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Choose the one word or phrase that best keeps the meaning of the original sentence if it is substituted for the underlined word or phrase. (每題 2 分)

1. Dr. Cageht in North Carolina and his colleagues determined the basic principles of steam dynamics in the latest conference of their expertise.
A. laws B. uses C. advantages D. dangers
2. Tornadoes are not always accompanied by thunderstorms.
A. joined B. followed C. preceded D. triggered
3. Today, over 300 schools grant 65,000 engineering degrees in the United States alone.
A. create B. give C. review D. promote
4. The visual system contributes to the human ability to pose questions and then work out ways to answer them.
A. investigate B. devise C. visualize D. consider
5. Of all the world's species, human beings have the most complex visual system.
A. powerful B. intricate C. efficient D. sensitive
6. Many psychologists and psychiatrists have come to view Freudian theories with some skepticism.
A. doubt B. respect C. scorn D. amusement
7. Environmental stress may cause individuals with a biological predisposition to mental illness to develop overt symptoms.
A. outward B. inborn C. invisible D. many
8. Neither was he a giant merely because of his birth – he was the son of a wealthy Taiwanese family.
A. only B. partly C. mainly D. naturally
9. With 100 billion neurons and a huge number of connections, the brain is a system loaded with variable.
A. linked B. created C. mixed D. filled
10. Psychologists have studied extensively what goes into the brain – experience, and what emerges, behavior.
A. does not B. comes out C. develops D. reproduces

Read the articles below and answer the following questions. (11-15 題, 每題 8 分; 16-19 題 10 分)

Synesthesia is a neurological condition in which two or more bodily senses are coupled. In Greek, "syn" stands for "union" and "aesthesia" stands for "sensation. For nearly 300 years, people who claimed to hear colors, feel sounds or taste shapes risked being dismissed as having overactive imaginations. Little is known about synesthesia's causes or its prevalence. Estimates range from one in 2,000 to one in 25,000 and there is also some evidence that the condition is more common in women than in men. Nevertheless, a number of famous people - including the poets Baudelaire and Rimbaud, the painters Kandinsky and Klee, the composers Liszt and Scriabin - have been linked to synesthesia. In an attempt to describe what synesthesia is like, novelist and synesthete Vladimir Nabokov wrote that he saw the letter "c" as light blue; associated "a" with the look of "weathered wood," and got a feeling like "a sooty rag being ripped" from the letter "r."

(背面仍有題目, 請繼續作答)

編號： 572 系所：認知科學研究所

科目：英文閱讀測驗

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Recent years, however, several scientific studies of this rare condition produced compelling evidence that it is a genuine perceptual phenomenon. One of the most common form of synesthesia - the perception that numbers, letters and words have distinct colors - has been confirmed by cognitive scientists that those experiences originate during the central stages of visual processing in the brain. These findings support a model of synesthesia recently advanced by Vilayanur Ramachandran and Edward Hubbard from the University of California, San Diego that is based on an idea that has been around for decades: that synesthesia is caused by a subtle cross-wiring in the brain. Specific regions in the brain process information about different aspects of the visual scene, such as color, shape and motion. Recent brain mapping studies have found that a primary color area is adjacent to an area that handles numbers and letters. Another color area lies next to a primary auditory area. If the neurons in these regions were more densely wired or strongly connected than normal, it could explain why some people see words, numbers and sounds in color.

11. What of the followings is not synesthesia?

- A. Seeing letter "A" in black ink as red.
- B. The sound of note C evokes the feeling of seeing blue color.
- C. Thinking of color blue but writing down the word "green."
- D. Tasting bitter water drops and hearing a sound of 1500 Hz.

12. What is not true for synesthesia?

- A. This is a real perceptual phenomenon that has existed for several hundred years.
- B. Less than 0.1% of the population are synethetes, and among them, female are more than male.
- C. Modern studies suggest that people who claim they can feel sounds or taste shapes are mostly out of their mind, or have overactive imagination like artists.
- D. It is possible for cognitive psychologists to use scientific measurements to investigate whether central processes involves in producing synesthesia perception.

