1. Bài 1

Right and left-handedness in humans

Why do humans, virtually alone among all animal species, display a distinct left or right-handedness? Not even our closest relatives among the apes possess such decided lateral asymmetry, as psychologists call it. Yet about 90 percent of every human population that has ever lived appears to have been right-handed. Professor Bryan Turner at Deakin University has studied the research literature on left-handedness and found that handedness goes with sidedness. So nine out of ten people are right-handed and eight are right-footed. He noted that this distinctive asymmetry in the human population is itself systematic. “Humans think in categories: black and white, up and down, left and right. It’s a system of signs that enables us to categorise phenomena that are essentially ambiguous.’

Research has shown that there is a genetic or inherited element to handedness. But while left-handedness tends to run in families, neither left nor right-handers will automatically produce offspring with the same handedness; in fact about 6 percent of children with two right-handed parents will be left-handed. However, among two left-handed parents, perhaps 40 percent of the children will also be left-handed. With one right and one left-handed parent, 15 to 20 percent of the offspring will be left handed. Even among identical twins who have exactly the same genes, one in six pairs will differ in their handedness.

What then makes people left-handed if it is not simply genetic? Other factors must be at work and researchers have turned to the brain for clues. In the 1860s the French surgeon and anthropologist, Dr Paul Broca, made the remarkable finding that patients who had lost their powers of speech as a result of a stroke (a blood clot in the brain) had paralysis of the right half of their body. He noted that since the left hemisphere of the brain controls the right half of the body,

and vice versa, the brain damage must have been in the brain's left hemisphere. Psychologists now believe that among right-handed people, probably 95 percent have their language centre in the left hemisphere, while 5 percent have right sided language. Left-handers, however, do not show the reverse pattern but instead a majority also have their language in the left hemisphere. Some 30 per cent have right hemisphere language.

Dr Brinkman, a brain researcher at the Australian National University in Canberra, has suggested that evolution of speech went with right-handed preference. According to Brinkman, as the brain evolved, one side became specialised for fine control of movement (necessary for producing speech) and along with this evolution came right-hand preference. According to Brinkman, most left-handers have left hemisphere dominance but also some capacity in the right hemisphere. She has observed that if a left-handed person is brain-damaged in the left hemisphere, the recovery of speech is quite often better and this is explained by the fact that left-handers have a more bilateral speech function.

In her studies of macaque monkeys, Brinkman has noticed that primates (monkeys) seem to learn a hand preference from their mother in the first year of life but this could be one hand or the other. In humans, however, the specialisation in (function of the two hemispheres results in anatomical differences: areas that are involved with the production of speech are usually larger on the left side than on the right. Since monkeys have not acquired the art of speech, one would not expect to see such a variation but Brinkman claims to have discovered a trend in monkeys towards the asymmetry that is evident in the human brain.

Two American researchers, Geschwind and Galaburda, studied the brains of human embryos and discovered that the left-right asymmetry exists before birth. But as the brain develops, a number of things can affect it. Every brain is initially

female in its organisation and it only becomes a male brain when the male foetus begins to secrete hormones. Geschwind and Galaburda knew that different parts of the brain mature at different rates; the right hemisphere develops first, then the left. Moreover, a girl's brain develops somewhat faster than that of a boy. So, if something happens to the brain's development during pregnancy, it is more likely to be affected in a male and the hemisphere more likely to be involved is the left. The brain may become less lateralised and this, in turn, could result in left-handedness and the development of certain superior skills that have their origins in the left hemisphere such as logic, rationality and abstraction. It should be no surprise then that among mathematicians and architects, left-handers tend to be more common and there are more left-handed males than females.

The results of this research may be some consolation to left-handers who have for centuries lived in a world designed to suit right-handed people. However, what is alarming, according to Mr. Charles Moore, a writer and journalist, is the way the word "right" reinforces its own virtue. Subliminally he says, language tells people to think that anything on the right can be trusted while anything on the left is dangerous or even sinister. We speak of lefthanded compliments and according to Moore, "it is no coincidence that left-handed children, forced to use their right hand, often develop a stammer as they are robbed of their freedom of speech". However, as more research is undertaken on the causes of left-handedness, attitudes towards left-handed people are gradually changing for the better. Indeed when the champion tennis player Ivan Lendl was asked what the single thing was that he would choose in order to improve his game, he said he would like to become a lefthander.

Geoff Maslen

Questions 1-7

Use the information in the text to match the people (listed A-E) with the opinions (listed 1-7) below. Write the appropriate letter (A-E) in boxes 1-7 on your answer sheet. Some people match more than one opinion.

