeffitsiyenti qanday bo'lganda joyidan qo'zg'ala boshlaydi?  
 A) 0,01    B) 0,05    C) 0,2    D) 0,1
14. 3 m/s boshlang'ich tezlik va  $4 \text{ m/s}^2$  tezlanish bilan harakatlanayotgan jismning 4-sekunddagi ko'chishining modulini (m) toping.  
 A) 14    B) 16    C) 15    D) 17

15. Elektr yoyining qarshiligi  $0,2 \text{ Om}$ , ko'mir elektrodlar orasidagi potentsiallar farqi  $50 \text{ V}$ . Yoydagi tok kuchi ( $A$ ) va bir minutda ajraladigan issiqlik miqdorini ( $\text{kJ}$ ) toping.  
A)  $250; 750$  B)  $0,25; 0,75$  C)  $2,5; 7,5$   
D)  $25; 75$
16. Suyuqlikning idish devoriga bosim kuchi  $F$  idish tubiga bo'lgan bosim kuchiga teng bo'lishi uchun  $R$  radiusli silindrik idishga qanday balandlik  $H$  gacha suv qiyish kerak?  
A)  $R = 2H$  B)  $R = H$  C)  $R = 4H$   
D)  $R = H/2$
17. Energiyasi  $6 \cdot 10^{-19} \text{ J}$  ga teng bo'lgan fotonning impulsi ( $\text{kg} \cdot \text{m/s}$ ) qancha?  $c = 3 \cdot 10^8 \text{ m/s}$   
A)  $0,2 \cdot 10^{-27}$  B)  $0,2 \cdot 10^{-28}$  C)  $2 \cdot 10^{-27}$   
D)  $2 \cdot 10^{-28}$
18. Hajmi  $12 \text{ l}$  bo'lgan idishda  $25 \text{ g}$  massali gaz  $27^\circ\text{C}$  temperaturada va  $185 \text{ kPa}$  bosim ostida turibdi. Gazning molar massasini ( $\text{kg/mol}$ ) aniqlang.  
A)  $0,032$  B)  $0,020$  C)  $0,028$  D)  $0,040$
19. Alfa zarra ( $m = 6,65 \cdot 10^{-27} \text{ kg}$ ) elektr maydonida  $6,4 \cdot 10^{11} \text{ m/s}^2$  tezlanish bilan harakatlanishi uchun, elektr maydon kuchlanganligi qanday bo'lishi ( $\text{kV/m}$ ) kerak?  
A)  $7,87$  B)  $26,6$  C)  $13,3$  D)  $4,26$
20. Sharcha yassi ko'zgu bilan bog'langan sistemada  $\vec{v}$  tezlik bilan kuzgudan uzoqlashmoqda. Sharcha tasvirini tezligi nimaga teng?



- A)  $2v$  B)  $-2v$  C)  $-v$  D)  $v$
21. Bikrligi  $250 \text{ N/m}$  bo'lgan prujinaga bog'lab qo'yilganda  $16 \text{ s}$  ichida  $20$  marta tebradigan yukning massasini ( $\text{kg}$ ) toping.  $\pi^2 = 10$   
A)  $16$  B)  $4$  C)  $0,4$  D)  $1,6$
22. Gaz razryadi jarayonida qanday zarrachalar ishtirok etadi?  
A) faqat elektronlar  
B) elektronlar va kovaklar  
C) elektronlar, musbat va manfiy ionlar  
D) faqat ionlar

23. Molekulari konsentratsiyasi  $2 \cdot 10^{24} \text{ m}^{-3}$  ga teng bo'lgan idishdagi gazning bosimi  $3 \cdot 10^4 \text{ N/m}^2$  ga teng. Bitta molekulaning o'rtacha kinetik energiyasini ( $\text{J}$ ) toping.  
A)  $2,25 \cdot 10^{-20}$  B)  $2,75 \cdot 10^{-20}$  C)  $2,5 \cdot 10^{-20}$   
D)  $3 \cdot 10^{-21}$
24. Yuqoriga tik otilgan  $1 \text{ kg}$  massali jismning  $10 \text{ m}$  balandlikdagi kinetik energiyasi  $100 \text{ J}$  bo'lsa, u qanday boshlang'ich tezlik bilan ( $\text{m/s}$ ) otiladi?  
A)  $30$  B)  $50$  C)  $25$  D)  $20$
25. Rasmdagi har bir kondensatorning sig'imi  $C$  ga teng.  $M$  va  $N$  nuqtalar orasidagi potentsiallar farqi  $120 \text{ V}$  bo'lsa,  $K$  va  $L$  nuqtalar orasidagi potentsiallar farqini ( $\text{V}$ ) toping.



- A)  $30$  B)  $40$  C)  $60$  D)  $20$
26. Tovush chastotasining balandligi  $80 \text{ Gs}$  bo'lgan odam tovushining to'liq uzunligini ( $\text{m}$ ) aniqlang. Tovush tezligi havoda  $340 \text{ m/s}$ .  
A)  $4,25$  B)  $5$  C)  $160$  D)  $6,80$
27.  $5 \text{ kg}$  massali yuk qiya tekislikdan  $20 \text{ N}$  kuch ta'sirida ko'tarildi. Qiya tekislikning uzunligi  $10 \text{ m}$ , balandligi  $3 \text{ m}$ . Qiya tekislikning foydali ish koeffitsienti (%) nimaga teng?  
A)  $60$  B)  $90$  C)  $75$  D)  $50$
28.  $3 \text{ kg}$  massali  $15 \text{ m/s}$  tezlik bilan harakatlanayotgan aravacha unga qarama-qarshi yo'nalishda xuddi shunday tezlikda harakatlanayotgan  $1 \text{ kg}$  massali aravachaga urilib, unga yopishib qoldi. Ularning birgalikdagi tezligini ( $\text{m/s}$ ) toping.  
A)  $5$  B)  $13,2$  C)  $15$  D)  $7,5$
29. Agar tormozlanishdagi ishqalanish koeffitsienti  $0,4$  ga teng bo'lsa,  $12 \text{ m/s}$  tezlik bilan harakatlanayotgan avtobus qancha vaqtdan ( $\text{s}$ ) keyin to'xtaydi?  $g = 10 \text{ m/s}^2$   
A)  $4$  B)  $3$  C)  $30$  D)  $0,3$

30. Lorens kuchi ifadasining to'g'ri javob yozilgan variantini tanlang.  
 A)  $F = qE$     B)  $F = \frac{mv^2}{R}$     C)  $F = IBlsin\alpha$   
 D)  $F = qvBsin\alpha$
31. Jismning massasi 1 g ga ortishi uchun uning to'liq energiyasi (TJ) qanchaga ortishi kerak?  
 A) 90    B) 80    C) 100    D) 97
32. Agar og'irligi 7,8 N bo'lgan metall parchasining suvdagi og'irligi 6,8 N ga, benzindagi og'irligi 7,1 N ga teng bo'lsa, benzinning zichligi ( $\text{kg}/\text{m}^3$ ) qanday?  
 A) 800    B) 7000    C) 700    D) 680
33. Kritik temperaturadan past temperaturada bo'lgan gaz qanday gaz deb ataladi?  
 A) *bug'*    B) *ideal gaz*    C) *real gaz*  
 D) *shudring*
34.  $27^\circ\text{C}$  da bir atomli 10 mol gazning ichki energiyasi qanday (kJ)?  
 A) 30,4    B) 38,4    C) 29,4    D) 37,4
35. 5 m/s tezlik bilan harakatlanayotgan jism kinetik energiyasi 50 J bo'lsa, uning impulsini ( $\text{kg}\cdot\text{m}/\text{s}$ ) toping.  
 A) 25    B) 10    C) 20    D) 15
36. Yassi kondensatorning plastinkalariga yuqori chastotali o'zgaruvchan kuchlanish berilganda plastinkalar orasidan uchib o'tayotgan elektron qanday traektoriya chizadi?  
 A) *parabola*    B) *sinusoida*    C) *vintsimon*  
 D) *to'g'ri chiziq*

### INGLIZ TILI

1. Choose the answer which correctly completes the sentence.  
 He was advised ... a computer.  
 A) *bought*    B) *buy*    C) *buying*    D) *to buy*
2. Choose the answer which correctly complete the sentence.  
 I have just had a quarrel with my parents. What would you do if you ... me?  
 A) *would be*    B) *had been*    C) *are*  
 D) *were*

3. Choose the answer which correctly completes the sentence.  
 We didn't know that we would come to the lake, otherwise we ... our fishing rods.  
 A) *would take*    B) *had taken*    C) *took*  
 D) *would have taken*
4. Choose the answer which correctly completes the sentence.  
 Our guests didn't leave until 2 a.m., so they ... have enjoyed themselves.  
 A) *can't*    B) *ought*    C) *should*    D) *must*
5. Choose the answer which correctly completes the sentence.  
 Your friend can borrow my ... camera for the weekend.  
 A) *father's-in-law*    B) *father-in-law's*  
 C) *fathers-in-law*    D) *father-in-law*
6. Choose the answer which correctly completes the sentence.  
 Mark and Susan met during their holiday in Sweden. It was love at ... first sight.  
 A) -    B) *a*    C) *the*    D) *an*
7. Choose the answer which correctly completes the sentence.  
 He never found his key ... he looked in every pocket and every drawer.  
 A) *as*    B) *because*    C) *despite*    D) *though*
8. Choose the answer which correctly completes the sentence.  
 It took me one and ... half hours to get there.  
 A) *the*    B) -    C) *a*    D) *an*
9. Choose the answer which correctly completes the sentence.  
 He's talked about it many times. Any ... discussion is useless.  
 A) *further*    B) *farthest*    C) *furthest*    D) *far*
10. Choose the answer which correctly completes the sentence.  
 Hockey players wear lots of protective clothing ... they don't get hurt.  
 A) *since*    B) *because*    C) *in order that*  
 D) *however*



11. Choose the answer which correctly completes the sentence.  
They closed down the factory because it ... money for years.  
A) *lost* B) *has lost* C) *had been losing*  
D) *was losing*
12. Choose the answer which correctly completes the sentence.  
Meeting begins at 6 p.m. You won't be late, ...?  
A) *you will be* B) *will you* C) *will you be*  
D) *won't you*
13. Choose the answer which correctly complete the sentence.  
Sara, my next door neighbour, has a car, but she ... it very often.  
A) *isn't using* B) *hasn't been using*  
C) *doesn't use* D) *hasn't used*
14. Choose the answer which correctly complete the sentence.  
Vasco de Gama, accompanied by a large crew and a fleet of twenty ships, ... trying to establish Portuguese domination in Africa in the 16-th century.  
A) *have been* B) *were* C) *was*  
D) *has been*
15. Choose the answer which correctly completes the sentence.  
Don't worry about your birthday. We'll have everything ... by then.  
A) *arrange* B) *to arrange* C) *arranging*  
D) *arranged*
16. Choose the answer which correctly completes the sentence.  
I am afraid there are ... vacancies in the company at present.  
A) *neither* B) *no* C) *not* D) *none*
17. Choose the answer which correctly completes the sentence.  
We woke up just ... time to see the sunrise this morning.  
A) *on* B) *to* C) *for* D) *in*
18. Choose the answer which correctly completes the sentence.  
Sunday morning breakfast ... in the kitchen at nine.  
A) *is served* B) *is serving* C) *serves*  
D) *is being served*
19. Choose the answer which correctly complete the sentence.  
These library books are overdue so I ... pay a fine when I return them.  
A) *may* B) *have to* C) *need* D) *can*
20. Choose the answer which correctly completes the sentence.  
Can you help me look ... my glasses. I can't find them.  
A) *at* B) *for* C) *up* D) *after*
21. Choose the answer which correctly completes the sentence.  
It is not ... that the Arabs, who possessed a remarkable gift for astronomy, geometry and mathematics were also skillful mapmakers.  
A) *surprises* B) *surprise* C) *surprising*  
D) *surprised*
22. Choose the answer which correctly complete the sentence.  
"Will you please hold this bag for me?" - Laura said to Helen.  
Laura asked Helen ...  
A) *to hold the bag for her.*  
B) *that she will hold her bag for her.*  
C) *if she would please to hold that bag.*  
D) *that would she hold her bag for her.*

23. Choose the answer which correctly completes the sentence.

That theatre ... to close down soon.

- A) *is thought*   B) *is thinking*   C) *thought*  
D) *thinks*

Read the text. Then choose the correct answer to question 24-26.

One of the smallest of all mammals is the shrew, a mouse like creature with a head and body length of only 3.8 centimetres. All shrews are small, with dense, velvety fur, long tails, and tiny eyes and ears. Shrews have been called blood-thirsty, though the label is not entirely accurate because they must eat almost constantly to stay alive. The animal is believed to have a very high metabolic rate and cannot live more than a few hours without food. In the absence of normal prey, it will turn to cannibalism to survive. The shrew, or some closely related animal, can be found on every continent except Australia. Since this tiny animal has a reputation for having a very bad temper, the adjective "shrewish" is sometimes used to describe a certain type of women.

24. The passage tells us that the shrew ...

- A) *lives in dense forests.*  
B) *has a very short life span.*  
C) *is similar to a mouse in appearance*  
D) *is in the habit of eating every two hours.*

25. The passage states that shrews ...

- A) *are found in huge numbers in Australia.*  
B) *eat rarely but in large amounts at a time.*  
C) *eat each other when they can't find any food.*  
D) *are the smallest living mammals.*

26. From what is stated in the passage, we can infer that a shrewish woman is someone who ...

- A) *is noticeably smaller than the average.*  
B) *easily gets annoyed.*  
C) *is very fond of velvet and fur.*  
D) *has tiny eyes and ears.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Andrew Murphy former (27)... director of Delco Electronics, has pleaded "Not Guilty" to charges that he stole £ 5 million from the company. He claims not to know where the money went. He has suggested (28)... an accountant took the money. Investigators consider it unlikely that anyone else in the company could have committed the crime.

- 27.

- A) *manage*   B) *managed*   C) *managing*  
D) *to manage*

- 28.

- A) *that*   B) *who*   C) *where*   D) *what*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

In 900AD the cities of the Mayan civilization were still prosperous, but a hundred years later they (29)... . A number of theories have been put (30)... to explain this. One theory is that the Mayan ruling class died out because rulers did not work and so became (31)..., and there was nobody to tell the formers what to do.

