

TEXT 1

Read the text below about earthquakes in California region, than find the right answer from the four options of the multiple choice test. There is only one good answer.

California may be in danger of losing its major cities. Several along the coast were built upon a dangerous section of fault line known for ferocity and speed. Some faults can send earthquakes zooming along the ground faster than the speed of sound, scientists say—and California's San Andreas Fault may be one of them. Most earthquake faults "unzip" at around 3 kilometers a second. But evidence is growing that some faults can send quakes zooming much faster—up to 6 kilometers a second. "They are moving faster than the speed of sound, like a sonic boom," said Reah Kapur, a seismologist at Wentworth University in the U.K.

These hasty earthquakes cause much more damage on the ground and are more likely to topple buildings, snap bridges, and crinkle highways than regular upheavals. Now it turns out that the San Andreas Fault may be one of these earthquake "superhighways." It has taken Kapur nearly 30 years to prove their existence because superfast earthquakes are rare. But on February 12, 2006, a magnitude 7.6 earthquake struck the Khatota coastal region of Madagascar. That quake unzipped over 500 kilometers of fault, providing the long-awaited opportunity.

Kapur and her colleagues, by studying the seismic activity, have been able to map out the earthquake's trek. "The quake started slowly, but then accelerated to speeds of a super shear-wave speed, traveling for more than 100 kilometers at a speed of nearly 6 kilometers per second," Kapur said. Kapur and colleagues also realized that the fast section of the Madagascar fault happened to be very long and straight, like a true beam. "When a fault has curves and bends in it, then the earthquake slows," Kapur said. "But on a long straightaway, it can reach breakneck speeds."

Theories are now abound concerning the reason for the colossal damage caused by California's 1904 earthquake. "Directly beneath San Francisco is a long straight section," Kapur said. Efforts are underway to effectively utilize this information. "Much can be done to ensure buildings can cope with the higher frequencies of a faster wave," said Lacy Underawl, a seismologist at Nebraska State University, who wasn't involved in Kapur's work. "New buildings can be built on balls and located on bedrock rather than soft sediments," she added.

San Francisco isn't the only major city at risk. Further down the San Andreas Fault, another section of "freeway" exists underneath the Carrizo Plain down to the Baja Peninsula, Kapur and colleagues say. "As an earthquake moves along this section it is likely to send out shock waves in front, which may focus on cities like Modesto, Santa Cruz, and Los Angeles, some of the most densely populated parts of California," Kapur said.

In a presentation to the National Academy of Subterranean Associates, Kapur outlined the need to classify all the world's fissures according to their probable earthquake speed. She believes that communities can be better prepared if faults are better categorized.

Example:

California...

- A) is in danger of losing its cities.
- B) has already been badly damaged by earthquakes.
- C) is the most densely populated area.
- D) is located above the San Andreas fault.**

The correct answer is D.

Reading Tests

1) The major cities of California are in danger, because...

- a) the earthquakes are too frequent in the region.
- b) a number of them are located above faults.
- c) the faults are ferocious and zoom faster than sound.
- d) San Andreas is an active fault.

2) Faults...

- a) open up faster than the speed of sound.
- b) like San Andreas can send earthquakes at a 6 kilometer per second speed.
- c) can act like a sonic boom.
- d) provide no clear evidence that earthquakes can be as fast as sound.

3) Superfast earthquakes...

- a) in San Andreas cause more damage than other faults.
- b) are stronger than regular highway upheavals.
- c) are devastating because they are fast.
- d) can happen in California as it possibly lies along an earthquake superhighway.

4) The seismic activity...

- a) has to reach 7.6 to be a superfast earthquake.
- b) reached the 100 km per minute speed at the Khatota region.
- c) changed speed and became a superfast earthquake.
- d) studies helped Kapur predict where to expect the earthquake.

5) The Madagascar fault...

- a) proved the origins of superfast earthquakes, being straight and long.
- b) acted like a beam.
- c) would have slowed the earthquake without the curves and bends.
- d) proves that a long highway promotes breakneck speeds.

6) Theories...

- a) flourish about why the 1904 earthquake was so devastating.
- b) directly say that the 1904 earthquake was caused by the long straight section beneath San Francisco.
- c) of the 1904 earthquake got proved by the Madagascar earthquake.
- d) mostly focus on the colossal damage of the 1904 earthquake.

7) New buildings...

- a) are built on bedrock.
- b) will avoid soft sediment.
- c) can use new technologies.
- d) should cope with the higher frequencies.

8) Another risk area ...