A. Dr Broca

B. Dr Brinkman

C. Geschwind and Galaburda

D. Charles Moore

E. Professor Turner

Example: Monkeys do not show a species-specific preference for left or right-handedness. *Answer:* B

1. Human beings started to show a preference for right-handedness when they first developed language.
2. Society is prejudiced against left-handed people.
3. Boys are more likely to be left-handed.
4. After a stroke, left-handed people recover their speech more quickly than right handed people.
5. People who suffer strokes on the left side of the brain usually lose their power of speech.
6. The two sides of the brain develop different functions before birth.
7. Asymmetry is a common feature of the human body.

Questions 8-10

Using the information in the passage, complete the table below. Write your answers in boxes 8 10 on your answer sheet.

	Percentage of children left-handed
One parent left-handed One parent right-handed	... (8) ...
Both parents left-handed	... (9) ...
Both parents right-handed	... (10) ...

Questions 11-12

Choose the appropriate letters A-D and write them in boxes 11 and 12 on your answer sheet.

11. A study of monkeys has shown that

A. monkeys are not usually right-handed.

B. monkeys display a capacity for speech.

C. monkey brains are smaller than human brains.

D. monkey brains are asymmetric.

12. According to the writer, left-handed people

A. will often develop a stammer.

B. have undergone hardship for years.

C. are untrustworthy.

D. are good tennis players.

2. Bài 2

Questions 14-18

Reading passage 8 has six paragraphs B-F from the list of headings below. Choose the most suitable headings for paragraphs B-F from the list of headings below. Write the appropriate numbers (i-ix) in boxes 14-18 on your answer sheet.

NB There are more headings than paragraphs, so you will not use them all.

List of Headings

i) Ottawa International Conference on Health Promotion

ii) Holistic approach to health

iii) The primary importance of environmental factors

iv) Healthy lifestyles approach to health

v) Changes in concepts of health in Western society

vi) Prevention of diseases and illness

vii) Ottawa Charter for Health Promotion

viii) Definition of health in medical terms

ix) Socio-ecological view of health

14. Paragraph B

15. Paragraph C

16. Paragraph D

17. Paragraph E

18. Paragraph F

Changing Our Understanding of Health

A. The concept of health holds different meanings for different people and groups. These meanings of health have also changed over time. This change is no more evident than in Western society today, when notions of health and health promotion are being challenged and expanded in new ways.

B. For much of recent Western history, health has been viewed in the physical sense only. That is, good health has been connected to the smooth mechanical operation of the body, while ill health has been attributed to a breakdown in this machine. Health in this sense has been defined as the absence of disease or illness and is seen in medical terms. According to this view, creating health for people means providing medical care to treat or prevent disease and illness. During this period, there was an emphasis on providing clean water, improved sanitation and housing.

C. In the late 1940s the World Health Organisation challenged this physically and medically oriented view of health. They stated that 'health is a complete state of physical, mental and social well-being and is not merely the absence of disease' (WHO, 1946). Health and the person were seen more holistically (mind/body/spirit) and not just in physical terms.

D. The 1970s was a time of focusing on the prevention of disease and illness by emphasising the importance of the lifestyle and behaviour of the individual. Specific behaviours which were seen to increase the risk of diseases, such as smoking, lack of fitness and unhealthy eating habits, were targeted. Creating health meant providing not only medical health care, but health promotion programs and policies which would help people maintain healthy behaviours and lifestyles. While this individualistic healthy lifestyle approach to health worked for some (the wealthy members of society), people experiencing poverty, unemployment, underemployment or little control over the conditions of their daily lives benefited little from this approach. This was largely because

both the healthy lifestyles approach and the medical approach to health largely ignored the social and environmental conditions affecting the health of people.

E. During 1980s and 1990s there has been a growing swing away from seeing lifestyle risks as the root cause of poor health. While lifestyle factors still remain important, health is being viewed also in terms of the social, economic and environmental contexts in which people live. This broad approach to health is called the socio-ecological view of health. The broad socio-ecological view of health was endorsed at the first International Conference of Health Promotion held in 1986, Ottawa, Canada, where people from 38 countries agreed and declared that:

- The fundamental conditions and resources for health are peace, shelter, education, food, a viable income, a stable eco-system, sustainable resources, social justice and equity. Improvement in health requires a secure foundation in these basic requirements. (WHO, 1986)

It is clear from this statement that the creation of health is about much more than encouraging healthy individual behaviours and lifestyles and providing appropriate medical care. Therefore, the creation of health must include addressing issues such as poverty, pollution, urbanisation, natural resource depletion, social alienation and poor working conditions. The social, economic and environmental contexts which contribute to the creation of health do not operate separately or independently of each other. Rather, they are interacting and interdependent, and it is the complex interrelationships between them which determine the conditions that promote health. A broad socio-ecological view of health suggests that the promotion of health must include a strong social, economic and environmental focus.