- 29.

- A) *had abandoned*   B) *had been abandoned*  
C) *abandoned*   D) *have been abandoned*

- 30.

- A) *forward*   B) *at*   C) *down*   D) *through*

31.

- A) *unhealth*    B) *unhealthy*    C) *healthy*  
D) *health*

Read the text. Then choose the correct answer to question 32-33

One chilly autumn morning in 1945, five thousand shoppers crowded the pavements outside Gimble's Department Store in New York City. The day before, Gimble's had taken out a full-page newspaper advertisement in the *New York Times*, announcing the sale of the first ballpoint pens in the United States. Within six hours, Gimble's had sold its entire stock of ten thousand ballpoints at \$12.50 each—approximately \$130 at today's prices.

In fact this “new” pen was not new after all, and was just the latest development in a long search for the best way to deliver ink to paper. In 1884 Lewis Waterman had patented the fountain pen, giving him the sole rights to manufacture it. This marked a significant leap forward in writing technology, but fountain pens soon became notorious for leaking. In 1888, a leather tanner named John Loud devised and patented the first “rolling-pointed marker pen” for marking leather. Loud's design contained a reservoir of ink in a cartridge and a rotating ball point that was constantly bathed on one side with ink.

Loud's pen was never manufactured, however, and over the next five decades, 350 additional patents were issued for similar ball-type pens, though none advanced beyond the design stage. Each had their own faults, but the major difficulty was the ink: if the ink was thin, the pens leaked, and if it was too thick, they clogged. Depending on the climate or air temperature, sometimes the pens would do both. Almost fifty years later, Ladislav and Georg Biro, two Hungarian brothers, **came up with** a solution to this problem. In 1935 Ladislav Biro was working as a journalist, editing a small newspaper. He became frustrated by the amount of time he wasted filling fountain pens with ink and cleaning up ink smudges. Ladislav and Georg set about making models of new pen designs and creating better inks to use in them. Ladislav observed the ink in newspaper printing dried rapidly, leaving the paper dry and smudge-free. He was determined to construct a pen using the same type of ink. However, the thicker ink would not flow from a regular pen nib so he had to develop a new type

of point. Biro came up with the idea of fitting his pen with a tiny ball bearing in its tip. As the pen moved along the paper, the ball bearing rotated and picked up ink from the ink cartridge which it delivered to the paper.

32. The problem with the ballpoint pens invented between 1888 and 1935 was that ...
- A) *they could not write on ordinary paper*  
B) *they cost a great deal of money to manufacture*  
C) *the technology to manufacture them did not exist*  
D) *they were affected by weather conditions*
33. What does “**came up with**” in bold mean?
- A) *to suggest*    B) *to move towards*  
C) *to get rid of*    D) *to reject*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deimos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?
- A) *Mars is larger than Earth*
  - B) *Martian soil is rocky*
  - C) *It takes longer for Mars to circle the Sun than it takes Earth*
  - D) *Mars has two moons*
35. Man-made canals were supposedly discovered by ...
- A) *Phobos*
  - B) *Schiaparelli*
  - C) *Martian*
  - D) *Viking I*
36. Mars has been nicknamed as ...
- A) *The Red Planet*
  - B) *Viking I*
  - C) *Martian*
  - D) *Deimos*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000058**

Toshkent – 2014

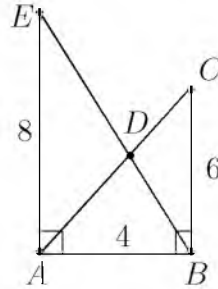
### MATEMATIKA (INFORMATIKA BILAN)

- Agar to'g'ri to'rtburchak kichik tomoni  $a = 10\sqrt{2}$  bo'lsa, uning ixtiyoriy burchagidan katta tomonga o'tgan bissektrisasi uzunligi qancha?  
A) 10 B) 20 C) 30 D) 15
- $y = \sqrt{25 - x^2}$  funksiyaning grafigi bo'lgan egri chiziq va  $y = 0$  to'g'ri chiziq bilan chegaralangan shakl yuzini toping.  
A)  $25\pi$  B)  $5\pi$  C)  $12,5\pi$   
D) aniqlab bo'lmaydi
- $$\begin{cases} 2x - 1 > x, \\ x^2 - 7x + 6 > 0, \\ 2^x < 128 \end{cases}$$
 tengsizliklar sistemasini yeching.  
A)  $(-\infty; 6)$   
B)  $(-\infty; 6) \cup (7; \infty)$   
C)  $(7; \infty)$   
D)  $(6; 7)$
- $\sqrt{x^2 + 11} - \sqrt{x^2 - 9} = 2$  tenglamani yeching.  
( $x \in R$ )  
A) -3 B) -5; 5 C) 5; 3 D) 3
- $|x| - |x - 2| = 2$  tenglamani yeching.  
A)  $\{-2\}$  B)  $[2; \infty)$  C)  $\{2\}$  D)  $(2; \infty)$
- Kubning sirti  $294 \text{ sm}^2$  ga teng. Uning barcha qirralari yig'indisini (sm) toping.  
A) 98 B) 147 C) 84 D) 117
- To'g'ri burchakli trapetsiyaning diagonali uning yon tomoniga teng. Agar bu trapetsiyaning balandligi 2 ga, yon tomoni esa 4 ga teng bo'lsa, uning o'rta chizig'i uzunligini toping.  
A)  $6\sqrt{2}$  B)  $3\sqrt{3}$  C)  $3\sqrt{2}$  D)  $5\sqrt{3}$
- $\int_0^2 (x^2 + 1) dx$  ni hisoblang.  
A)  $4\frac{4}{5}$  B)  $4\frac{3}{4}$  C)  $4\frac{2}{3}$  D)  $4\frac{5}{6}$
- $y = \arcsin \frac{x-3}{2} - \lg(4-x)$  funksiyaning aniqlanish sohasini toping.  
A)  $[1; 5]$  B)  $(1; 4)$  C)  $[1; 4]$  D)  $[1; 4)$

10. 
$$\frac{\left(\frac{1}{a} + \frac{1}{b} - \frac{2c}{ab}\right)(a+b+2c)}{\frac{1}{a^2} + \frac{1}{b^2} + \frac{2}{ab} - \frac{4c^2}{a^2b^2}}$$
 ifodani soddalashtiring va uning son qiymatini toping.  
 $a=7,4; b = \frac{5}{37}$ .

A)  $\frac{1}{2}$  B) 1 C)  $\frac{4}{5}$  D) 0

11. Rasmda berilgan  $ADE$  va  $BDC$  uchburchaklar yuzalarining ayirmasini toping.

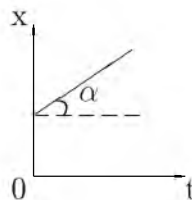


A) 4 B) 2 C) 5 D) 8

- Tekislikdan  $h$  uzoqlikda joylashgan nuqtadan tekislikka o'tkazilgan va tekislik bilan  $30^\circ$  li burchak hosil qiladigan og'maning uzunligini toping.  
A)  $\sqrt{3}h$  B)  $1,5h$  C)  $\sqrt{2}h$  D)  $2h$
- $ax = by = cz = 6$  va  $x + y + z = 36$  ekani ma'lum bo'lsa,  $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$  ni toping.  
A) 6 B) 12 C) 5 D) 9
- Muntazam o'n burchakning har bir ichki burchagi necha gradusga teng?  
A)  $150^\circ$  B)  $144^\circ$  C)  $146^\circ$  D)  $135^\circ$
- Asosidagi burchaklari  $60^\circ$  va  $30^\circ$  bo'lgan trapetsiyaga radiusi  $3\sqrt{3}$  bo'lgan doira ichki chizilgan. Trapetsiyaning perimetrini toping.  
A)  $3\sqrt{3}$  B) 8 C)  $2\sqrt{2}$  D)  $24(1+\sqrt{3})$
- $\arccos(1+x) + 2\arcsin x = 0$  tenglamani yeching.  
A) -1 B) 0 C)  $\frac{1}{3}$  D)  $-\frac{1}{2}$
- $\sqrt{x^2 + 3x - 3} = 2x - 3$  tenglamani yeching.  
A) -4 B) 5 C) 4 D) 3
- $(x-1)^2(x^2 - 2x) = 12$  tenglamaning haqiqiy ildizlari yig'indisini toping.  
A) 0 B) 2 C) 3 D) 4

19. Dastlabki o'nta hadining yig'indisi 55 ga teng bo'lgan arifmetik progressiyaning o'ninchi hadi 19 ga teng bo'lsa, uning ayirmasini toping.  
A) 2 B) 3 C) -2 D) -3
20. Uchlari  $A(-2; 3)$ ,  $B(-1; -2)$  va  $C(1; 1)$  nuqtalarda bo'lgan uchburchakning A va C burchaklarini toping.  
A)  $90^\circ; 45^\circ$  B)  $45^\circ; 90^\circ$  C)  $30^\circ; 90^\circ$   
D)  $45^\circ; 45^\circ$
21. Radiusi  $R$  ga teng bo'lgan doiraning markazidan bir tomonda ikkita bir-biriga parallel vatar o'tkazildi. Bunda ulardan biri  $120^\circ$  li, ikkinchisi  $60^\circ$  li yoylarni tortib tursa, vatarlar orasida joylashgan maydon yuzini toping.  
A)  $\frac{\pi R^2}{6}$  B)  $\frac{\pi R^2}{4}$  C)  $\frac{5\pi R^2}{8}$  D)  $\frac{\pi R^2}{3}$
22.  $y = \ln ||x| + 1|$  funksiyaning aniqlanish sohasini toping.  
A)  $(-\infty; 0)$   
B)  $(1; \infty)$   
C)  $(-\infty; \infty)$   
D)  $(0; \infty)$
23. Kubga tashqi chizilgan sharning hajmi  $\frac{32}{3}\pi$  ga teng. Kubning diagonaliga tegishli bo'lmagan uchlaridan diagonalgacha bo'lgan masofani toping.  
A)  $\frac{4\sqrt{2}}{\sqrt{3}}$   
B)  $\frac{3\sqrt{3}}{8}$   
C)  $\frac{3\sqrt{2}}{4}$   
D)  $\frac{4\sqrt{2}}{9}$
24.  $\frac{\sqrt[4]{7\sqrt[3]{54} + 15\sqrt[3]{128}}}{\sqrt[3]{4\sqrt[4]{32} + \sqrt[3]{9\sqrt[4]{162}}}}$  ni hisoblang.  
A)  $\frac{3}{5}$  B)  $\frac{1}{4}$  C) 1 D)  $\frac{2}{3}$
25.  $y = \sqrt{\log_{0,2} \frac{x+2}{x-1}} - 1$  funksiyaning aniqlanish sohasini toping.  
A)  $(-\infty; -2]$   
B)  $\left[-\frac{11}{4}; -2\right)$   
C)  $[-2; 1)$   
D)  $\emptyset$
26.  $f(x) = \cos 2x + e^x$ ,  $f'(x) = ?$   
A)  $-\sin 2x + e^x$  B)  $-\sin x + e^x$   
C)  $-2\sin 2x + e^x$  D)  $\sin 2x + e^x$
27.  $m$  dan katta bo'lmagan juft natural sonlarning yig'indisi  $x$ ,  $m$  dan katta bo'lmagan, lekin 10 dan katta bo'lgan juft sonlarning yig'indisi  $y$  hamda  $x + y = 810$  bo'lsa,  $m$  ning barcha qiymatlari yig'indisini toping.  
A) 210 B) 420 C) 81 D) 83
28. Agar uch xonali sondan 6 ni ayirsak, ayirma 7 ga bo'linadi, 7 ni ayirsak, ayirma 8 ga bo'linadi, 8 ni ayirsak, ayirma 9 ga bo'linadi. Bu sonni toping.  
A) 936 B) 143 C) 503 D) 167
29. Rombning tomoni 4 ga, o'tkir burchagi  $30^\circ$  ga teng bo'lsa, unga ichki chizilgan aylananing uzunligini toping.  
A)  $4\pi$  B)  $\pi$  C)  $2\pi$  D)  $\frac{\pi}{2}$
30.  $2^{x+4} + 3 \cdot 2^{x-2} \geq 67$  tengsizlikni yeching.  
A)  $[2; \infty)$   
B)  $[3; \infty)$   
C)  $(-\infty; 2)$   
D)  $[4; \infty)$
31. Agar kitobdagi axborot hajmi 7 Kbayt bo'lsa, uni nechta "Axborot" so'zi bilan almashtirish mumkin?  
A) 1024 B) 2048 C) 2000 D) 14336
32. Hisoblang va o'tkazishni bajaring:  
 $27_{10} + 111_2 \rightarrow x_2$   
A)  $100010_2$  B)  $100011_2$  C)  $100110_2$   
D)  $100111_2$

33. Kompyuter uchun yangi dasturlar tayyorlash va tahrirlashni yengillashtiruvchi dasturlar qanday nomlanadi?  
A) *Sistema dasturlari* B) *Amaliy dasturlar*  
C) *Uskunaviy dasturlar* D) *Utilitalar*
34. MS Excel 2003 da A1 dan A10 gacha bo'lgan katakchalardagi qiymatlarni yig'indisini hisoblash formulasini aniqlang.  
A)  $CYMM(A1:A10)$  B)  $=summa(A1:A10)$   
C)  $A1+A10$  D)  $=CYMM(A1:A10)$
35. Nuqtalar o'rniga kerakli iborani tanlang: Foydalanuvchi elektron pochta qutisini Internetga ulangan ... ocha oladi.  
A) *faqat o'z kompyuterida*  
B) *faqat shu pochta ochilgan kompyuterda*  
C) *ixtiyoriy kompyuterda*  
D) *faqat server kompyuterda*
36. Paskal dasturi lavhasidagi hisob natijasini aniqlang.  
begin a:=12; b:=14; c:=10; if(a>b) or (b>c) then y:=a+b-c else y:=a-b+c; writeln(y); end.  
A) 8 B) 6 C) 16 D) 14
5. Bir xil 5 nC dan elektr zaryadiga ega bo'lgan, radiuslari 2 sm va 6 sm ga teng bo'lgan metall sharlar bir-biriga tekizilsa va dastlabki holatga qaytarilsa ularning ta'sirlashuv energiyasi qanday o'zgaradi?  
A) *o'zgarmaydi* B) *25% kamayadi*  
C) *25% ortadi* D) *32% ortadi*
6. Gaz razryadi jarayonida qanday zarrachalar ishtirok etadi?  
A) *elektronlar va kovaklar*  
B) *faqat elektronlar*  
C) *elektronlar, musbat va manfiy ionlar*  
D) *faqat ionlar*
7. Berilgan grafikdan foydalanib,  $\alpha=23^\circ$  bo'lganda jism tezligini (m/s) toping.  $\sin 23^\circ=0,39$ ;  $\cos 23^\circ=0,92$