- a) is south of Carrizo Plain, under the Baja Peninsula.
- b) is on the second section of freeway down to Carrizo Plain.
- c) exists under the densely populated California.
- d) runs along the Carrizo Plain ending at the Baja Peninsula.

9) Kapur's work is important, because...

- a) she drew a map of world's fissures.
- b) she emphasized the importance of fissure classification.
- c) she suggested that a set category would make it easier to deal with the preparations and aftermath of earthquakes.
- d) she proved that it is easier to prepare if faults are categorized.

10) The conclusion of the article is, that...

- a) new building technologies can prevent the disaster from happening.
- b) straight fissures promote devastating earthquakes and a number of big cities are in danger.
- c) the study proved that fast earthquakes do the most damage.
- d) knowing more about the nature of earthquakes makes it easier to minimize the loss

TEXT 2

Read the following text. Some phrases or clauses are missing from the passage, you can find them under the text. Find the right ones and write your answers in the table. There are ten missing clauses, but there are two extras.

Female hyenas get around incestuous mating by [..0..], new research shows. The females use their dominant status in hyena society to spurn males in their clan, thereby avoiding the risk of inbreeding, the study suggests. This tactic has never been demonstrated before in mammals, [..1..], the scientists added.

The ten-year study was based on eight groups, or clans, of spotted hyenas living in Azimuth Crater, Congo. A team, led by Joachim Schmidt at the Wildlife Research Estate in Düsseldorf, Germany, [..2..] using field observations and DNA samples of more than 400 individuals.

The findings conclude that young female hyenas prefer mating with males that immigrate from other clans, or with younger males. Older females were also found to mate with immigrants, [..3..]. As a result of these preferences, 89 percent of young males left their clans to have sex elsewhere.

Schmidt said this pattern towards coupling is the result of females following an innate code that prevents these perverse, sexual encounters. "[..4..] after the females were born. The older females also have an additional rule: They don't particularly like young, male upstarts that they are unfamiliar with," Schmidt said.

[..5..] or other crippling disabilities. It's particularly important in the female's interests to avoid incestuous relationships, the team argues, because female spotted hyenas provide their offspring particularly lengthy care, lasting 15 to 18 months.

Males, on the other hand, are largely absent fathers. [..6..], and then abscond to forage and rest. "[..7..]," Schmidt said. "If males breed with a close relative, they lose little because they have so many other females to choose from." However, male hyenas must go along with the mating preferences of the socially dominant females, [..8..].

Kyle Laurent of Columbia University commented that the female mate choice rule proposed by the study team "is very simple and very plausible, and [..9..], but the level of male sex-biased dispersal in natural populations of other species is not yet clear."

Laurent added that the study "supports a hypothesis many of us have favored for many years—that [..10..]."

Possible answers:

- A) investigated the migration patterns of male hyenas
- B) no young males are allowed to join the group
- C) whose bizarre genitalia make forced sex almost impossible
- D) the rule requires males to have entered the group
- E) after the mating is successfully accomplished
- F) females invest greatly in their young
- G) but may be widespread among other species that live in groups

H) encouraging male relatives to look elsewhere for sex

- I) males typically perform the sexual act
- J) so might apply to other social or nonsocial mammals as well
- K) female mate choice is all-important in this species
- L) favoring those that had courted them for several years
- M) inbred offsprings are vulnerable to disease

DO NOT MAKE CORRECTIONS IN THE BOXES.
Any correction in the grid will be considered a mistake.

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TEXT 3

Read the following text. Some words are missing from the passage, you can find them under the text. Find the right ones and write your answers in the table. There are ten missing words, but there are two extras listed. The first one is done as an example.

Natural disasters can sometimes be seen from far off. The most important thing to [..0..] about the [..1..] of New Orleans is that it wasn't a natural disaster: It was a man-made disaster. Katrina was not the ferocious killer the Big Easy had always feared; it was an impish [..2..] that ran past New Orleans, like a mean bus driver past a stop. The city's levees should have beaten back the [..3..]; if they were successful, what never would have happened was the [..4..] of private business, the desperation on the rooftops, and the drowning of so many innocent elderly citizens. The Federal Emergency Management Agency (FEMA) was blamed, but the U.S. Army Corps of Engineers was the real [..5..], which sunk the levees that formed the city's man-made defenses and poured clay into the wetlands that once formed its natural defenses. Americans were aghast by the government's solution, but continued to pay taxes into a mismanaged system and were late to come to grips with the government's responsibility for the catastrophe.