13. Which of the following statements is true?

- A. Ramachandran-Hubbard theory believes that neurological causes is not enough to explain why synehesia occurs among human because the phenomenon is not accessible by others who do not experience the same thing.
- B. Scientists at UC, San Diego first propose that different human brain regions are responsible for diverse functions such as color vision, shape, and motion, and this theory is supported by recent findings.
- C. Inter-neuron wiring between neighboring brain areas are likely to be contributed as the cause of fascinating phenomenon in which people enjoy perceptual experience in multiple dimensions.
- D. There are a great number of types of synesthesia, and the most common type occurs in musicians who owns perfect pitch due to their sensation of various shapes when exposed to different pitches.

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"On the Internet," as a New Yorker cartoon famously observed, "no one knows you're a dog." Thanks to the ease of finding personal information online, that may be the only thing about you they don't know.

Indeed, for anyone who knows where to look, your address, phone number, birth date and more are only a few clicks away. Dedicated searchers can easily turn up property records, unlisted or cellphone numbers, and even more sensitive information such as Social Security, credit-card and bank-account numbers. In Broward County, Fla., a simple search through pet licenses can in fact tell whether you're a dog -- or at least whether you have one.

It's enough to make anyone feel...exposed. Do we really want our friends, our neighbors, our colleagues -- or any stranger, for that matter -- knowing so much about us? Do we want them to know even the small stuff: where we've lived, how much we paid for our house, how old we are, how they can reach us?

For many of us, the answer is no.

The semi-good news is that our lives don't have to be quite such an easily opened book. Privacy advocates and professional investigators say people can shield at least some personal information from online snoops.

"There are things individuals can do," says Charles Wood, an information-security consultant in Sausalito, Calif.

"You're going to have to work on it, it's going to take some time, and we're going to have to wait for better laws. This isn't something they need to throw their arms up about."

The semi-not-so-good news is that it may not be possible to erase completely your online traces. Many details are contained in public records, like voter lists, property records and court filings that increasingly are being placed online. Trying to keep these records private could take more time or money than many people are willing to spend. To make sure that these documents can't be used by identity thieves or stalkers, privacy advocates are promoting legislation requiring states to remove or block out especially sensitive facts, such as Social Security or bank-account numbers that might end up in bankruptcy filings, property deeds and other public documents. For instance, after it was discovered that Florida counties had put documents online containing Social Security numbers, including that of Gov. Jeb Bush, the state adopted a law requiring counties to remove those numbers before posting documents online.

But such laws may be slow in coming, if they come at all. And they go after only a small portion of our online tracks. Following a guide based on recommendations from privacy advocates, investigators and others for taking control of one's online information may be the least we can do for ourselves before the day we can be free from the worry of exposure too much.

14. What is the main idea of this passage?

- A. It is important to remove your personal data available online so that those documents cannot be used by identity thieves or stalkers.
- B. Although it takes long time, people can shield some of personal information from others.
- C. Since it is difficult to remove personal data from online, people are making laws which limits personal information to be listed online.
- D. Identity theft crimes became more serious as people started to use internet to search personal information.

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15. Which of the following does NOT match the content?

- A. It is possible to clean up personal information stored online, but it can be difficult and time-consuming.
- B. People are developing new procedures to remove any personal data online without permission of disclosure.
- C. People vary in how sensitive they are about others being able to see their personal information.
- D. Technology makes it possible to find all the private information online including credit-card and bank account numbers.

Grocery-store shelves are increasingly crowded with pricy organic versions of everything from milk and eggs to hot dogs and beer. But some of the options pitched as healthier may not always be worth their higher price tags.

Born as an environmentally friendly alternative to conventional farming methods, the organic-food industry has mushroomed into a juggernaut with nearly \$14 billion in sales in 2005 and annual growth of roughly 20%.

One big reason food makers and retailers are scrambling into the business: Shoppers often are willing to pay a fat premium for anything with the word "organic" on the box.

The term "organic" refers to farming methods that eschew pesticides and other chemicals in an effort to protect the environment. But while some consumers do buy it to support the environmental goals, increasingly people seek out organic food for the perceived health benefits and to avoid chemical residues. More than 70% of Americans buy organic at least occasionally, according to marketing firm Hartman Group Inc.

Since 2002, the U.S. Department of Agriculture has imposed strict standards on which foods can say "organic" on their labels. Fruits, vegetables and grains must be grown on land free of prohibited synthetic fertilizers or sewage sludge, and genetic engineering and irradiation are not allowed. Meat, poultry and milk must come from animals that are free of the growth hormones and antibiotics that are given to conventionally raised animals to boost production, and must be fed organic feed. They also must have access to the outdoors -- although that doesn't mean they always get to roam free.