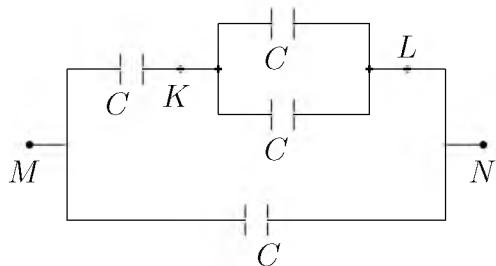
- A) 2,36 B) 0,4245 C) 0,92 D) 0,39

### FIZIKA

1. Agar qavariq linza yordamida buyumning mavhum tasviri hosil qilinayotgan bo'lsa, buyum qayerda joylashgan?  
A) *linzaning fokusida*  
B) *ikkilangan fokus masofadan uzoqda*  
C) *fokus masofa bilan ikkilangan fokus masofa orasida*  
D) *fokus nuqta va optik markaz orasida*
2. Qarshiligi  $40 \Omega$  bo'lgan o'tkazgichdan 4 minut vaqt ichida 360 C zaryad o'tgan. O'tkazgich uchlaridagi kuchlanishni (V) toping.  
A) 40 B) 60 C) 86 D) 90
3. Yashil shisha orqali qizil harflarga qaralsa, ular qanday rangda ko'rinadi?  
A) *qora* B) *qizil* C) *yashil* D) *jigarrang*
4. Teplovoz 1 vagonga  $6 \text{ m/s}^2$ , 2 vagonga  $4 \text{ m/s}^2$ , 3 vagonga  $2 \text{ m/s}^2$  tezlanish beradi. Bu uchala vagondan iborat sostavga teplovoz qanday tezlanish ( $\text{m/s}^2$ ) beradi?  
A) 11/15 B) 12/15 C) 11/12 D) 12/11
8. Suv tubidan qalqib chiqayotgan pufakchanning hajmi suv sirtiga yaqinlashganda  $n$  marta ortgan bo'lsa, suvning chuqurligini aniqlash ifodasini ko'rsating.  $P_a$  - atmosfera bosimi,  $\rho_s$  - suv zichligi.  
A)  $\frac{P_a g}{\rho_s (n-1)}$  B)  $\frac{P_a (n-1)}{\rho_s g}$  C)  $\frac{P_a}{\rho_s (n-1) g}$   
D)  $\frac{\rho_s (n-1)}{P_a g}$
9. Gaz boshlang'ich 6 l hajmdan 4 l gacha izotermik siqilgan. Bunda uning bosimi  $2 \cdot 10^5 \text{ N/m}^2$  ga ortgan. Gazning boshlang'ich bosimi ( $\text{N/m}^2$ ) qanday?  
A)  $4 \cdot 10^5$  B)  $4 \cdot 10^6$  C)  $20 \cdot 10^5$  D)  $2 \cdot 10^5$
10. Temir bo'lagining suvdagi og'irligi 9,8 N, zichligi  $7800 \text{ kg/m}^3$  bo'lsa, temir bo'lagining hajmini ( $\text{sm}^3$ ) toping.  
A) 1,47 B) 147 C) 14,7 D) 125
11. Kon elektrovozi poyezdni  $0,1 \text{ m/s}^2$  tezlanish bilan tortib bormoqda. Poyezdning massasi 60 t. Harakatga qarshilik kuchi 4120 N. Tortish kuchini (kN) toping.  
A) 11 B) 10,12 C) 11,12 D) 12



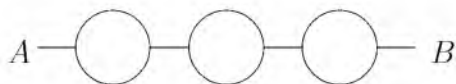
12. Rasmdagi har bir kondensatorning sig'imi  $C$  ga teng.  $M$  va  $N$  nuqtalar orasidagi potentsiallar farqi  $120\text{ V}$  bo'lsa,  $K$  va  $L$  nuqtalar orasidagi potentsiallar farqini (V) toping.



- A) 30 B) 40 C) 20 D) 60
13. Berilgan inersial sanoq sistemasida jism massasining uning harakat tezligiga bog'liqligi qanday ifodalanadi?
- A)  $m = \rho V$   
 B)  $\Delta m = \frac{\Delta E}{c^2}$   
 C)  $m = \frac{m_0}{\sqrt{1 - \frac{v^2}{c^2}}}$   
 D)  $m = \frac{2E_k}{v^2}$
14. Ballondagi gazning yarmi chiqib ketishi natijasida uning temperaturasi  $55^\circ\text{C}$  dan  $2^\circ\text{C}$  gacha pasaygan bo'lsa, ichki energiya necha marta kamaygan bo'ladi?
- A) 2,38 B) 2,30 C) 2,2 D) 2,36
15. Kislorod atomining massasi uning yadrosi massasidan necha marta katta?
- A)  $\approx 1840$  B)  $\approx 1$  C)  $\approx 10^5$   
 D)  $\approx 16 \cdot 1840$
16. Elektron vakuumda induksiyasi  $5 \cdot 10^{-3}\text{ T}$  bo'lgan bir jinsli magnitoviy maydonda  $10 \cdot 10^3\text{ km/s}$  tezlik va induksiya chiziqlariga perpendikular yo'nalgan holda harakatlanmoqda. Elektroniga ta'sir etuvchi kuchni toping (N)?
- A)  $5 \cdot 10^{-15}$  B)  $8 \cdot 10^{-15}$  C)  $4 \cdot 10^{-15}$   
 D)  $2 \cdot 10^5$
17. Massalari 60 va 80 kg bo'lgan ikkita konki uchuvchi bir-birini 24 N kuch bilan itarsalar, ular qanday tezlanish ( $\text{m/s}^2$ ) oladilar?
- A) 0,3 va 0,4 B) 0,4 va 0,3 C) 3 va 4  
 D) 4 va 3

18.  $72\text{ km/h}$  tezlikda harakatlanayotgan poyezd dvigateli o'chirilsa, qancha masofa (m) yo'l o'tib to'xtaydi? Ishqalanish koeffitsienti  $\mu=0,02$ .
- A) 1000 B) 500 C) 720 D) 1440
19. Bir noinersial sanoq sistemasiga nisbatan o'zgarmas tezlik bilan harakat qilayotgan zaryadlangan zarracha, ikkinchi inersial sanoq sistemasiga nisbatan qanday maydon hosil qiladi? 1 - o'zgaruvchan elektr maydoni; 2 - o'zgarmas elektr maydoni; 3 - o'zgaruvchan magnit maydoni; 4 - o'zgarmas magnit maydoni; 5 - gravitasion maydon.
- A) 1, 2, 3, 4, 5 B) 2, 4, 5 C) 2, 5  
 D) 1, 3, 5
20. Massasi 50 kg bo'lgan bola Oy sirtida turibdi deylik. U Oyga qanday kuch (N) bilan tortiladi?  $g=1,6\text{ m/s}^2$
- A) 16 B) 50 C) 80 D) 500
21. Metall sirtiga to'lqin uzunligi  $0,15\ \mu\text{m}$  bo'lgan yorug'liq tushayapti. Agar fotoeffektning qizil chegarasi  $0,2\ \mu\text{m}$  bo'lsa foton energiyasining qancha qismi (%) kinetik energiyasiga aylanadi?
- A) 100 B) 40 C) 25 D) 50
22. 500 W quvvatli elektroplitka kuchlanish  $127\text{ V}$  li sanoat tarmog'iga ( $\nu=50\text{ Hz}$ ) ulangan. Plitka zanjirida tok kuchining (A) vaqtga bog'lanish tenglamasini ko'rsating. Kuchlanish sinus qonuniga ko'ra o'zgaradi deb hisoblang.
- A)  $I = 5,6\sin 100\pi t$  B)  $I = 5,6\sin 50t$   
 C)  $I = 4\sin 100\pi t$  D)  $I = 127\sin 100\pi t$
23. Izotermik kengayganda ideal gaz 20 J ish bajaradi. Gazga qancha issiqlik miqdori (J) berilgan?
- A) 50 B) issiqlik miqdori berilmaydi C) 30  
 D) 20
24. O'zgarmas tok manbaiga avval  $9\ \Omega$  qarshilik so'ngra  $4\ \Omega$  qarshilik ulandi. Har ikkala holda birday vaqt ichida qarshiliklarda bir xil miqdorda issiqlik ajraladi. Manbaning ichki qarshiligini ( $\Omega$ ) aniqlang.
- A) 3 B) 36 C) 6 D)  $\sqrt{6}$
25. Tebranish konturi umumiy elektr sig'imi  $6 \cdot 10^{-3}\ \mu\text{F}$  bo'lgan leyden bankalari va induktivligi  $11\ \mu\text{H}$  bo'lgan g'altaklardan iborat. Konturdagi elektromagnit tebranishlarning chastotasini (kHz) toping.
- A) 700 B) 800 C) 600 D) 750

26. Tutash idishga simob ( $\rho_{sm}=13600 \text{ kg/m}^3$ ) quyildi, uning ustidan bitta idishga 20 sm balandlikda kerosin ( $\rho_k=800 \text{ kg/m}^3$ ) quyildi. Ikkinchisiga 48 sm balandlikda moy ( $\rho_m=900 \text{ kg/m}^3$ ) quyildi. Ikkala idishdagi simob sathlarining farqini (sm) aniqlang.  
A) 4,0 B) 1,0 C) 2,0 D) 4,4
27. 100 mol simob qancha hajmni (l) egallaydi?  
( $M = 200 \frac{\text{g}}{\text{mol}}$ ,  $\rho = 13600 \frac{\text{kg}}{\text{m}^3}$ )  
A) 2,23 B) 1,66 C) 1,47 D) 1,52
28. Chuqurligi 5 m bo'lgan ko'ldagi suvning bosimi necha (kPa) teng? Atmosfera bosimi  $p_0=10^5 \text{ Pa}$ .  
A) 15 B) 150 C) 50 D) 5
29. Rasmda tasvirlangan har bir halqa qarshiligi  $R$  ga teng bo'lgan o'tkazgichdan tayyorlanib, ular rasmda ko'rsatilgandek ulansa  $A$  va  $B$  nuqtalar orasidagi umumiy qarshilik nimaga teng bo'ladi?



- A)  $7R/2$  B)  $1,5R$  C)  $5R/2$  D)  $0,75R$
30. Tovush chastotasining balandligi 80 Gs bo'lgan odam tovushining to'lqin uzunligini (m) aniqlang. Tovush tezligi havoda 340 m/s.  
A) 160 B) 4,25 C) 5 D) 6,80
31. Osilgan prujinaga yuk 0,5 s davr bilan tebranmoqda. Agar yuk prujinadan olinsa, prujina qanchaga qisqaradi (sm)?  
A) 5,4 B) 2,0 C) 6,3 D) 39,7
32. Aylana bo'ylab tekis harakat qilayotgan moddiy nuqtaning chiziqli tezligi 2 m/s va burchak tezligi 5 rad/s bo'lsa, markazga intilma tezlanishini ( $\text{m/s}^2$ ) toping.  
A) 20 B) 10 C) 15 D) 5
33. Botiq ko'zgi yordamida hosil qilingan tasvir predmetning o'zidan 2 marta katta, tasvir va predmet orasidagi masofa 18 sm, ko'zguning egrilik radiusini (sm) toping.  
A) 0,24 B) 12 C) 8 D) 24

34. Quvvati 25 W va 100 W bo'lgan 2 ta lampochka 220 V kuchlanishda ishlashga muljallangan. Qaysi lampochkaning qarshiligi katta va necha marta?  
A)  $R_2 = 2R_1$  B)  $R_2 = 4R_1$  C)  $R_1 = 4R_2$   
D)  $R_1 = 2R_2$
35. Ideal gazning massasi o'zgarmagani holda uning hajmi 4 marta kamaytirilib, bosimi 7 marta orttirilsa, gazning ichki energiyasi necha marta ortadi?  
A)  $4/11$  B)  $4/7$  C)  $7/4$  D)  $11/4$
36. Ma'lum tezlik bilan harakatlanadigan jismning kinetik energiyasi 50 MJ, impulsi 10 kJ·m/s bo'lsa, massasini (kg) toping.  
A) 2 B) 1 C) 0,5 D) 1,5

### INGLIZ TILI

- Choose the answer which correctly completes the sentence.  
Our guests didn't leave until 2 a.m., so they ... have enjoyed themselves.  
A) *can't* B) *should* C) *must* D) *ought*
- Choose the answer which correctly completes the sentence.  
He'll never forgive her for lying to him, ... he?  
A) *would* B) *won't* C) *wouldn't* D) *will*
- Choose the answer which correctly complete the sentence.  
This soup is made from black beans. It is black ... soup.  
A) *bean's* B) *bean* C) *beans* D) *beans'*
- Choose the answer which correctly completes the sentence.  
Once he was skiing too fast down a mountain, when he crashed into ... tree.  
A) *an* B) *the* C) - D) *a*
- Choose the answer which correctly completes the sentence.  
Alf ... as a waiter for ten years, then he opened his own company.  
A) *works* B) *has been working* C) *worked*  
D) *has worked*