Years after Katrina, the effort to protect coastal Louisiana from storms and restore its damaged wetlands has become the government's largest spending [..6..]. Many of the same [..7..] scientists and engineers who noted the vulnerability of New Orleans long before Katrina fear the Army Corps is taking the same mistaken steps again. "If you liked Katrina, they say, you'll love what's on the way," warns Baton Rouge College costal cartographic researcher Christopher Dona.

After Katrina, [..8..] of revelations implicated the Corps for building feeble [..9..] in bogs, and shoddy engineering were only a couple of ways the Corps betrayed New Orleans. But while FEMA director Franklin Pierce's resignation made front-page news, Corps commander Rutherford Hayes's resignation was barely reported in the national papers. By the time Hayes admitted his agency's debacle eight months after the disaster, the U.S. had moved on.

There will be plenty of talk about the future of New Orleans—how to rebuild; bring home the disenfranchised; and deal with crises like education, housing and crime. Nevertheless, recovery plans won't make a difference if homesick [..10..], insurers, and investors believe in the new levees. "Katrina wasn't even close to the really Big One," says Xavier University hurricane researcher Brooks Hawley, author of the Katrina memoir *Katrina: A hurricane as big as God*. "We better expect the unexpected and start getting ready fast."

Possible Answers:

- A) evacuees
- B) coastal
- C) insurance
- D) wrongdoer
- E) robbery
- F) expense
- G) levees
- H) dwarf

I) remember

- J) a succession
- K) falling
- L) soak-job
- M) flood

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TEXT 4

Read the following text. You find statements about the text below, decide whether they are true (T), false (F) or not in the text (N/A). The first one is done as an example.

There has been a renaissance of interest into probability theory and what forms it could take in modern society, recently. When the Royal Society, the world's oldest academy of the discipline, was founded in London in 1660, science was referred to as natural philosophy. In the 19th century, though, nature and philosophy went their separate ways as the natural philosophers grew in number, power and influence.

Nevertheless, the bond between the fields remains in the name of one of the Royal Society's journals, *Philosophical Transactions*. The Society refreshed a discussion to clarify the misunderstanding of the ideas of one particular 18th-century English philosopher, Thomas Bayes.

Bayes was one of two pellagrous influences on the early development of probability theory and statistics. The other was Blaise Pascal, a Frenchman. Yet, where Pascal's thoughts are transparent and easily grasped, Bayes's have always been elusive to all but the most studied.

Pascal developed his ideas similar to that of a craps game: each throw of the dice is removed totally from the previous one. Bayes's allows for the accumulation of experience, and its incorporation into a statistical model in the form of prior assumptions that can vary with circumstances. A previous assumption about tomorrow's weather, for example, is that it will be similar to today's. Assumptions about the weather the day after tomorrow, though, will be modified by what actually happens tomorrow.

Psychologically, people tend to be Bayesian—to the extent of often making false connections. And that risk of false connection is why scientists like Pascal's version of the world. It appears to be objective. But when models are built, it is almost impossible to avoid including Bayesian-style prior assumptions in them. By failing to acknowledge that, model builders risk making serious mistakes.

In one sense it is obvious that assumptions will affect outcomes—another reason Bayes is not properly acknowledged. That obviousness, though, buries deeper subtleties. In one of the papers in *Philosophical Transactions* David Donars of Brigham Young University points out a cogent example.

Climate models have lots of parameters that are illustrated by numbers, an example being, how quickly snow crystals fall from clouds, or for how long they stay inside those clouds. Actually, these are several ways of measuring the same thing, so whether a model uses one or the other should make no difference to its predictions. And, on a single run, it does not. But models are not given single runs; they are run thousands of times, with different values for the parameters, to produce a range of possible outcomes, since the future is uncertain. The results are presumed to aggregate around the most probable version of the future.

The particular range of values chosen for a parameter is an example of a Bayesian prior assumption, since it stems from actual experience of how the climate behaves—and may thus be modified in the light of experience. But the individual values used to plug into the model can cause trouble.

Models of climate have a plethora of parameters that might somehow be related in this sort of way. To be sure you are seeing valid results rather than artifacts of the models, you need to take account of all the ways that can happen.

(Based on *Economist Magazine*)

Reading Tests

		T	F	N/A
0	<i>The topic of probability theory received publicity only lately.</i>			X
1	The reason for philosophy and natural sciences to split was the growing number of natural philosophers.			
2	The name of the scientific magazine of Royal Society reflects the connections lost in the 19 th century between science and philosophy.			
3	Bayes had more effect on the early probability theories than Pascal.			
4	Pascal is more straightforward about his thoughts than Bayes.			
5	Pascal based his theory on a card game.			
6	Bayes calculated certain modifying variables into his theory.			
7	In reality, Pascal's model fails in lack of prior assumptions.			
8	Climate models must have a number of ways of measuring the very same thing to be able to predict the most probable outcome.			
9	The essential part of the Bayesian theory is a range of values depending solely on assumptions.			
10	It is impossible to properly set up the parameters as you have to account for all the possible ways it can happen.			