F. At the Ottawa Conference in 1986, a charter was developed which outlined new directions for health promotion based on the socio-ecological view of health. This charter, known as the Ottawa Charter for Health Promotion,

remains as the backbone of health action today. In exploring the scope of health promotion it states that:

- Good health is a major resource for social, economic and personal development and an important dimension of quality of life. Political, economic, social, cultural, environmental, behavioural and biological factors can all favour health or be harmful to it. (WHO, 1986)

The Ottawa Charter brings practical meaning and action to this broad notion of health promotion. It presents fundamental strategies and approaches in achieving health for all. The overall philosophy of health promotion which guides these fundamental strategies and approaches is one of 'enabling people to increase control over and to improve their health' (WHO, 1986).

Questions 19-22

Using NO MORE THAN THREE WORDS from the passage, answer the following questions. Write your answers in boxes 19-22 on your answer sheet.

19. In which year did the World Health Organization define health in terms of mental, physical and social well-being?

20. Which members of society benefited most from the healthy lifestyles approach to health?

21. Name the three broad areas which relate to people's health, according to the socio-ecological view of health.

22. During which decade were lifestyle risks seen as the major contributors to poor health?

Questions 23-27

Do the following statements agree with the information in Reading Passage 8?

In boxes 23-27 on your answer sheet write:

YES if the statement agrees with the information.

NO if the statement contradicts the information.

NOT GIVEN if there is no information on this in the passage.

23. Doctors have been instrumental in improving living standards in Western society.

24. The approach to health during the 1970s included the introduction of health awareness programs.

25. The socio-ecological view of health recognises that lifestyle habits and the provision of adequate health care are critical factors governing health.

26. The principles of the Ottawa Charter are considered to be out of date in the 1990s.

27. In recent years a number of additional countries have subscribed to the Ottawa Charter.

3. Bài 3

CHILDREN'S THINKING

One of the most eminent of psychologists, Clark Hull, claimed that the essence of reasoning lies in the putting together of two 'behaviour segments' in some novel way, never actually performed before, so as to reach a goal.

Two followers of Clark Hull, Howard and Tracey Kendler, devised a test for children that was explicitly based on Clark Hull's principles. The children were given the task of learning to operate a machine so as to get a toy. In order to succeed, they had to go through a two-stage sequence. The children were trained on each stage separately. The stages consisted merely of pressing the correct one of two buttons to get a marble; and of inserting the marble into a small hole to release the toy.

The Kendlers found that the children could learn the separate bits readily enough. Given the task of getting a marble by pressing the button they could get the marble; given the task of getting a toy when a marble was handed to them, they could use the marble. (All they had to do was put it in a hole.) But they did not for the most part 'integrate', to use the Kendlers' terminology. They did not press the button to get the marble and then proceed without further help to use the marble to get the toy. So the Kendlers concluded that they were incapable of deductive reasoning.

The mystery at first appears to deepen when we learn, from another psychologist, Michael Cole, and his colleagues, that adults in an African culture apparently cannot do the Kendlers' task either. But it lessens, on the other hand, when we learn that a task was devised which was strictly analogous to the Kendlers' one but much easier for the African males to handle.

Instead of the button-pressing machine, Cole used a locked box and two differently coloured matchboxes, one of which contained a key that would open

the box. Notice that there are still two behaviour segments — 'open the right match-box to get the key' and 'use the key to open the box' - so the task seems formally to be the same. But psychologically it is quite different, Now the subject is dealing not with a strange machine but with familiar meaningful objects, and it is clear to him what he is meant to do. It then turns out that the difficulty of 'integration' is greatly reduced.

Recent work by Simon Hewson is of great interest here for it shows that, for young children, too, the difficulty lies not in the inferential processes which the task demands, but in certain perplexing features of the apparatus and the procedure. When these are changed in ways which do not at all affect the inferential nature of the problem, then five-year-old children solve the problem as well as college students did in the Kendlers' own experiments.

Hewson made two crucial changes. First, he replaced the button-pressing mechanism in the side panels by drawers in these panels which the child could open and shut. This took away the mystery from the first stage of training. Then he helped the child to understand that there was no 'magic' about the specific marble which, during the second stage of training, the experimenter handed to him so that he could pop it in the hole and get the reward.