6. Choose the answer which correctly completes the sentence.  
There are 9 planets in our solar system, and ... Pluto is the farthest.  
A) *the* B) *a* C) *an* D) -
7. Choose the answer which correctly complete the sentence.  
"Will you please hold this bag for me?" - Laura said to Helen.  
Laura asked Helen ...  
A) *that she will hold her bag for her.*  
B) *if she would please to hold that bag.*  
C) *that would she hold her bag for her.*  
D) *to hold the bag for her.*
8. Choose the answer which correctly completes the sentence.  
He tried to phone his friend four days ago with no success. Since then he ... him five times.  
A) *is phoning* B) *phoned* C) *has phoned*  
D) *phone*
9. Choose the answer which correctly completes the sentence.  
she was reading quietly in her room when suddenly the light ... out and she heard a scream.  
A) *go* B) *went* C) *going* D) *had gone*
10. Choose the answer which correctly completes the sentence.  
George's father gives him enough money to go to school, so he ... work.  
A) *doesn't have to* B) *ought not to*  
C) *didn't have to* D) *has to*
11. Choose the answer which correctly completes the sentence.  
She went to the bank ... to get some money.  
A) *unless* B) *in order* C) *in case*  
D) *even though*
12. Choose the answer which correctly completes the sentence.  
Nancy used ... a bike to work, but now she drives.  
A) *ride* B) *to ride* C) *to be ridden*  
D) *riding*
13. Choose the answer which correctly completes the sentence.  
We saw beautiful mountains, fields and lakes on our trip. In ... words, we saw beautiful scenery.  
A) *the other* B) *other* C) *others*  
D) *another*
14. Choose the answer which correctly complete the sentence.  
I wish I ... taller, because I am not very tall.  
A) *would have been* B) *will be*  
C) *would be* D) *were*
15. Choose the answer which correctly completes the sentence.  
The older his granny gets, ... tolerant she becomes.  
A) *the least* B) *least* C) *the little*  
D) *the less*
16. Choose the answer which correctly completes the sentence.  
He wanted to write to her but she ... give him her address.  
A) *don't* B) *wouldn't* C) *hadn't*  
D) *hasn't*
17. Choose the answer which correctly completes the sentence.  
The receptionist put me ... to the manager's secretary.  
A) *off* B) *forward* C) *with* D) *through*
18. Choose the answer which correctly complete the sentence.  
He deserved to be given an ... for bravery.  
A) *direction* B) *ticket* C) *mark* D) *award*
19. Choose the answer which correctly completes the sentence.  
You'd better leave by the side door ... someone is watching us.  
A) *so that* B) *in case* C) *in order that*  
D) *unless*
20. Choose the answer which correctly completes the sentence.  
We'd like to get our photo ... by a professional photographer.  
A) *taken* B) *taking* C) *to take* D) *took*

21. Choose the answer which correctly complete the sentence.  
No one was watching television, ... I switched it off.  
A) *in case* B) *so that* C) *so as* D) *so*

22. Choose the answer which correctly completes the sentence.  
The words "cloth" and "clothing" are related, the former meaning fabric or textile, and the ... meaning fabrics used to cover the body.  
A) *latter* B) *latest* C) *later* D) *lately*

23. Choose the answer which correctly complete the sentence.  
Everyone in the village participated ... searching the lost child.  
A) *with* B) *for* C) *in* D) *to*

Read the text. Then choose the correct answer to question 24-26.

Mountains have always evoked awe and inspired artists and adventurers throughout human existence. More recent research has led to important new insights into how mountains, the most magnificent of the Earth's formations, came to be the way they are. Mountains are created and shaped, it now appears, not only by the movements of the vast tectonic plates that make up the Earth's exterior but also by factors such as climate and erosion. In particular, the interactions between tectonic, climatic and erosional processes exert strong control over the shape and maximum height of the mountains as well as the amount of time necessary to build - or destroy - a mountain range. Paradoxically, the shaping of mountains seems to depend as much on the destructive forces of erosion as on the constructive power of tectonics.

24. As it is stated in the passage, recent research has ...  
A) *confirmed what we already knew about mountain formations.*  
B) *enabled us to have better ideas about how mountains are shaped.*  
C) *demonstrated that tectonic plates move usually in one direction*  
D) *created more questions about the way mountains were formed.*

25. The movements of tectonic plates, the climate and erosion are factors ...  
A) *that are effective in the shaping and creation of mountains.*  
B) *that help mountains reach great heights.*  
C) *that collectively form the interior of the Earth.*  
D) *responsible for all the interactions that occur on the Earth's exterior.*

26. We can understand from the passage that the destructive forces of erosion and the constructive power of tectonics ...  
A) *are not sufficient to build mountain ranges.*  
B) *can create mountain ranges with different climates.*  
C) *take an equal amount of time to build a mountain.*  
D) *both play an equal role in the formation of mountains.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Many famous people did not enjoy (27)... success in their early lives. Walt Disney, who was the creator of Mickey Mouse and the founder of his own movie production company, once was fired by a newspaper editor because he had (28)... good ideas.

27.  
A) *imitate* B) *immediately* C) *immediate*  
D) *immediacy*
28.  
A) *nothing* B) *no* C) *none* D) *any*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

29.  
A) *familiarly* B) *familiarity* C) *familiarize*  
D) *familiar*

30. A) are B) will be C) have been D) is

31. A) towards B) of C) with D) into

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *The danger of hunting for the Brazilian population.*
- B) *Hydro-electric dam projects on the Yangtze river.*
- C) *The breeding of small river dolphins.*
- D) *The danger of two breeds of dolphins disappearing.*

33. What does the number 10 in the text refer to?
- A) *The percentage of Amazonian dolphins which die out every year.*
- B) *The percentage of living Yangtze river dolphins.*
- C) *Governmental organizations which fight the pollution of rivers.*
- D) *Groups of biologist who are trying to repopulate dolphins.*

Read the text. Then choose the correct answer to question 34-36.

Of the six outer planets, Mars, commonly called the Red Planet, is the closest to Earth. Mars, 4,200 miles in diameter and 55% of the size of Earth, is 34,600,000 miles from Earth, and 141,000,000 miles from the Sun. It takes this planet, along with its two moons, Phobos and Deamos, 1,88 years to circle the Sun, compared to 365 days for the Earth.

For many years, Mars had been thought of as the planet with the man-made canals, supposedly discovered by an Italian astronomer, Schiaparelli, in 1877. With the United States spacecraft Viking I's landing on Mars in 1976, the man-made canal theory was proven to be only a myth.

Viking I, after landing on the soil of Mars, performed many scientific experiments and took numerous pictures. The pictures showed that the red colour of the planet is due to the reddish, rocky Martian soil. No biological life was found, though it had been speculated by many scientists. The Viking also monitored many weather changes including violent dust storms. Some water vapour, polar ice and permafrost (frost below the surface) were found, indicating that at one time there were significant quantities of water on this distant planet. Evidence collected by the spacecraft shows some present volcanic action, though the volcanoes are believed to be dormant if not extinct.

34. Which of the following is not true?
- A) *It takes longer for Mars to circle the Sun than it takes Earth*
- B) *Mars has two moons*
- C) *Mars is larger than Earth*
- D) *Martian soil is rocky*

35. Man-made canals were supposedly discovered by ...
- A) *Martian*
  - B) *Schiaparelli*
  - C) *Phobos*
  - D) *Viking I*
36. Mars has been nicknamed as ...
- A) *Viking I*
  - B) *Deimos*
  - C) *The Red Planet*
  - D) *Martian*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000059**

Toshkent – 2014

**MATEMATIKA (INFORMATIKA BILAN)**

1. Rombning tomoni 6 sm, bitta burchagi  $120^\circ$  ga teng. Romb tomoniga va kichik diagonaliga urinuvchi aylananing radiusini (sm) toping.  
A) 3 B)  $\sqrt{3}$  C) 4 D)  $2\sqrt{3}$
2. 112 soni shunday 3 bo'lakka bo'linganki, 2-bo'lak 1-bo'lakning 10% ini, 3-bo'lak 2-sining 20% ini tashkil etadi. O'rta bo'lakni toping.  
A)  $112/13$  B) 20 C) 10 D) 5
3. 2 ta parallel to'g'ri chiziqni uchinchi to'g'ri chiziq kesib o'tganda hosil bo'lgan ichki bir tomonli burchaklar  $\frac{7}{13}$  nisbatda. Ulardan kattasini toping.  
A)  $113^\circ$  B)  $117^\circ$  C)  $63^\circ$  D)  $120^\circ$
4.  $\frac{856^2 - 4 \cdot 22^2}{406} : 180$  ni hisoblang.  
A) 8 B) 12 C) 10 D) 16
5. Ikkita doira radiuslari 1:2 nisbatda. Katta doira aylanasining uzunligi  $8\pi$ . Kichik doira yuzini toping.  
A)  $2\pi$  B)  $\pi$  C)  $8\pi$  D)  $4\pi$
6.  $31 \cdot 52 - 93 \cdot 4 + 57 \cdot 25 - 19 \cdot 35 + 2 \cdot (-10)^3$   
A) 4000 B) 0 C) -1000 D) 1000
7. Asosining tomonlari 12; 9 va 15 hamda asosidagi barcha ikki yoqli burchaklari  $60^\circ$  dan iborat bo'lgan uchburchakli piramidaning hajmini toping.  
A)  $108\sqrt{3}$  B)  $162\sqrt{3}$  C)  $54\sqrt{3}$  D)  $27\sqrt{3}$
8. Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.  
A) 10 B) 30 C) 15 D) 20
9.  $f(x) = \sin 2x + 4x$ ,  $f'(x) = ?$   
A)  $\cos x + 4$  B)  $2\cos 2x + 4$  C)  $\cos 2x + 4x$   
D)  $-\cos 2x + 4$
10. Muntazam o'n burchakka tashqi chizilgan aylana radiusi  $\frac{2}{\sin 18^\circ}$  ga teng bo'lsa, uning tomonini toping.  
A) 6 B) 2 C) 4 D) 3
11.  $x, y$  butun sonlar uchun  $-6 \leq x \leq 8$ ,  $-9 \leq y \leq 12$  va  $x + y \neq 0$  bo'lsa,  $\frac{x-y}{x+y}$  ning eng katta qiymatini toping.  
A) 24 B) 17 C) 19 D) 32
12. Shar sirtining unga ichki chizilgan kub sirtiga nisbatini toping.  
A)  $\frac{3\pi}{2}$  B)  $\frac{\pi}{2}$  C)  $\frac{\pi}{6}$  D)  $\frac{\pi}{4}$
13.  $\sqrt{x+1} + \sqrt{2x+3} = 5$ , tenglamaning haqiqiy ildizlari yig'indisini toping.  
A) 3 B) -3 C) 143 D) -6
14. Agar  $a^3 + a - 2 = 0$  bo'lsa,  $\frac{a^4 + a^3 + a^2 + 9}{a^5 + a^2 + a + 6}$  ifodaning qiymatini toping.  
A)  $\frac{4}{3}$  B) 1 C) -2 D)  $\frac{12}{11}$
15.  $\begin{cases} x - y = 2 \\ xy = 15 \end{cases}$  tenglamalar sistemasini yeching.  
A) (5; 3); (-3; -5) B) (-5; 3); (3; -5)  
C) (-5; -3); (3; -5) D) (5; 3); (-5; -3)
16. 3; 5; 9; 17; 33; 65; ... ketma-ketlikning dastlabki  $n$  ta hadining yig'indisini toping.  
A)  $(2 + 2^{n-1}) \cdot n$  B)  $2^{n+1} + n - 2$   
C)  $2^n + n - 2$  D)  $2n$
17.  $x, y, z$  - butun sonlar bo'lib,  $\begin{cases} \frac{xy}{x-y} = -6 \\ \frac{yz}{z-y} = \frac{15}{2} \\ \frac{xz}{z-x} = \frac{10}{3} \end{cases}$  bo'lsa,  $x + y - z = ?$   
A) 0 B) 6 C) 4 D) -4
18.  $\log_2(x-1) - \log_2(x+1) + \log_{\frac{x+1}{x-1}} 2 > 0$  tengsizlikni yeching.  
A)  $x > 3$  B)  $x < 3$  C)  $x > 6$  D)  $x > 4$
19.  $y = 7\cos\sqrt{x}$  funksiyaning davrini aniqlang.  
A) davriy emas B)  $2\pi^2$  C)  $4\pi^2$  D)  $2\pi$
20.  $ABC$  uchburchak uchlaridan va shu uchburchakning medianalari kesishgan  $M$  nuqtadan  $\alpha$ -tekislikka tushirilgan perpendikularlar asoslari mos ravishda  $A_1, B_1, C_1, M_1$  nuqtalarda yotsa,  $AA_1 + BB_1 + CC_1$  va  $MM_1$  uzunliklari nisbatini toping.  
A)  $\frac{3}{2}$  B) 2 C) 1 D) 3