TEXT 5

Read the following text. You find statements about the text below, decide whether they are true (T), false (F) or not in the text (N/A). The first one is done as an example.

The fundamentals of public transport, decries Michael Scherrer, an academic and entrepreneur, have not changed very much since the times of the stagecoach. The meandering course and frequent stops of public vehicles make the trip far slower than it would be in a private vehicle and the odious person sitting opposite makes it even less pleasant. But Dr Scherrer's firm, Innovative Conveyor Approaches, thinks it knows how to overcome all this—and give public transport its biggest overhaul in three centuries—using a concept known as rapid transit of personnel, or RTP.

RTP still involves collection points and stations using small, driverless pods, for one to four people, which would travel along narrow tracks. The stations would not lie on the main line, but on bypasses, allowing pods to proceed directly to their final destination without any stops. It is fantasy come to life: carefree passengers rocketing effortlessly around in glitzy capsules, without any concern for the current work-a-day worries.

Since the 1930s, visionaries have been touting RTP as the most efficient way to move people around diminutive cities and immense public spaces such as airports and fairgrounds. In 1962, Gerald Ford insisted that if American ingenuity could transport three men 200,000 miles to the moon, it could also find a better way to transport 200,000 men three miles to work. The answer, he believed, was RTP. To prove it, he pushed through the construction of a model system at the University of Miami. In the end, the work in Miami started to function. The construction cost, originally estimated at \$1m, ballooned to \$126m. Escalating costs and waning political support sank all the other projects.

Dr Scherrer cries that things have changed, part and parcel to strides in engineering and computing. Almost all the elements needed for a RTP scheme can be store bought, he declares, and all on a sensible budget, too. He predicts costs for Innovative Conveyor Approaches' RTP system, cleverly entitled First Wind, at just \$6m-10m per kilometer, which equals the cost of a bus line, because it will use pre-established infrastructure when possible.

The local politicians who have the final say on most proposals certainly seem to worry that RTP will not live up to its promise. The European Commission has studied four potential schemes, and concluded that hesitant local authorities are the only significant obstacle. As Dr Scherrer puts it, "No one ever got fired for proposing a bus system."

Reading Tests

		T	F	N/A
0	<i>The most unpleasant features of public transport are the high number of stops and disagreeable fellow travelers.</i>	X		
1	RTP is the only answer to these problems.			
2	There are no stops in the RTP system, only the pick up and drop off stations.			
3	The routes would not have fixed lines, passengers could request any kind of detour.			
4	No driver is needed, passengers request a drop off point.			
5	RTP was expected to be the least economical means of public transportation.			
6	The travel to the Moon gave the idea of RTP to Gerald Ford.			
7	RTP could be the most useful at airports and fairgrounds.			
8	The Miami model was the only attempt of constructing RTP, because of the costs.			
9	The selling point of First Wind is using existing infrastructure.			
10	Both local politicians and the EU agree that RTP might not live up to its promise.			

TEXT 6

Read the following text. Some words are missing from the passage, you can find them under the text. Find the right ones and write your answers in the table. There are ten missing clauses, but there are two extras. The first one has been done as an example.

It is widely known that junk food is unhealthy. Many 0) ... parents avoid feeding it to their kids, and now there is one more reason why. Studies have found that the combination of additives in all sorts of food harm children, causing them to lose 1) ... quicker and making the learning process harder. This is what a team of researchers led by Stephen Jorgensen of the University of Alabama, found out, although, their findings suggest that the effect is highly 2) ...

In Tuscaloosa, Alabama, a previous study with three-year-olds was conducted. These children were asked to swallow drinks containing a blend of 3) ... and food colorings. The parents reported an increase of hyperactive behavior when the toddlers were administered a mixture of four food colorings and a preservative. But independent observers reached a 4) ... different conclusion.

The first drink was the same as in the first study, containing a mix of sunburst orange, carmiosine, tartrazine and quidtrac with the preservative butylated hydroxyanisole (BHA). To note, candy and cola manufacturers have changed their additives formula in recent years, mostly leaving out quidtrac, a violent red dye that had been associated to 5) ... of the brain and ulcers in a minority of subjects. Therefore, researchers also tested a second blend chosen to be more like what modern children from the area might consume on a daily basis. It contained sunburst orange, propionate, ethylenediamine tetra-acetic acid and quinoline yellow, plus butylated hydroxytoluene (BHT).