But organic food isn't necessarily more healthful than conventionally produced food, say many scientists. Some conventional foods are already low in chemicals and high in nutrients. For instance, most of any chemical residue on a nonorganic banana or orange gets thrown away with the peel, anyway, nutrition and environmental experts say. So careful consumers who want food that packs a health benefit in addition to supporting a cleaner environment may want to consider what organic foods are really worth the higher prices.

16. Which of the followings is true?

- A. By the method they are grown, organic products are healthier and more nutritious than the conventional products.
- B. Environmental experts suggest that we should choose organic products because conventional products contain pesticides and chemical residues which are harmful to our health.
- C. People are willing to buy organic products because they want to pay more for its better fat content.
- D. Although nonorganic banana contains chemical residues, it is as healthy as organic one.

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17. Which of the following is true?

- A. More food makers label their food organic since they make more money.
- B. More food makers produce organic food so that consumers will have healthier products.
- C. More food makers sell organic products so that they make more money.
- D. More food makers demonstrate that conventional food can be as good as organic one as long as the pesticide left on the food is thrown away.

Although science and religion are often in conflict, the Dalai Lama takes a different approach. Every year or so the head of Tibetan Buddhism invites a group of scientists to his home in Dharamsala, in Northern India, to discuss their work and how Buddhism might contribute to it.

In 2004 the subject was neuroplasticity, the ability of the brain to change its structure and function in response to experience. The following are vignettes adapted from "Train Your Mind, Change Your Brain," which describes this emerging area of science:

The Dalai Lama, who had watched a brain operation during a visit to an American medical school over a decade earlier, asked the surgeons a startling question: Can the mind shape brain matter?

Over the years, he said, neuroscientists had explained to him that mental experiences reflect chemical and electrical changes in the brain. When electrical impulses zip through our visual cortex, for instance, we see; when neurochemicals course through the limbic system we feel.

But something had always bothered him about this explanation, the Dalai Lama said. Could it work the other way around? That is, in addition to the brain giving rise to thoughts and hopes and beliefs and emotions that add up to this thing we call the mind, maybe the mind also acts back on the brain to cause physical changes in the very matter that created it. If so, then pure thought would change the brain's activity, its circuits or even its structure.

One brain surgeon hardly paused. Physical states give rise to mental states, he asserted; "downward" causation from the mental to the physical is not possible. The Dalai Lama let the matter drop. This wasn't the first time a man of science had dismissed the possibility that the mind can change the brain. But "I thought then and still think that there is yet no scientific basis for such a categorical claim," he later explained. "I am interested in the extent to which the mind itself, and specific subtle thoughts, may have an influence upon the brain."

The Dalai Lama had put his finger on an emerging revolution in brain research. In the last decade of the 20th century, neuroscientists overthrew the dogma that the adult brain can't change. To the contrary, its structure and activity can morph in response to experience, an ability called neuroplasticity. The discovery has led to promising new treatments for children with dyslexia and for stroke patients, among others.

But the brain changes that were discovered in the first rounds of the neuroplasticity revolution reflected input from the outside world. For instance, certain synthesized speech can alter the auditory cortex of dyslexic kids in a way that lets their brains hear previously garbled syllables; intensely practiced movements can alter the motor cortex of stroke patients and allow them to move once paralyzed arms or legs.

The kind of change the Dalai Lama asked about was different. It would come from inside. Something as intangible and insubstantial as a thought would rewire the brain. To the mandarins of neuroscience, the very idea seemed as

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likely as the wings of a butterfly leaving a dent on an armored tank. This is the motivation of the collaboration between Dalai Lama, the world-famous religious leader, and several neuroscientists in the world.

18. What is the main message of this article?

- A. The brain of human beings construct how we see, feel, fear, and think.
- B. Religion and science are fundamentally different extremes in terms of their beliefs in how human operates.
- C. With an open mind, it is possible for neuroscience to bridge the seemingly conflict science and religion.
- D. Dalai Lama is one of the few religious leader who is interested in modern science.

19. What is true about neuroplasticity?

- A. Neuroplasticity is the ability of our neural system to be flexible to the constantly changing environment.
- B. Neuroplasticity has a critical age before it could fully benefit from adaptation and adjustment.
- C. Dyslexic kids recognize syllables they did not understand before by repetitious practice of read out.
- D. Stroke patients can enhance their body movement by imaging the paralyzed limb moves at their will.