21. Muntazam yigirmaburchakning eng katta va eng kichik diagonallari orasidagi burchakni toping.  
A)  $80^\circ$  B)  $72^\circ$  C)  $82^\circ$  D)  $76^\circ$
22.  $2^{x^2+1} = 1 - x^8$  tenglamani yeching.  
A) *tenglama ildizga ega emas* B)  $-1$  C)  $1$   
D)  $2$
23. Ikki xonali son raqamlari kvadratlarining yig'indisi 13 ga teng. Agar undan 9 ni ayirsak, shu son raqamlarining teskari tartibda yozilgani kelib chiqsa, ikki xonali sonning raqamlari yig'indisini toping.  
A)  $6$  B)  $5$  C)  $7$  D)  $8$
24. Agar arifmetik progressiyada  $a_1 + a_2 + a_3 = 0$  va  $a_1^2 + a_2^2 + a_3^2 = 50$  bo'lsa, uning ayirmasini toping.  
A)  $4$  B)  $1$  C)  $2$  D)  $\pm 5$
25. 
$$\begin{cases} \sin(x - y) = 2 \sin x \sin y, \\ x + y = \frac{\pi}{2} \end{cases}$$
 sistemani yeching.  
A)  $\left(\frac{\pi}{8} + \pi k; \frac{5\pi}{8} + \pi k\right), k \in Z$   
B)  $\left(-\frac{\pi}{8} + \frac{\pi k}{2}; \frac{5\pi}{8} - \frac{\pi k}{2}\right), k \in Z$   
C)  $\left(-\frac{\pi}{8} + \pi k; \frac{5\pi}{8} - \pi k\right), k \in Z$   
D)  $\left(\frac{\pi}{8} + \frac{\pi k}{2}; \frac{5\pi}{8} + \frac{\pi k}{2}\right), k \in Z$
26. Ishorasi almashinuvchi geometrik progressiyaning birinchi hadi  $-2$  ga, uchinchi hadi  $-8$  ga teng bo'lsa, shu progressiyaning dastlabki 6 ta hadi yig'indisini toping.  
A)  $-42$  B)  $36$  C)  $42$  D)  $-36$
27.  $\frac{2^{3a+0.5} + \sqrt{2}}{4^a - 2^a + 1} \cdot (2^{a+0.5} - \sqrt{2}) - 2^{2a+1}$  ni hisoblang.  
A)  $2$  B)  $2\cos 7\pi$  C)  $-2^a$  D)  $4^a \sqrt{2}$
28.  $\sqrt[4]{3\sqrt{25}} \cdot \sqrt[6]{5^5}$  ni hisoblang.  
A)  $5 \sqrt[12]{5}$  B)  $\sqrt[3]{5}$  C)  $5$  D)  $5 \sqrt[6]{5}$
29.  $ABCD$  parallelogrammning  $A$  va  $B$  burchaklaridan chiquvchi bissektrisalar orasidagi burchakni toping.  
A)  $150^\circ$  B)  $90^\circ$  C)  $120^\circ$  D)  $40^\circ$
30.  $y = \frac{2}{\sqrt[4]{2x+5}}$  funksiyaning boshlang'ich funksiyasini toping.  
A)  $\frac{4}{3} \sqrt[4]{2x+5} + c$   
B)  $\frac{4}{3} \sqrt[4]{(2x+5)^3} + c$   
C)  $\frac{8}{3} \sqrt[4]{(2x+5)^3} + c$   
D)  $-\frac{4}{3} \sqrt[4]{(2x+5)^3} + c$
31. 3 terabayt axborotni baytlarda ifodalang.  
A)  $3^{40}$  bayt B)  $3 \cdot 2^{40}$  bayt C)  $6^{40}$  bayt  
D)  $2^{40}$  bayt
32. Sakkizlik sanoq sistemasidan ikkilik sanoq sistemasiga o'tkazishni bajaring:  $567_8 \rightarrow x_2$   
A)  $10110101_2$  B)  $101110111_2$  C)  $1111101_2$   
D)  $11101110_2$
33. Faylning xususiy nomi nechta belgidan iborat bo'lishi mumkin?  
A) 1 tadan 8 tagacha  
B) 1 tadan 64 tagacha  
C) operatsion sistema va dasturga bog'liq  
D) 1 tadan 255 tagacha
34. Ma'lumotlar ombori undagi axborot shakliga ko'ra qanday turlarga ajratiladi?  
A) *hujjatli va faktografik*  
B) *relyatsion va to'rli* C) *matnli va grafik*  
D) *raqamli va analog*
35. Biror Web-saytni ochish uchun quyidagilardan qaysi birini qo'llash mumkin?  
1) Web-brauzerning manzil satrida web-sayt nomi kiritiladi va Enter klavishi bosiladi. 2) Biror web-saytdan kerakli web-saytga o'tish belgisi tanlanadi. 3) MS Word dasturi matnida yozilgan kerakli web-sayt manzili tanlanadi.  
A) 1 B) 1, 2 C) 1, 3 D) 1, 2, 3
36. Dastur lavhasida X qaysi qiymatni qabul qiladi?  
VAR i,j,X: integer;  
BEGIN FOR i:=1 TO 2 DO;  
FOR j:=2 DOWNTO 1 DO X:=i+j; END.  
A) 3 B) 7 C) 4 D) 10

1. Dengizdagi to'liqin do'ngliklari orasidagi masofa 5 m. Katerning to'liqinga qarshi harakatiga 1 s da kater korpusiga 4 marta to'liqin urildi. To'liqin bilan bitta yo'nalishda harakatlanganda 2 marta urildi. Agar kater tezligi to'liqin tezligidan katta bo'lsa kater (m/s) va to'liqin (m/s) tezligini toping.  
A) 10; 5    B) 15; 5    C) 20; 10    D) 25; 5
2. Massasi 60 kg bo'lgan sirk artisti tortib qo'yilgan to'rga 10 m balandlikdan sakramoqda. Agar to'r 1 m egilsa, artist qanday o'rtacha kuch (N) bilan bosadi?  
A)  $0,6 \cdot 10^3$     B)  $12 \cdot 10^3$     C)  $6,6 \cdot 10^3$   
D)  $1,2 \cdot 10^4$
3. Qarshiliklari  $R_1=180 \Omega$  va  $R_2=360 \Omega$  bo'lgan ikkita chiroq  $U=120$  V kuchlanishli tarmoqqa parallel ulandi. Chiroqlarning har birida qanday quvvat ajraladi?  
A)  $P_1=80$  W;  $P_2=60$  W  
B)  $P_1=80$  W;  $P_2=40$  W  
C)  $P_1=60$  W;  $P_2=80$  W  
D)  $P_1=80$  W;  $P_2=50$  W
4. Temperaturaning pastki chegarasi absolut shkala bo'yicha nimaga teng (K)?  
A) -273    B) 0    C) 273    D) -100
5. Sig'imi 50 pF kondensatorni avval EYuK 3 V bo'lgan tok manbaiga, keyin induktivligi  $5,1 \mu\text{H}$  g'altakka ulandi. Konturdagi tok kuchining (mA) maksimal qiymati nimaga teng?  
A) 8,1    B) 10,9    C) 9,4    D) 13,0
6. Jismning impulsi 8 kg·m/s, kinetik energiyasi esa 16 J. Jismning tezligi (m/s) va massasini (kg) toping.  
A) 4; 2    B) 4; 4    C) 2; 2    D) 2; 4
7. Jism radiusi 2 m bo'lgan aylana bo'ylab 180 rad/min burchak tezlik bilan harakatlanmoqda. Agar uning massasi 6 kg bo'lsa, unga ta'sir qilayotgan markazga intilma kuchni (N) aniqlang.  
A) 64    B) 108    C) 27    D) 36
8. Massasi 50 kg bo'lgan bola Oy sirtida turibdi deylik. U Oyga qanday kuch (N) bilan tortiladi?  $g=1,6$  m/s<sup>2</sup>  
A) 16    B) 50    C) 500    D) 80
9. Qarshiligi  $5 \Omega$  bo'lgan o'tkazgichning ko'ndalang kesmidan 1,5 min davomida 45 C zaryad miqdori o'tdi. Shu o'tkazgichning uchlaridagi kuchlanishni (V) toping.  
A) 1    B) 2,5    C) 2    D) 5
10. Temperatura ortishi bilan yarimo'tkazgichning qarshiligi ...  
A) o'zgarmaydi    B) kamayadi    C) ortadi  
D) avval ortadi, keyin kamayadi
11. Bir xil massali va bir xil temperaturadagi karbonat angidrid va metan gazlarining zichliklari ham teng bo'lishi uchun bosimlari qanday nisbatda bo'lishi kerak?  
A) 1:3    B) 1:5    C) 1:2    D) 1:4
12. Balandligi 210 m bo'lgan sharsharadan tushayotgan suvning pastdagi temperaturasi sharshara boshidagi temperaturasidan qancha (°C) ortiq? Suvning solishtirma issiqlik sig'imi  $4200$  J/(kg·K). Mexanik energiya suvning isishi uchun sarf bo'ladi.  
A) 0,5    B) 2    C) 1,2    D) 1
13. Yorug'likning qutblanish darajasini va qutblanish tekisligining vaziyatini aniqlash uchun qaysi asbobdan foydalaniladi?  
A) fotometr    B) analizator    C) spektrometr  
D) spektrograf
14. 240 g kislorodni 100 K ga sovutilganda uning ichki energiyasi qanchaga (J) o'zgaradi?  
A)  $15,58 \cdot 10^3$     B)  $1558 \cdot 10^3$     C)  $1,558 \cdot 10^3$   
D)  $155,8 \cdot 10^3$
15. Tinch holatidan boshlab tekis tezlanuvchan harakat qilayotgan jismning 12-sekundda bosib o'tgan yo'li 4-sekundda bosib o'tgan yo'lidan necha marta farq qiladi?  
A) 9    B) 23/7    C) 23/9    D) 23/5
16. Prujinaning 4 mm cho'zish uchun 0,02 J ish bajarish kerak. Shu prujinaning 4 sm cho'zish uchun qancha ish (J) bajarish kerak?  
A) 2    B) 0,8    C) 8    D) 20
17. Buyumdan ekrangacha masofa 3 m. Buyumning 5 marta kattalashgan tasvirini olish uchun optik kuchi (dptr) qanday bo'lgan linzani olish va uni qayerda joylashtirish lozim (m)?  
A) 3; 0,5    B) 2,4; 2,5    C) 4,8; 0,5  
D) 2,4; 0,5

18. Yopiq idishga to'yingan bug' qamalgan bo'lib bosimi 10 kPa. Agar bosimni 2 marta oshirib, hajmini 2 marta kamaytirsak to'yingan suv bug'larining zichligi qanday o'zgaradi? Jarayon izotermik.

- A) o'zgarmaydi  
 B) haroratning qandayligicha bog'liq  
 C) 2 marta kamayadi  
 D) 2 marta oshadi

19. Tutash idishga simob ( $\rho_{sm}=13600 \text{ kg/m}^3$ ) quyildi, uning ustidan bitta idishga 20 sm balandlikda kerosin ( $\rho_k=800 \text{ kg/m}^3$ ) quyildi. Ikkinchisiga 48 sm balandlikda moy ( $\rho_m=900 \text{ kg/m}^3$ ) quyildi. Ikkala idishdagi simob sathlarining farqini (sm) aniqlang.

- A) 1,0 B) 2,0 C) 4,4 D) 4,0

20. 108 km/soat tezlik bilan ketayotgan 1 t li avtomobilni to'xtatish uchun qancha ish (kJ) bajarish kerak?

- A) -455 B) -445 C) -45 D) -450

21. Yorug'likka nisbatan shaffof moddadan yasalgan va qavariqlik radiusi 40 sm bo'lgan bir tomonlama qavariq linzaning optik kuchi +2 dptr. Linza tayyorlangan moddaning sindirish ko'rsatkichi qanday?

- A) 1,5 B) 1,8 C) 1,3 D) 1,13

22. Induksiya vektorining moduli 700 mT bo'lgan bir jinsli magnit maydonining kuch chiziqlariga  $30^\circ$  burchak ostida 2 km/s tezlik bilan uchib kirgan zaryadlangan zarrachaga maydon tomonidan ta'sir etuvchi kuchni (mN) toping. Zarrachaning zaryad miqdori  $2 \mu\text{C}$  ga teng.

- A) 1,4 B) 2,8 C) 1,2 D) 0,8

23. Yassi kondensatorning plastinkalariga yuqori chastotali o'zgaruvchan kuchlanish berilganda plastinkalar orasidan uchib o'tayotgan elektron qanday traektoriya chizadi?

- A) vintsimon B) parabola C) to'g'ri chiziq  
 D) sinusoida

24. Radiusi  $R$  bo'lgan shar yerda tinch turibdi. O'lchami sharning o'lchamidan ancha kichik jism sharning yuqorigi nuqtasidan tinch holatdan boshlab sirpanmoqda. Yer sirtidan qanday  $h$  balandlikda jism shardan ajraladi?

- A)  $h = 2,5R$  B)  $h = R/3$  C)  $h = 2R/3$   
 D)  $h = 5R/3$

25. Sanoq jismi ,unga bog'langan koordinatalar sistemasi va vaqt o'lchash asbobi ... deyiladi.

- A) sanoq jismi B) fazo C) koorinata boshi  
 D) sanoq sistemasi

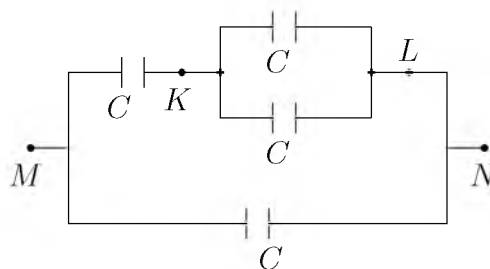
26. 3 kg massali 15 m/s tezlik bilan harakatlanayotgan aravacha unga qarama-qarshi yo'nalishda xuddi shunday tezlikda harakatlanayotgan 1 kg massali aravachaga urilib, unga yopishib qoldi. Ularning birgalikdagi tezligini (m/s) toping.

- A) 7,5 B) 5 C) 13,2 D) 15

27. Uzunligi 100 m ko'ndalang kesim yuzi  $0,5 \text{ mm}^2$  bo'lgan aluminiy ( $\rho_{Al}=0,028 \cdot 10^{-6} \text{ Om}\cdot\text{m}$ ) simning uchlaridagi kuchlanish 7 V. Shu simdan o'tayotgan tok kuchini (A) aniqlang.

- A) 2 B) 1,25 C) 1,5 D) 1

28. Rasmdagi har bir kondensatorning sig'imi  $C$  ga teng.  $M$  va  $N$  nuqtalar orasidagi potentsiallar farqi 120 V bo'lsa,  $K$  va  $L$  nuqtalar orasidagi potentsiallar farqini (V) toping.



- A) 30 B) 40 C) 60 D) 20

29.  $N = N_0 \cdot 2^{-t/T}$

Radioaktiv parchalanish qonunida  $N$  nimani bildiradi?

- A) majburiy parchalangan yadrolar sonini  
 B) radioaktiv parchalanmagan yadrolar sonini  
 C) tabiiy parchalangan yadrolar sonini  
 D) radioaktiv parchalangan yadrolar sonini

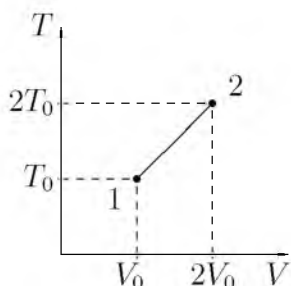
30. 220 V kuchlanishga mo'ljallangan 100 W li lampochka 110 V kuchlanishga ulansa, qanday quvvat (W) bilan yonadi?

- A) 45 B) 25 C) 30 D) 40

31. Bir jinsli elektr maydonida  $\alpha$ -zarrachasi kuchlanganlik vektorining yo'nalishi bo'ylab ko'chgan bo'lsa uning potentsial energiyasi qanday o'zgaradi?