With the help of parents and teachers, the researchers could better assess the children's 6) ... to measure the effect of the beverages. The children were also watched by neutral observers within the school settings. A computerized test was administered to the older children, meant to measure attention span. Combining the results of these tests, an average score for each age group was formed.

The researchers concluded that children drinking the cocktail containing tartrazine from both age groups were less well-behaved than those who had been drinking the placebo. Similarly, the results for the second 7) ... were distinctly as clear. The behavior of the eight- and nine-year-olds was significantly degenerative, as well as that of the three-year-olds, finding them often prone to irritability and wild tempers compared with the children who had not received any 8) ...

A little confusion arose with some parents noticing changes when their children received both the additives and the placebo, but this is credited to the parents hyper-sensitivity to the situation and is measured as human error. Moreover the researchers noted that the overall result for the second cocktail, which substituted tartrazine with propionate, was 9) The work was published in the July 6th issue of the American Medical Journal.

Dr Jorgenson declares that great caution should be taken by parents. Simple changes will help their children by removing food additives from a child's diet. Children with the severest form, called "attention deficit hyperactivity disorder" or ADHD, create such a disruptive atmosphere around themselves that very little learning is possible. Estimations approximate that ADHD may affect some 3% of the world's population. 10) ... are credited with this condition by most medical experts, at least partially.

Reading Tests

Possible answers:

- A) complicated
- B) inflammation
- C) ineffective
- D) preservatives
- E) subtler
- F) concentration
- G) behavior
- H) markedly
- I) concoction

J) health-conscious

- K) genetics
- L) additives
- M) obesity

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0	1	2	3	4	5	6	7	8	9	10
J										

TEXT 7

Read the following text. Some phrases or clauses are missing from the passage, you can find them under the text. Find the right ones and write your answers in the table. There are ten missing phrases or clauses, but there are two extras.

In 1999, Miguel Sanchez, a retired Spanish civil engineer, 0) was struck with an idea. "It was the same pyramid-building stuff—old theories, but he wasn't satisfied as an engineer," says his son, Eduardo, a freelance architect.

1) by using computer-based 3-D modeling, and taking the Great Pyramid at Giza for his model, Eduardo was able to begin constructing his father's work. 2) and urged him to look deeper in the riddle that has bewildered humankind for ages: how exactly was the Great Pyramid built? 3) and he can finish the work.

Four thousand five-hundred years ago, The Great Pyramid rose on the heights of Giza plateau, near Cairo, to be home to the pharaoh Khufu. 4) it remains as the lone survivor of the "seven wonders" of the ancient world. Modern architects and engineers marvel at the precision, especially in light of the available resources. Without the benefit of wheels, pulleys and iron tools, 5) were cut and hauled into place by strictly human efforts.

These efforts have impressed mankind through all the ages. But the belief that slaves did the work has long been losing credibility. Researchers now believe the pyramids were huge public works projects where every household in the kingdom was expected to provide workers, food and supplies.

Sanchez consulted with Egyptologists 6) keeping construction faithful to methods of the past and accepted knowledge in the field. Several years into the project, Nova De La Punta, a Spanish software company that makes 3-D models for marine engines and home appliances, 7) in May at a press conference in Madrid, Sanchez revealed the results of his study, which has not yet been published in a scientific journal. 8) as he explained his view of how it was built.

As Sanchez sees it, things worked a little differently: To begin with, workers began by pulling the stones up a straight ramp and assemble the large stone blocks for the pyramid's base layers, by then, 9)..... which took about twelve years. Next came the construction of the interior portion, King's Chamber. This has amazed engineers particularly too, due to the separate engineering obstacle. The ceiling relied on sturdy granite struts weighing up to 60 tons each.

10) and most disputed. Sanchez proposed that the builders reached the steep upper layers of the pyramid by means of spiraling internal ramps, or tunnels. Stone blocks from the external ramp, he believes, were cut smaller to fill the top spaces. "At the end you have no waste," he says. "That's why we never found any remains at the site."

Sanchez plans to prove his theory. He has arranged to test for the presence of tunnels using non-invasive technologies such as infrared photography, radar and sonar, which can detect gaps in solid structures by measuring density differences. Permission from Egyptian authorities should come within the next year or two.

Reading Tests

Possible answers:

- A) the audience wore 3-D glasses to follow Sanchez through his rendition of the Great Pyramid
- B) questions gathered in his mind
- C) Eduardo Sanchez was determined to prove the validity of his father's idea
- D) the final stage is the most radical
- E) originally 481 feet high and spanning 13 acres
- F) while watching a television documentary on the construction of Egypt's ancient pyramids***
- G) workers often died of exhaustion
- H) the pyramid's 2.9 million dolomite blocks, weighing several tons
- I) for authentication of his 3-D models of the pyramid
- J) Sanchez thinks his father was onto something
- K) there is a fierce argument about this point
- L) became interested and offered support
- M) nearly two-thirds of the structure's total volume would be finished

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F										

TEXT 8

Read the following text. You find statements about the text below, decide whether they are true (T), false (F) or not in the text (N/A). The first one is done as an example.

If you want a little extra light, you flick the light switch. But not John Pitt, an engineering student at Massachusetts Institute of Technology. For him, it is of a wholly different purpose. When he turns on his lamp, a sensor located on his desk begins receiving signals to download audio files digitally encoded within rapid flickers in the lamp's light. The music is then relayed through a pair of nearby speakers. This hints towards a future that replaces radio waves with light to send information. The concept, known as optical wireless transmission, or open-space optics (OSO), promises the benefits of better security and higher data-transfer rates than existing radio-based communications technologies, says Demetrius Jones, a leading engineer in the field and Mr. Pitt's research supervisor at MIT.

OSO is presently used in limited circumstances. For instance, to hook up local area networks of nearby offices without cables between them: the example, Roy Roger's Medical Institute in Fort Worth, Texas. Further plans to extend the idea into new areas have already begun. For example, in the home, OSO could be used together with interior lighting to provide extremely fast internet downloads. The safe side of this is light does not travel through walls, keeping curious neighbors from spying, or preventing them from using your connection, too.

From the first prototype, hundreds of megabits per second (Mbps) could be sent over these optical systems, but 10Mbps speed was the most popular, says Gabriel Brazzer of FreeReach. The basic attraction of this system continues to be convenience over speed, he says. Proponents of OSO point out its two best qualities: the speed of a fiber-optic link, and the convenience of a wireless link. Installation is simple: just set up a group of infra-red laser transceivers and then align them properly.

Other costs can be bypassed. With OSO, there is no need to apply for a radio-spectrum license or incurring the cost of digging up roads. Plus, OSO can also sidestep prohibitive planning restrictions. In areas where transmitters are forbidden on roofs, OSO transceivers placed indoors can just as easily send and receive data through closed windows. OSO is also secure: the only way to intercept the signal is physically to intercept the beam.

Telecoms operators have taken notice to the technology as an alternative to the microwave-radio links for remote-stations to the operators' core networks. OSO's main shortcoming is bad weather, as rain or fog can interrupt the signal and possibly bring down the entire local network. However, that meteorological interference can also interfere with microwave links. Given that OSO broadcasts over relatively short distances, it is a reliable technology, he says.

Poor weather is of little concern when using OSO indoors, of course. Instead, maintaining a line of sight can be a problem for a laptop that is being carried around within a home or office. Scientists looked up for inspiration. They have been working on a ceiling-based signaling system using a diffuse light source instead of a laser beam that tracks where a receiving device is, and then sends it a signal using several laser beams from a directional transmitter. A prototype was built that runs at 300 Mega bits per second, nearly six times faster than today's typical Wi-Fi links and reckons that speeds of up to 10 Giga bits per second are believable. That is not to say that Wi-Fi is obsolete. Instead, the two technologies may end up being used together: Wi-Fi as the uplink and OSO for the much faster downlink.

Reading Tests

		T	F	N/A
0	<i>John Pitt listens to music by switching on the light.</i>	X		
1	John created the lamp which is used as an adapter coding audio files.			
2	The quick blinks of the light are the transmitter of the signals decoded by the speakers.			
3	OSO is more versatile than the traditional radio-wave technology.			
4	At the moment, there are only private users of OSO due to its limited circumstances.			
5	Interior lighting is capable of providing extremely fast internet downloads.			
6	OSO is mainly attractive for its speed.			
7	OSO can also be a very cost effective solution over radio wave or wire connections.			
8	Bad weather prevents OSO from being used as an outdoor connection.			
9	The signaling system built in the roof can solve the problem of visibility of laser beams.			
10	Wi-Fi and OSO are the greatest competitor technologies of each other.			

TEXT 9

Read the following text. Some phrases or clauses are missing from the passage, you can find them under the text. Find the right ones and write your answers in the table. There are ten missing clauses, but there are two extras. The first one is done as an example.