- A) ortqdi B) avval ortib so'ngra kamayadi  
 C) kamayadi D) o'zgarmaydi

32. Zarraning impulsi  $p$ , energiyasi  $E$  bo'lsa, uning tezligi qanday?  
 A)  $v = p^3/2E$  B)  $v = c^2p/E$  C)  $v = E/2p$   
 D)  $v = c^2E/p$
33. Rasmda bir atomli ideal gaz 1 holatdan ikkinchi holatga o'tish jarayonida temperaturasini hajmga bog'lanishini grafigi tasvirlangan. Bu jarayonda gazning ichki energiyasi 45 kJ ga ortgan bo'lsa, gaz jami qancha issiqliq (kJ) qabul qilgan?



- A) 90 B) 75 C) 45 D) 0
34. Agar metall sirtlari 350 va 540 nm to'liq uzunlikli nurlanish bilan galma-gal yoritilsa, u holda fotoelektronlarning maksimal tezliklari bir-biridan 2 marta farq qiladi. Bu metallardan elektronlarning chiqish ishini (J) aniqlang.  $h=6,63 \cdot 10^{-34}$  J·s  
 A)  $30 \cdot 10^{-30}$  B)  $3 \cdot 10^{-19}$  C)  $30 \cdot 10^{-29}$   
 D)  $25 \cdot 10^{-29}$
35. Ko'ndalang kesim yuzi 60 sm<sup>2</sup> bo'lgan kontur ichidagi magnit oqimi 0,3 mWb ga teng. Kontur ichidagi maydon induksiyasini (mT) toping.  
 A) 200 B) 18 C) 0 D) 50
36. Chuqurligi 5 m bo'lgan ko'ldagi suvning bosimi necha (kPa) teng? Atmosfera bosimi  $p_0=10^5$  Pa.  
 A) 15 B) 5 C) 50 D) 150

### INGLIZ TILI

1. Choose the answer which correctly completes the sentence.  
 After declaring bankruptcy, the company was forced to ... its assets.  
 A) liquid B) liquefy C) lique D) liquidate
2. Choose the answer which correctly completes the sentence.  
 She never allowed herself to get depressed ... all her problems.  
 A) despite B) nevertheless C) as for D) whereas

3. Choose the answer which correctly complete the sentence.  
 A huge snowstorm has hit Toronto. Over 40 cm of snow fell over the past twelve hours. Residents ... advised to stay at home.  
 A) have been B) was C) have D) is
4. Choose the answer which correctly completes the sentence.  
 You will see nothing ... you use a microscope. It is the most interesting insect.  
 A) providing B) in case C) unless D) if
5. Choose the answer which correctly complete the sentence.  
 Neil Armstrong was the first man on ... Moon.  
 A) an B) a C) the D) -
6. Choose the answer which correctly completes the sentence.  
 she was reading quietly in her room when suddenly the light ... out and she heard a scream.  
 A) went B) go C) going D) had gone
7. Choose the answer which correctly complete the sentence.  
 They have promised to lend me a tennis racket so I ... take mine.  
 A) can't B) mustn't C) don't have to D) aren't
8. Choose the answer which correctly completes the sentence.  
 He needs to get his suit ... as he spilled some tomato sauce on it.  
 A) to clean B) cleaning C) cleaned D) clean
9. Choose the answer which correctly complete the sentence.  
 Nora, you look awfully tired. What ... all day?  
 A) do you do B) are you doing C) have you been doing D) have you done
10. Change the sentence into the Passive Voice.  
 His colleagues started to respect Tim.  
 A) Tim started to be respected by his colleagues.  
 B) Tim respected by colleagues.  
 C) Tim started to be respected by his colleagues.  
 D) Colleagues started to be respected.

11. Choose the answer which correctly complete the sentence.  
There was a long line in front of the theatre.  
We ... wait almost an hour to buy our tickets.  
A) *were able* B) *must* C) *need* D) *had to*
12. Choose the answer which correctly completes the sentence.  
Your friend can borrow my ... camera for the weekend.  
A) *fathers-in-law* B) *father-in-law's*  
C) *father-in-law* D) *father's-in-law*
13. Choose the answer which correctly completes the sentence.  
You should contact ... Mr. Abdullayev and clear up all the details.  
A) *for* B) *-* C) *to* D) *with*
14. Choose the answer which correctly completes the sentence.  
She would have recognised him if she ... him before.  
A) *had seen* B) *see* C) *saw* D) *would see*
15. Choose the answer which correctly completes the sentence.  
Mark and Susan met during their holiday in Sweden. It was love at ... first sight.  
A) *a* B) *the* C) *an* D) *-*
16. Choose the answer which correctly completes the sentence.  
Jack called me ... day; he said he was coming home the following week.  
A) *another* B) *the other* C) *any*  
D) *others*
17. Choose the answer which correctly complete the sentence.  
This car is the ... model and much better than the previous one.  
A) *later* B) *last* C) *latest* D) *latter*
18. Choose the answer which correctly completes the sentence.  
I'm starting a new job next week. I'm quite ... about it.  
A) *excitedly* B) *exciting* C) *excited*  
D) *excite*
19. Choose the answer which correctly completes the sentence.  
She went to the bank ... to get some money.  
A) *in case* B) *even though* C) *in order*  
D) *unless*
20. Choose the answer which correctly completes the sentence.  
Television should not become a replacement for good teachers, and ... computers.  
A) *neither should* B) *should either*  
C) *either should* D) *should neither*
21. Choose the answer which correctly completes the sentence.  
Be careful! You ... hit that car!  
A) *should* B) *are going to* C) *have*  
D) *would*
22. Choose the answer which correctly completes the sentence.  
"Why is the bus late?"  
Can you tell me why ... late.  
A) *the bus is* B) *is the bus* C) *was the bus*  
D) *the bus was*
23. Choose the answer which correctly completes the sentence.  
The receptionist put me ... to the manager's secretary.  
A) *off* B) *forward* C) *through* D) *with*
- Read the text. Then choose the correct answer to question 24-26.
- Mountains have always evoked awe and inspired artists and adventurers throughout human existence. More recent research has led to important new insights into how mountains, the most magnificent of the Earth's formations, came to be the way they are. Mountains are created and shaped, it now appears, not only by the movements of the vast tectonic plates that make up the Earth's exterior but also by factors such as climate and erosion. In particular, the interactions between tectonic, climatic and erosional processes exert strong control over the shape and maximum height of the mountains as well as the amount of time necessary to build - or destroy - a mountain range. Paradoxically, the shaping of mountains seems to depend as much on the destructive forces of erosion as on the constructive power of tectonics.

24. As it is stated in the passage, recent research has ...
- A) *enabled us to have better ideas about how mountains are shaped.*
- B) *created more questions about the way mountains were formed.*
- C) *demonstrated that tectonic plates move usually in one direction*
- D) *confirmed what we already knew about mountain formations.*
25. The movements of tectonic plates, the climate and erosion are factors ...
- A) *that collectively form the interior of the Earth.*
- B) *that help mountains reach great heights.*
- C) *responsible for all the interactions that occur on the Earth's exterior.*
- D) *that are effective in the shaping and creation of mountains.*
26. We can understand from the passage that the destructive forces of erosion and the constructive power of tectonics ...
- A) *take an equal amount of time to build a mountain.*
- B) *are not sufficient to build mountain ranges.*
- C) *both play an equal role in the formation of mountains.*
- D) *can create mountain ranges with different climates.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Johannes Brahms is a German composer, pianist, and conductor. His works (27) ... four symphonies, songs and concertos for piano and for violin. He (28) ... and conducted his own works.

- 27.
- A) *are included*    B) *include*    C) *will include*  
D) *includes*

- 28.
- A) *recognized*    B) *attempted*    C) *designed*  
D) *performed*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

One of the earliest methods of home heating, the fireplace continues (29) ... popular today. Ancient fireplaces were usually central pits in the house that also served as stoves, light sources, and (30) ... from wild animals. Modern fireplaces are sometimes valued more (31) ... their appearance than their actual heating capacities.

- 29.
- A) *was*    B) *been*    C) *to be*    D) *is*
- 30.
- A) *protection*    B) *challenge*    C) *benefit*  
D) *comfort*
- 31.
- A) *at*    B) *on*    C) *after*    D) *for*

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *The danger of two breeds of dolphins disappearing.*
  - B) *The breeding of small river dolphins.*
  - C) *Hydro-electric dam projects on the Yangtze river.*
  - D) *The danger of hunting for the Brazilian population.*
33. What does the number 10 in the text refer to?
- A) *Governmental organizations which fight the pollution of rivers.*
  - B) *The percentage of living Yangtze river dolphins.*
  - C) *Groups of biologist who are trying to repopulate dolphins.*
  - D) *The percentage of Amazonian dolphins which die out every year.*

Read the text. Then choose the correct answer to question 34-36.

In 1971 the Great Persian Empire celebrated the 1500 th anniversary of its founding.

Its founder was Cyrus the Great, who proclaimed himself the King of the Kings. His son Cambyses succeeded his throne, conquering Egypt and expanding the empire.

Darius I followed Cambyses and was probably the most famous of this long line of kings. Under his rule, the empire stretched as far as India.

Governors were placed in charge of the provinces. Extensive systems of roads and waterways improved communication throughout the kingdom. He was one of a few ancient rulers who permitted his subjects to worship as they wished. The magnificent city of Persepolis, founded under his direction in 518 B.C. was a ceremonial center.

34. Who is considered the creator of the Persian Empire?
- A) *Combyses*    B) *Persepolis*    C) *Darius I*
  - D) *Cyrus*
35. Who was the predecessor of Cambyses?
- A) *Cyrus*    B) *Egypt*    C) *Persepolis*
  - D) *Darius I*
36. Who were responsible for the provinces?
- A) *the King*    B) *the governors*
  - C) *the Egyptians*    D) *the subjects*

O‘ZBEKISTON RESPUBLIKASI VAZIRLAR MAHKAMASI  
DAVLAT TEST MARKAZI

REPITISION TEST TOPSHIRUVCHILAR UCHUN

## SAVOLLAR KITOBI

ABITURIYENT: \_\_\_\_\_ F.I.O. \_\_\_\_\_ Imzo \_\_\_\_\_

### ABITURIYENT DIQQATIGA!

Test topshiriqlarini yechishdan avval savollar kitobini varaqlab, unda har bir fan bo‘yicha 36 ta savol mavjudligini tekshiring. Agar savollar soni kamligi aniqlansa yoki savollar savollar kitobi raqami bilan javoblar varag‘i raqami bir xil bo‘lmasa, darhol auditoriya rahbariga ma’lum qiling.

**Savollar kitobida abituriyentning familiyasi, ismi, otasining ismi xato to‘ldirilgan yoki to‘ldirilmagan, va imzosi qo‘yilmagan hollarda e’tirozi ko‘rib chiqilmaydi.**

Kitob tipi: **55 (636624)**

### FANLAR:

*Blok 1: Matematika (informatika bilan)*

*Blok 2: Fizika*

*Blok 3: Ingliz tili*

Savollar kitobi raqami: **1000060**

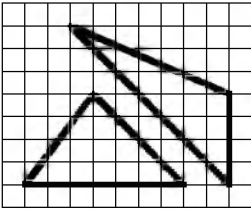
Toshkent – 2014



### MATEMATIKA (INFORMATIKA BILAN)

1. Yon sirti  $60\pi$  ga, balandligi 2 ga teng silindr asosining diametrini toping.  
A) 15 B) 10 C) 30 D) 20

2. Rasmda qanday uchburchaklar tasvirlangan?



- A) tengdosh  
B) yuzalari har xil  
C) uchburchaklardan biri to'g'ri burchakli  
D) perimetrlari bir xil

3.  $x^2 + 2\sqrt{x^2 + 6x + 13} = -6x - 5$  tenglama ildizlarining yig'indisini toping.  
A) -3 B) -13 C) -2 D) -6

4.  $\frac{\left(\frac{1}{a} + \frac{1}{b} - \frac{2c}{ab}\right)(a + b + 2c)}{\frac{1}{a^2} + \frac{1}{b^2} + \frac{2}{ab} - \frac{4c^2}{a^2b^2}}$  ifodani soddalashtiring va uning son qiymatini toping.  
 $a=7,4; b = \frac{5}{37}$ .

- A)  $\frac{1}{2}$  B) 0 C) 1 D)  $\frac{4}{5}$
5. Asosi  $a$ , perimetri 42 bo'lgan to'g'ri to'rtburchakning yuzini hisoblash uchun ifoda tuzing.  
A)  $S = a^2 - 21$  B)  $S = a(21 - a)$   
C)  $S = ax$  D)  $S = a(a - 21)$
6.  $f(x + 1) = x \cdot f(x) + 4, f(2) = ?$   
A) 8 B) 6 C) 0 D) 16
7. Ishchi birinchi kuni o'ziga topshirilgan butun bir ishning yarmini, ikkinchi kuni qolgan ishning yarmini, uchinchi kuni qolgan ishning yarmini bajardi. U ishni tugatishi uchun to'rtinchi kuni butun ishning qancha qismini bajarishi kerak?  
A)  $\frac{1}{4}$  B)  $\frac{1}{16}$  C)  $\frac{1}{8}$  D)  $\frac{1}{2}$

8.  $M$  nuqta  $ABC$  uchburchakning og'irlik markazi. Shu uchburchak tekisligidan 7 sm uzoqlikda  $O$  nuqta olingan.  $\overline{OA} + \overline{OB} + \overline{OC}$  vektor bilan  $\overline{OM}$  vektor uzunliklari nisbatini toping.  
A) 1 B) 3 C) 2 D) 4

9.  $|(x + 3)(x + 1) + 1| \leq 0$  tengsizlikni yeching.  
A)  $\emptyset$  B) -2 C) 2 D) 0

10.  $2^{x^2-16} \leq 1$  tengsizlikni yeching.  
A)  $[0; 4]$  B)  $[-4; 4]$  C)  $(-2; 2)$   
D)  $(0; 2)$

11.  $\frac{\sin 1^\circ \cdot \sin 2^\circ \cdot \sin 3^\circ \cdot \dots \cdot \sin 90^\circ}{\sin 91^\circ \cdot \sin 92^\circ \cdot \sin 93^\circ \cdot \dots \cdot \sin 179^\circ}$  ni hisoblang.