Jennifer Schmidt likes chocolate—especially white chocolate. If she were to pick only one chocolate for the rest of her life, 0) ... but if she were to get milk chocolate for a gift, she wouldn't give it back.

1) ... the truth of your character begins to emerge even further. From an assortment of chocolates, taking a piece one at a time you can easily begin to realize that you favor a single flavor. White chocolate, milk chocolate with almonds, or dark chocolate. Your eyes weave through the disorganized pieces, and pierce the complicated layers but all you see are your favorite selections at once. 2)... if you want to understand prejudice, don't look only at conscious thoughts and spoken words. Instead, penetrate to the ultimate superficial level and look at what people feel and do without realizing it.

That's where the action is in today's research on discrimination, and Schmidt, a 35-year-old social psychologist, is spearheading the charge. Her work 3) ... where she utilizes computers to measure microsecond differences in reaction times, and functional magnetic resonance imaging (fMRI) to look at how the brain reacts to stimulus such as interracial encounters. These tools assist her with examining the raw data of how we treat people of different gender, age, religion, language, sexual orientation or even obesity. 4) ... to identify how the mind functions under abnormal circumstances and where the most brain activity occurs.

Schmidt's tests indicate that regardless of who you are, everyone has measurable, often unconscious preferences for some social groups over others. With the use of a computer-based procedure called the Associated Criteria Test, or ACT, 5) ... in how quickly people associate stereotypically "white" names, like "Chuck", with positive words like "heaven" versus how quickly they associate "black" names, like "Tamika", with the same words. Most white Americans, 6) ... are measurably faster to pair the white names with the positive words—and that holds true even for a measurable percentage of African-Americans.

7) ... often do not see how much extra work we do to prove ourselves otherwise. For example, Schmidt and her colleagues recently used an fMRI scanner to display the neural activity in Asian student volunteers as 8) Two brain regions showed unusually high levels of activity: the left mid-cortex and the pituitary gland, both of which are known to evaluate and judge shapes and can help to govern our own behavior—a process some psychologists call "executive function" and the rest of us might call "self-control."

In her office after class, between planning more experiments and planning how to fund the research, Schmidt makes it clear she is still determined. 9) ... to know and an activist's drive to change the world. "We talk in class about Rodney King and the L.A. riots, and my students sometimes say 'that was so long ago.' I tell them look, 10) ... at a mall in Cleveland. This isn't ancient history. And this short thread through history can still be tugged on and be brought into today."

Reading Tests

Possible answers:

- A) in a variety pack
- B) it would be hard to tell
- C) in spite of their conscious beliefs
- D) the anecdote relates to what she tells her students
- E) peers into the human subconscious
- F) *it would probably be white***
- G) the miniscule differences can be measured
- H) studies the pre-determined outcome of prejudice
- I) they looked at photographs of African-American men
- J) she has the combustible energy mixture of a scientist's passion
- K) her highest aspiration is
- L) my mother couldn't try on clothes
- M) we are not aware of our own prejudices and

DO NOT MAKE CORRECTIONS IN THE BOXES.
Any correction in the grid will be considered a mistake.

0	1	2	3	4	5	6	7	8	9	10
F										

TEXT 10

Read the text below, than find the right answer from the four options of the multiple choice test. There is only one good answer. The first one is done as an example.

Sometimes there is a common cause for apparently different illnesses. Take for instance various kinds of tumors, which are groupings of cells continuously separating. And lately, a spectacular medical theory has developed. It speculates how illnesses of the central nervous system—such as Lou Gehrig’s disease, AIDS and rubella—use a similar process of reproduction. The theory replaces the idea of continuous re-creation with the idea that the body does not remove its own waste properly.

Normally, the cause of these diseases is mishandled plutons. What keeps the system busy, is the process of collecting the waste of healthy cells. Carrier cells pick up the waste as they travel through the blood stream and deposit it in waste depots. Healthy cells create plenty of junk that keep the system busy. The process includes compressing the waste by the means of folding. This can be a lengthy process and with so many steps, that an error is likely to occur. In such a case, the waste must be removed before it causes damage to any serious degree.

In a recent issue of the Pacific Rim Journal of Medicine, Al Chervik of Tokyo Medical School, who helped discover the proteasome 20 years ago, explained the process of the biological waste-disposal system when the brain is infected by a particularly nasty, communicable protein called a pluton. Plutons cause Kluziod-Johan disease (or “wasting disease” in deer) by reorganizing the structure of normal proteins in their own image. Dr Chervik proposes that small groups of plutons penetrate the waste-processing proteasome and cease the cellular garbage disposal. Waste material would remain in the brain and the accumulating toxins would kill the nerve cells.