- A)  $\frac{\pi}{2}$  B) 2 C)  $\frac{\sqrt{2}}{2}$  D) 1

12.  $\vec{a}(1; -2; 2)$  va  $\vec{b}(2; -2; -1)$  vektorlar berilgan bo'lsa,  $2\vec{a}^2 - 4(\vec{a}\vec{b}) + 5\vec{b}^2$  ifodaning qiymatni toping.  
A) 46 B) 47 C) 44 D) 45

13. 2, 6, 10, ..., 102 sonlarining o'rta arifmetik qiymatini toping.  
A) 62 B) 42 C) 52 D) 60

14. Aylanaga tashqi chizilgan muntazam oltiburchakning tomoni  $4\sqrt{2}$  bo'lsa, aylanaga ichki chizilgan kvadratning yuzini hisoblang.  
A) 64 B) 52 C) 50 D) 48

15.  $f(x) = \frac{1}{\sin^2 x} + x^2, F(x) = ?$   
A)  $-ctgx + \frac{x^3}{3} + c$  B)  $ctgx + 2x^2 + c$   
C)  $ctgx + 2x + c$  D)  $ctgx + \frac{2x^2}{3} + c$

16. Agar arifmetik progressiyada  $s_{2n} = 2013, S_{3n} = 2001$  bo'lsa,  $S_n$  ni toping.  
A) 1354 B) 1344 C) 1346 D) 1350

17. Cheksiz kamayuvchi geometrik progressiyaning ikkinchi hadi beshinchi hadidan 8 marta katta. Agar bu geometrik progressiya hadlari yig'indisi 6 ga teng bo'lsa, uning birinchi hadini toping.  
A) 3 B) 4 C) 2 D) 6

18. Muntazam ko'pburchakning tomoni  $a$  ga, unga tashqi chizilgan aylana radiusi esa  $R$  ga teng bo'lsa, ichki chizilgan aylana radiusini toping.

- A)  $\sqrt{R^2 - \frac{a^2}{4}}$   
 B)  $\frac{2aR}{\sqrt{4R^2 + a^2}}$   
 C)  $\frac{2aR}{\sqrt{4R^2 - a^2}}$   
 D)  $\sqrt{R^2 + \frac{a^2}{4}}$

19.  $\frac{8-n}{2+\sqrt[3]{n}} : \left(2 + \frac{\sqrt[3]{n^2}}{2+\sqrt[3]{n}}\right) - \left(\sqrt[3]{n} + \frac{2\sqrt[3]{n}}{\sqrt[3]{n}-2}\right) \cdot \frac{4-\sqrt[3]{n^2}}{\sqrt[3]{n^2}+2\sqrt[3]{n}}$  ifodani soddalashtiring. ( $n \neq \pm 8$ )

- A)  $\frac{1}{n}$  B) 0 C) 1 D) 2

20.  $y = \arcsin \frac{x-3}{2} - \lg(4-x)$  funksiyaning aniqlanish sohasini toping.

- A) [1; 4) B) [1; 5] C) (1; 4) D) [1; 4]

21.  $y = \sqrt{x^2 - 6x + 9} + \sqrt{x^2 + 8x + 16}$  funksiyaning qiymatlar sohasi topilsin.

- A) [7;  $\infty$ ) B) ( $-\infty$ ;  $\infty$ ) C) [0;  $\infty$ )  
 D) [1;  $\infty$ )

22. Idish to'g'ri burchakli parallelepiped shaklida bo'lib, uning bo'yi 60 sm, eni 45 sm va balandligi 47 sm ga teng. Agar idishdagi suv sathi 40 sm balandlikda bo'lsa, unda necha litr suv bor?

- A) 106 B) 135 C) 108 D) 115

23. Aylananing uzunligi shu aylananing  $40^\circ$  li yoyi uzunligidan necha foiz ko'p?

- A) 700 B) 900 C) 600 D) 800

24. Agar  $xy + yz + zx = 16$  bo'lsa,  $x^2 + y^2 + z^2$  ifoda teng bo'lishi mumkin bo'lgan eng kichik qiymatni toping.

- A) 16 B) 8 C) 32 D) 48

25. Dastlabki o'nta hadining yig'indisi 55 ga teng bo'lgan arifmetik progressiyaning o'ninchi hadi 19 ga teng bo'lsa, uning ayirmasini toping.

- A) 2 B) -3 C) -2 D) 3

26.  $f(x+5) = x \cdot f(x) + 4$  bo'lsa,  $f(10)$  ni toping.

- A) 23 B) 24 C) 25 D) 30

27.  $f(x) = \sqrt{2}\sin x - 2x$ ,  $f'(x) = ?$

- A)  $-\sqrt{2}\cos^2 x - 2$  B)  $-\cos x - 2$   
 C)  $\sqrt{2}\cos x - 2$  D)  $\cos x + 2$

28. Kubga tashqi chizilgan sharning hajmi  $\frac{32}{3}\pi$  ga teng. Kubning diagonaliga tegishli bo'lmagan uchlaridan diagonalgacha bo'lgan masofani toping.

- A)  $\frac{4\sqrt{2}}{\sqrt{3}}$   
 B)  $\frac{4\sqrt{2}}{9}$   
 C)  $\frac{3\sqrt{2}}{4}$   
 D)  $\frac{3\sqrt{3}}{8}$

29. Aylananing ikkita kesishuvchi vatarlaridan birining uzunligi 36 sm, ikkinchisi kesishish nuqtasida 18 sm va 16 sm li kesmalarga ajraladi. Birinchi vatarning kesmalarini aniqlang.

- A) 16 va 20 B) 17 va 19 C) 22 va 14  
 D) 12 va 24

30.  $(x^3 + 4x^2 + 4x) \cdot \sqrt{25 - x^2} \geq 0$  tengsizlikning butun sonlardan iborat yechimlari yig'indisini toping.

- A) 12 B) 10 C) 6 D) 8

31. "Mantiq insonga shunday bir qoida beradiki, bu qoida yordamida xulosa chiqarishda xatolardan saqlanadi". Ushbu fikr kimga tegishli?

- A) Abu Nasr Farobiy B) Alisher Navoiy  
 C) Kamoliddin Behzod D) Abu Ali Ibn Sino

32. Tashkil etuvchi barcha sodda mulohazalar rost bo'lganda quyidagilardan qaysi birining natijasi rost bo'ladi?

- A)  $(A \vee \neg B) \wedge \neg(C \vee D)$   
 B)  $A \wedge \neg B \vee C \wedge \neg D$   
 C)  $A \vee B \wedge \neg C \vee \neg D$   
 D)  $\neg A \vee (B \vee C) \wedge \neg D$

33. Nomi S harfidan boshlanuvchi va faqat to'rtta belgidan iborat ixtiyoriy kengaytmali fayllar qanday belgilanadi?  
A) S\* \*.\* B) S???.\* C) S???.\* D) S\*.\*
34. MS Excel 2003 da AA21 katakchadagi "=-КОРЕНЬ(СТЕПЕНЬ(625;2))" formula natijasini aniqlang.  
A) 625 B) 390625 C) 25 D) 5
35. Axborot uzatish jarayonida quyidagi qismlardan qaysi biri bo'lishi shart?  
1) Axborot qabul qiluvchi 2) Axborot manbai  
3) Axborot uzatish vositasi  
A) 1, 2, 3 B) 1 C) 1, 2 D) 1, 3
36. Paskal dasturi lavhasidagi hisob natijasini aniqlang.  
begin a:=12; b:=14; c:=10; if(a>b) or (b>c)  
then y:=a+b-c else y:=a-b+c; writeln(y); end.  
A) 8 B) 6 C) 16 D) 14

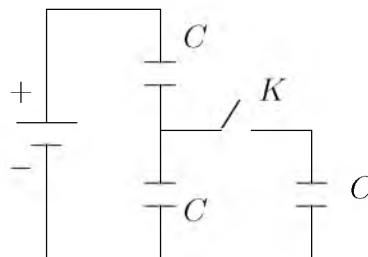
### FIZIKA

1. Buyum sochuvchi linzadan  $d = 4F$  masofada joylashgan. Tasvir linzadan qancha masofada joylashgan?  
A)  $0,8F$  B)  $0,6F$  C)  $0,4F$  D)  $0,5F$
2. Qanday jarayonda gazga berilgan issiqlikning hammasi mexanik ishga aylanadi?  
A) *izotermik* B) *izoxorik* C) *izobarik*  
D) *adiabatik*
3. G'altakning o'lchamlarini uning induktivligi 2 marta ortadigan qilib o'zgartirildi. G'altakdan o'tayotgan tokni 2 marta kamaytirildi. G'altakning magnit maydon energiyasi qanday o'zgaradi?  
A) 2 marta ortadi B) 2 marta kamayadi  
C) o'zgarmaydi D) 4 marta ortadi
4. Muz ustida turgan konkichi 5 m/s tezlik bilan 10 kg massali toshni gorizontalga  $30^\circ$  burchak ostida uloqtiradi. Agar konkichining massasi 64 kg bo'lsa, uning harakatdagi boshlang'ich tezligi (m/s) qanday bo'ladi?  
A) 0,68 B) 0,168 C) 0,36 D) 0,136
5. Qizil yorug'lik nuri ( $\lambda = 700$  nm) va rentgen nuri ( $\lambda = 10^{-10}$  m) ning energiyalari nisbati  $\frac{E_c}{E_r}$  qanchaga teng?  
A)  $1,4 \cdot 10^{-3}$  B)  $7 \cdot 10^{-5}$  C)  $1,4 \cdot 10^{-4}$   
D)  $7 \cdot 10^{-4}$
6. Matematik mayatnik 3 s da 2 marta tebranmoqda. Mayatnik ipining uzunligini (sm) toping.  $g = 10$  m/s<sup>2</sup>,  $\pi = 3,14$   
A) 55 B) 57 C) 50 D) 6
7. Gaz boshlang'ich 6 l hajmdan 4 l gacha izotermik siqilgan. Bunda uning bosimi  $2 \cdot 10^5$  N/m<sup>2</sup> ga ortgan. Gazning boshlang'ich bosimi (N/m<sup>2</sup>) qanday?  
A)  $4 \cdot 10^5$  B)  $20 \cdot 10^5$  C)  $2 \cdot 10^5$  D)  $4 \cdot 10^6$
8. Moddiy nuqtaning harakati  $x = 20 + 4t$  qonuniyat bo'yicha ro'y bermoqda. Agar moddiy nuqtaning massasi 14 kg bo'lsa, uning impulsi (kg·m/s) nimaga teng?  
A) 26 B) 28 C) 56 D) 50
9. Agar ionlagichning ishlashini o'zgartirmay turib plastinkalar yaqinlashtirilsa, to'yinish tokining kuchi qanday o'zgaradi?  
A) o'zgarmaydi  
B) ortadi  
C) ortishi ham, kamayishi ham mumkin  
D) kamayadi
10. Elektr sig'imlari  $C_1 = C_2 = 2 \mu\text{F}$  bo'lgan va o'zaro parallel ulangan kondensatorlar  $C_3 = 4 \mu\text{F}$  sig'imli kondensatorga ketma-ket ulanib, kondensatorlar bateriyasi hosil qilindi va zanjir 4 V kuchlanishga ega bo'lgan o'zgarmas tok manbaiga ulandi. Uchinchi kondensator olgan elektr maydon energiyasini ( $\mu\text{J}$ ) toping.  
A) 16 B) 8 C) 24 D) 12
11. Bikrligi 250 N/m bo'lgan prujinaga bog'lab qo'yilganda 16 s ichida 20 marta tebradigan yukning massasini (kg) toping.  $\pi^2 = 10$   
A) 0,4 B) 16 C) 4 D) 1,6
12. Massasi va boshlang'ich temperaturasi bir xil bo'lgan vodorod va geliy gazlari 70 K ga qizdirildi. Vodorodni qizdirishda bajarilgan ish  $A_1$  va geliy qizdirishda bajarilgan ish  $A_2$  lar qanday munosabatda bo'ladi? ( $P = \text{const}$ )  
A)  $A_2 = 2A_1$  B)  $A_1 = 2A_2$  C)  $A_1 = A_2$   
D)  $A_2 = 4A_1$

13. Agar qavariq linza yordamida buyumning haqiqiy, teskari kichiklashgan tasviri hosil qilinayotgan bo'lsa, buyum qayerda joylashgan?  
 A) ikkilangan fokus masofadan uzoqda  
 B) fokus nuqta va optik markaz orasida  
 C) fokus masofa bilan ikkilangan fokus masofa orasida  
 D) ikkilangan fokus masofada
14. Malus qonuni ifodalovchi formulani ko'rsating.  
 A)  $I = I_0 \sin \alpha$  B)  $I = I_0 \cos \alpha$   
 C)  $I = I_0 \cos^2 \alpha$  D)  $I = I_0 + I \cos \alpha$
15. Tebranish konturidagi tok kuchining vaqt bo'yicha o'zgarish tenglamasi quyidagi ko'rinishda berilgan  $I = 0,02 \sin 400\pi t$  (A). Konturning induktivligi 1 H ga teng. Kondensator qoplamalaridagi maksimal potentsiallar farqini (V), magnit va elektr maydonlarning maksimal energiyasini (J) toping.  
 A) 26;  $9 \cdot 10^{-4}$  B) 24;  $3 \cdot 10^{-4}$  C) 25,1;  $2 \cdot 10^{-4}$   
 D) 23;  $7 \cdot 10^{-4}$
16. Induktivligi 0,1 H bo'lgan o'tkazgichdan o'tayotgan tok kuchi 1 A bo'lsa, magnit maydon energiyasini (mJ) toping.  
 A) 100 B) 75 C) 25 D) 50
17. Tutash idishlarda balandligi 10,35 sm bo'lgan suv ustuni, balandligi 11,5 sm bo'lgan mineral moy ustuni bilan muvozanatlashib turgan bo'lsa, shu moyning zichligini ( $\text{g}/\text{sm}^3$ ) aniqlang.  
 A) 0,7 B) 1 C) 0,9 D) 0,8
18. 400 K temperaturada bosim 16,62 kPa dan oshmasligi uchun 4 mol gaz saqlanadigan idishning sig'imi ( $\text{m}^3$ ) qancha bo'lishi kerak?  
 A) 1,2 B) 1 C) 0,8 D) 2,1
19. Massasi 350 kg bo'lgan chelak tekis tezlanuvchan harakat bilan quduqqa tushirilmoqda. Birinchi 10 s da u 35 m tushadi. Chelak osilgan arqonning taranglik kuchini (N) toping.  $g=9,8 \text{ m}/\text{s}^2$   
 A) 3330 B) 3300 C) 3250 D) 3200
20. 5 kg massali yuk qiya tekislikdan 20 N kuch ta'sirida ko'tarildi. Qiya tekislikning uzunligi 10 m, balandligi 3 m. Qiya tekislikning foydali ish koeffitsienti (%) nimaga teng?  
 A) 90 B) 50 C) 60 D) 75

21. Induktivligi  $400 \mu\text{H}$  bo'lgan g'altak 400 kHz chastotali tarmoqqa ulangan. G'altakning reaktiv qarshiligini ( $\text{k}\Omega$ ) toping.  
 A) 3 B) 1 C) 2,5 D) 2

22. Quyidagi sxema bo'yicha K kalit ochiq paytidagi  $q$  zaryad kalit yopilgandan keyin nimaga teng bo'ladi? Ikkala holda ham kuchlanish o'zgarmas deb hisoblang.



- A)  $4q$  B)  $3q/4$  C)  $4q/3$  D)  $3q$
23. 3 m/s boshlang'ich tezlik va  $4 \text{ m}/\text{s}^2$  tezlanish bilan harakatlanayotgan jismning 4-sekunddagi ko'chishining modulini (m) toping.  
 A) 15 B) 17 C) 14 D) 16
24. Yadrosi 4 ta proton va 5 ta neytrondan tashkil topgan neytral atomda nechta elektron bor?  
 A) 4 B) 5 C) 9 D) 1
25. 20 g massali o'q 600 m/s tezlik bilan devorga kelib urildi. Agar devorning 4 sm gacha kirib borgan bo'lsa, devor qarshilik kuchi bajargan ishni (kJ) toping. O'qning oxirgi tezligi nolga teng.  
 A) 3,6 B) 36 C) 7,2 D) 72
26. Temperaturasi  $27^\circ\text{C}$  bo'lgan ideal gazning hajmi 10 l edi.  $P = \text{const}$  sharoitda uning  $327^\circ\text{C}$  gacha isitilgandagi hajmi (l) qancha bo'ladi?  
 A) 20 B) 23,6 C) 11,8 D) 30
27. Qarshiligi  $5 \Omega$  bo'lgan o'tkazgichning ko'ndalang kesmidan 1,5 min davomida 45 C zaryad miqdori o'tdi. Shu o'tkazgichning uchlaridagi kuchlanishni (V) toping.  
 A) 5 B) 1 C) 2 D) 2,5
28. Silindrik idishga bir xil massali suv ( $\rho_{\text{suv}}=1 \cdot 10^3 \text{ kg}/\text{m}^3$ ) va simob ( $\rho_{\text{sim}}=13,6 \cdot 10^3 \text{ kg}/\text{m}^3$ ) qo'yildi. Idishdagi suyuqliklar ustunining umumiy balandligi 143 sm. Idish tubiga bo'lgan bosim qancha (kPa)?  
 A) 26 B) 15,4 C) 10 D) 14,6

29. Qarshiliklari  $R_1=20 \Omega$  va  $R_2=10 \Omega$  bo'lgan o'tkazgichlar o'zaro parallel ulangan holda elektr tarmog'iga ulandi. Tarmoqdagi tok kuchi 300 mA ga teng bo'lsa, birinchi o'tkazgichda 1 minut ichida qancha issiqlik miqdori (J) ajralib chiqadi?  
A) 15 B) 36 C) 24 D) 12
30. 72 km/h tezlikda harakatlanayotgan poyezd dvigateli o'chirilsa, qancha masofa (m) yo'l o'tib to'xtaydi? Ishqalanish koeffitsienti  $\mu=0,02$ .  
A) 1000 B) 1440 C) 720 D) 500
31. Temperaturaning pastki chegarasi absolut shkala bo'yicha nimaga teng (K)?  
A) 273 B) -100 C) 0 D) -273
32. Neft quduqdan diametri 60 mm bo'lgan quvur orqali ko'tariladi. Har soatda 9,12 t neft ko'tarilayotgan bo'lsa, neftning oqish tezligini (m/s) toping. Neftning zichligi  $800 \text{ kg/m}^3$ .  
A) 1,12 B) 5 C) 1,8 D) 1,2
33. O'zgarimas tok manbaiga avval  $9 \Omega$  qarshilik so'ngra  $4 \Omega$  qarshilik ulandi. Har ikkala holda birday vaqt ichida qarshiliklarda bir xil miqdorda issiqlik ajraladi. Manbaning ichki qarshiligini ( $\Omega$ ) aniqlang.  
A) 36 B) 6 C)  $\sqrt{6}$  D) 3
34. Mashina birinchi 10 minutda 500 m yo'l bosdi. U shu tezlik bilan 0,5 soatda qancha yo'l (m) o'tadi?  
A) 1667 B) 1500 C) 3000 D) 166,6
35.  $0,6c$  tezlik bilan harakatlanayotgan zarraning massasi tinchlikdagi massasiga qaraganda qanchaga ortgan? Zarraning tinchlikdagi massasi  $m_0$ .  
A)  $0,25m_0$  B)  $1,6m_0$  C)  $0,8m_0$  D)  $1,25m_0$
36. Qarshiligi  $40 \Omega$  bo'lgan o'tkazgichdan 4 minut vaqt ichida 360 C zaryad o'tgan. O'tkazgich uchlaridagi kuchlanishni (V) toping.  
A) 40 B) 86 C) 60 D) 90
2. Choose the answer which correctly completes the sentence.  
That's the man ... wife is a doctor.  
A) whose B) whom C) which D) who
3. Choose the answer which correctly completes the sentence.  
In Britain you ... drive a car when you're 17.  
A) must B) need C) can D) have to
4. Choose the answer which correctly complete the sentence.  
Tomorrow at 6 p.m they will be out They will be ... at the party.  
A) presents B) presenting C) present D) presented
5. Choose the answer which correctly completes the sentence.  
He tried to phone his friend four days ago with no success. Since then he ... him five times.  
A) is phoning B) phoned C) phone D) has phoned
6. Choose the answer which correctly complete the sentence.  
In September, 2000, the people of Denmark voted "no" to joining the single European currency ... euro.  
A) - B) an C) the D) a
7. Choose the answer which correctly completes the sentence.  
It was lovely and ... in the swimming pool so he dived straight in.  
A) warmth B) warmed C) warm D) warmly
8. Choose the answer which correctly completes the sentence.  
The historical places ... last year.  
A) were visiting B) are visited C) were visited D) visit
9. Choose the answer which correctly completes the sentence.  
Our guests didn't leave until 2 a.m., so they ... have enjoyed themselves.  
A) can't B) must C) ought D) should

### INGLIZ TILI

1. Choose the answer which correctly completes the sentence.  
I selected a DVD ... random and put it in the DVD player.  
A) for B) at C) on D) to

10. Choose the answer which correctly completes the sentence.  
"I am the fastest of all."  
Simon ... of being the fastest of all.  
A) *boasted* B) *promised* C) *insisted*  
D) *admitted*
11. Choose the answer which correctly complete the sentence.  
Staying in a hotel costs ... renting a room in a dormitory for a week.  
A) *twice as much as* B) *twice more than*  
C) *twice more as* D) *as much twice as*
12. Choose the answer which correctly complete the sentence.  
I wish she ... to the theatre with us last Friday.  
A) *would come* B) *came*  
C) *could have come* D) *will come*
13. Choose the answer which correctly completes the sentence.  
I taught him how ... chess.  
A) *played* B) *to play* C) *play* D) *playing*
14. Choose the answer which correctly completes the sentence.  
Be careful! You ... hit that car!  
A) *have* B) *would* C) *are going to*  
D) *should*
15. Choose the answer which correctly complete the sentence.  
I tasted the soup ... because it was hot.  
A) *caring* B) *carefully* C) *careful*  
D) *cared*
16. Choose the answer which correctly completes the sentence.  
Last week I was held up ... 3 hours because of the traffic.  
A) *while* B) *since* C) *during* D) *for*
17. Choose the answer which correctly completes the sentence.  
"She said she had met my friend two weeks before". "... she?"  
A) *Didn't* B) *Hadn't* C) *Did* D) *Has*
18. Choose the answer which correctly complete the sentence.  
We usually have ... breakfast at 8 o'clock.  
A) - B) *an* C) *the* D) *a*
19. Choose the answer which correctly completes the sentence.  
They can't leave the table until they ... their lunch.  
A) *will finish* B) *have finished* C) *finished*  
D) *are going to finish*
20. Choose the answer which correctly completes the sentence.  
If these stockings are neither ... nor my sister's, they must be mine.  
A) *she* B) *he* C) *hers* D) *him*
21. Choose the answer which correctly complete the sentence.  
After the president of the company had made decision, his resignation ... announced yesterday on television.  
A) *was* B) - C) *have been* D) *has*
22. Choose the answer which correctly completes the sentence.  
I daren't ... my boss for a rise just now.  
A) *ask* B) *be asking* C) *asking* D) *to ask*
23. Choose the answer which correctly completes the sentence.  
Geese are not the same ... ducks. Geese are usually larger and have longer necks.  
A) *so* B) *as* C) *such* D) *like*
- Read the text. Then choose the correct answer to question 24-26.
- Sleep researchers have found that people can make themselves wake up at a given time simply by deciding to do so before they go to sleep. Scientists took two groups of volunteers and, at nightfall, told one group that they would be woken at 6 a.m. and the other that they would be woken at 9 a.m. The sleepers' levels of the hormone adrenocorticotropin, which is known to cause spontaneous awakening, were then measured. In each group, there was a rise in the levels of the hormone one hour before the volunteers expected to get up. The three-hour difference between the rise in hormones in the two groups suggests that the body can be programmed to wake up on command.

24. The people studied by the researchers ...
- A) *were unable to wake up by other means.*
  - B) *participated in the experiment at their own will.*
  - C) *were having difficulty getting up early.*
  - D) *suffered from insomnia.*

25. It seems that adrenocorticotropin ...
- A) *exists in higher levels in people who wake up very early*
  - B) *is used by doctors for people who have difficulty getting up*
  - C) *is produced by the body some time before a person wakes up*
  - D) *is responsible for causing sleeplessness in a number of people*

26. The experiment related in the passage has indicated that ...
- A) *the hormones that wake people up have a three -hour long cycle.*
  - B) *our bodies are capable of being conditioned to wake up at a suggested hour.*
  - C) *people who wake up at 6 a.m. have more hormones than 9 a.m. risers.*
  - D) *hormones are more effective than outside stimuli for waking people.*

Read the text. Then choose the correct answer for the gaps 27-28 in the text.

Johannes Brahms is a German composer, pianist, and conductor. His works (27) ... four symphonies, songs and concertos for piano and for violin. He (28) ... and conducted his own works.

- 27.
- A) *include*    B) *will include*    C) *includes*
  - D) *are included*

- 28.
- A) *recognized*    B) *designed*    C) *performed*
  - D) *attempted*

Read the text. Then choose the correct answer for the gaps 29-31 in the text.

Consumers are creatures of habit: they buy the same products time and time again, and such is their (29)... with big brands, and the colours and logos that represent them, that they can register a brand they like with barely any conscious thought process. The packaging of consumer products (30)... therefore crucial vehicle for delivering the brand and the product (31)... our shopping baskets.

- 29.
- A) *familiarity*    B) *familiar*    C) *familiarly*
  - D) *familiarize*

- 30.
- A) *is*    B) *have been*    C) *are*    D) *will be*

- 31.
- A) *with*    B) *of*    C) *towards*    D) *into*

Read the text. Then choose the correct answer to questions 32-33.

The Yangtze river dolphin has been declared "functionally extinct". This means that although there may be some of them left, there aren't enough to repopulate the species. The reason behind this tragedy is a combination of water pollution and hydro-electric dam projects. Hydro-electric dams are harmful because they isolate groups of dolphins, creating smaller populations. This means that numbers are lower, and breeding is less likely.

Now there are fears for the future of another breed of dolphin, the Amazonian pink river dolphin. The Brazilian government are planning a hydro-electric plant in the middle of their habitat. Hunting also threatens the animals. They're still widespread compared to other species, but there is a sharp decline in numbers - roughly 10% per year. "The number is worrying", said Vera da Silva, a biologist at the National Institute of Amazonian Research.

32. What is the text about?
- A) *Hydro-electric dam projects on the Yangtze river.*
  - B) *The danger of hunting for the Brazilian population.*
  - C) *The danger of two breeds of dolphins disappearing.*
  - D) *The breeding of small river dolphins.*
33. What does the number 10 in the text refer to?
- A) *The percentage of living Yangtze river dolphins.*
  - B) *Groups of biologist who are trying to repopulate dolphins.*
  - C) *The percentage of Amazonian dolphins which die out every year.*
  - D) *Governmental organizations which fight the pollution of rivers.*

Read the text. Then choose the correct answer to question 34-36.

In 1971 the Great Persian Empire celebrated the 1500 th anniversary of its founding.

Its founder was Cyrus the Great, who proclaimed himself the King of the Kings. His son Cambyses succeeded his throne, conquering Egypt and expanding the empire.

Darius I followed Cambyses and was probably the most famous of this long line of kings. Under his rule, the empire stretched as far as India.

Governors were placed in charge of the provinces. Extensive systems of roads and waterways improved communication throughout the kingdom. He was one of a few ancient rulers who permitted his subjects to worship as they wished. The magnificent city of Persepolis, founded under his direction in 518 B.C. was a ceremonial center.

34. Who is considered the creator of the Persian Empire?
- A) *Cyrus*    B) *Combyses*    C) *Persepolis*
  - D) *Darius I*
35. Who was the predecessor of Cambyses?
- A) *Persepolis*    B) *Egypt*    C) *Cyrus*
  - D) *Darius I*
36. Who were responsible for the provinces?
- A) *the King*    B) *the governors*
  - C) *the Egyptians*    D) *the subjects*