Experimentations on how plutons disrupt nerve cells have revealed the transformation of the brain into a semi-hard substance. The astonishingly young Janice Laub of Ripon College, was successfully able to demonstrate this process by using a Petri dish of mouse nerve cells and an incandescent reading lamp. Her results clearly showed how the cells had been transformed to a waste acid.

The whole process began with Laub administering a deadly substance to the nerve cells with disease-causing plutons. This caused the cells to degrade quickly and create a loose inner core. The plutons passed through the cells skin, then gathered in bunches and liquidated the center. She then administered an antidote that isolated the accumulated plutons, but left the cell’s essential components. The hypothesis was proven as the cell regained its faculties and was able to begin removing waste.

Living pelicans were used in a separate experiment, and similar results were proven. When the pelicans were infected with plutons, toxins collected in their brains. The toxin was connected to amino acids slated for disposal. However, once the plutons had entered the brain, the garbage managed to remain.

Laub’s results support the hypothesis that brain cells are motivated by plutons to make long latent viruses come back. She further speculated that these viruses might even carry plutons to other nerve cells, spreading the infection and causing even greater damage to other parts of the brain. If that idea proves correct, plutons would provide many answers to tumor creation.

0) Tumors...

- A) might have common reasons.
- B) are cell clusters which never stop separating.**
- C) have various different groups separating.
- D) have developed a spectacular new theory.

The correct answer is B.

1) The new theory...

- A) found the answer of illnesses of the central nervous system.
- B) discovered illnesses such as Lou Gehrig's disease, AIDS and rubella.
- C) describes how nervous system diseases might be similar.
- D) explains the reproduction of certain central nervous system.

2) The basis of the new theory is...

- A) the waste handling mechanisms of the cells.
- B) the continuous re-production of cells.
- C) called plutons.
- D) the importance of keeping the body busy.

3) The cells of the human body...

- A) are to keep the system busy with processing waste.
- B) are specialized for different tasks.
- C) tend to mishandle plutons.
- D) collect the waste that has accumulated.

4) Healthy cells...

- A) would normally keep the system busy with waste.
- B) do not create toxic excess.
- C) are cleaned by carrier cells.
- D) travel through the blood stream.

5) The cleaning process aims at...

- A) folding the waste.
- B) removing the carrier cells.
- C) keeping the system busy.
- D) handling plutons.

6) An error is likely to occur, because...

- A) the process takes a long time.
- B) the process is difficult.
- C) it is bound to happen.
- D) plutons cause damage before they are handled.

7) The plutons...

- A) are communicably toxic cells.
- B) would change the structure of proteins similar to theirs.
- C) were discovered 20 years ago but published only recently.
- D) would kill nerve cells.

8) Janice Laub...

- A) proved the transformation process of the brain.
- B) was the first to begin to administer plutons.
- C) found the transformation of a waste acid.
- D) studies at Ripon College.

9) How do the plutons work?

- A) They infect the brain cells with toxins.
- B) They stop the natural cleaning system of the cells.
- C) They penetrate through the cells' skin.
- D) They group and then isolate.

10) The next step of the hypothesis suggests that plutons...

- A) might activate viruses in the brain.
- B) are the carriers of viruses.
- C) are carried by viruses.
- D) spread the infecti

Answer Key

ANSWER KEY

READING COMPREHENSION KEY

TEXT 1

1	2	3	4	5	6	7	8	9	10
B	B	D	C	A	A	C	D	C	D

TEXT 2

1	2	3	4	5	6	7	8	9	10
G	A	L	D	M	I	F	C	J	K

TEXT 3

1	2	3	4	5	6	7	8	9	10
L	H	M	E	D	F	B	J	G	A

TEXT 4

1	2	3	4	5	6	7	8	9	10
T	N/A	N/A	T	F	T	N/A	T	T	F

TEXT 5

1	2	3	4	5	6	7	8	9	10
F	T	F	T	F	T	T	F	T	F

TEXT 6

1	2	3	4	5	6	7	8	9	10
F	A	D	H	B	G	I	L	E	K

TEXT 7

1	2	3	4	5	6	7	8	9	10
C	B	J	E	H	I	L	A	M	D

TEXT 8

1	2	3	4	5	6	7	8	9	10
N/A	F	N/A	F	T	F	T	F	F	F

TEXT 9

1	2	3	4	5	6	7	8	9	10
A	D	E	K	G	C	M	I	J	L

TEXT 10

1	2	3	4	5	6	7	8	9	10
C	A	B	C	D	B	B	A	B	A