A child understands nothing, after all, about how a marble put into a hole can open a little door. How is he to know that any other marble of similar size will do just as well? Yet he must assume that if he is to solve the problem. Hewson made the functional equivalence of different marbles clear by playing a 'swapping game' with the children. The two modifications together produced a jump in success rates from 30 percent to 90 percent for five-year, the olds and from 35 percent to 72.5 per cent for four-year-olds. For three-year olds, for reasons that are still in need of clarification, no improvement — rather a slight drop in performance - resulted from the change.

We may conclude, then, that children experience very real difficulty when faced with the Kendler apparatus; but this difficulty cannot be taken as proof that they are incapable of deductive reasoning.

Questions 28-35

Classify the following descriptions as a referring

Clark Hull CH

Howard and Tracy Kendler HTK

Micheal Cole and colleagues MC

Simon Hewson SH

Write the appropriate letters in boxes 28-35 on your answer sheet. NB You may use any answer more than once.

28) ..... is cited as famous in the field of psychology.

29) ..... demonstrated that the two-stage experiment involving button-pressing and inserting a marble into a hole poses problems for certain adults as well as children.

30) ..... devised an experiment that investigated deductive reasoning without the use of any marbles.

31) ..... appears to have proved that a change in the apparatus dramatically improves the performance of children of certain ages.

32) ..... used a machine to measure inductive reasoning that replaced button-pressing with drawer-opening.

33) ..... experimented with things that the subjects might have been expected to encounter in everyday life, rather than with a machine.

34) ..... compared the performance of five-year-olds with college students, using the same apparatus with both sets of subjects.

35) ..... is cited as having demonstrated that earlier experiments into children's ability to reason deductively may have led to the wrong conclusions.

Questions 36-40

Do the following statements agree with the information given in Reading Passage 3? In boxes 36-40 on your answer sheet, write

YES if the statement agrees with the information

NO if the statement contradicts the information

NOT GIVEN if there is no information on this in the passage

36. Howard and Tracey Kendler studied under Clark Hull.

37. The Kendlers trained their subjects separately in the two stages of their experiment, but not in how to integrate the two actions.

38. Michael Cole and his colleagues demonstrated that adult performance on inductive reasoning tasks depends on features of the apparatus and procedure.

39. All Hewson's experiments used marbles of the same size.

40. Hewson's modifications resulted in a higher success rate for children of all ages.

4. Bài 4

The Risks of Cigarette Smoke

Discovered in the early 1800s and named 'nicotianine', the oily essence now called nicotine is the main active ingredient of tobacco. Nicotine, however, is only a small component of cigarette smoke, which contains more than 4,700 chemical compounds, including 43 cancer-causing substances. In recent times, scientific research has been providing evidence that years of cigarette smoking vastly increases the risk of developing fatal medical conditions.

In addition to being responsible for more than 85 per cent of lung cancers, smoking is associated with cancers of, amongst others, the mouth, stomach and kidneys, and is thought to cause about 14 per cent of leukemia and cervical cancers. In 1990, smoking caused more than 84,000 deaths, mainly resulting from such problems as pneumonia, bronchitis and influenza. Smoking, it is believed, is responsible for 30 per cent of all deaths from cancer and clearly represents the most important preventable cause of cancer in countries like the United States today.

Passive smoking, the breathing in of the side-stream smoke from the burning of tobacco between puffs or of the smoke exhaled by a smoker, also causes a serious health risk. A report published in 1992 by the US Environmental Protection Agency (EPA) emphasized the health dangers, especially from side-stream smoke. This type of smoke contains more smaller particles and is therefore more likely to be deposited deep in the lungs. On the basis of this report, the EPA has classified environmental tobacco smoke in the highest risk category for causing cancer.

As an illustration of the health risks, in the case of a married couple where one partner is a smoker and one a non-smoker, the latter is believed to have a 30 per cent higher risk of death from heart disease because of passive smoking.

The risk of lung cancer also increases over the years of exposure and the figure jumps to 80 per cent if the spouse has been smoking four packs a day for 20 years. It has been calculated that 17 per cent of cases of lung cancer can be attributed to high levels of exposure to second-hand tobacco smoke during childhood and adolescence.

A more recent study by researchers at the University of California at San Francisco (UCSF) has shown that second-hand cigarette smoke does more harm to non-smokers than to smokers. Leaving aside the philosophical question of whether anyone should have to breathe someone else's cigarette smoke, the report suggests that the smoke experienced by many people in their daily lives is enough to produce substantial adverse effects on a person's heart and lungs. The report, published in the Journal of the American Medical Association (AMA), was based on the researchers' own earlier research but also includes a review of studies over the past few years. The American Medical Association represents about half of all US doctors and is a strong opponent of smoking. The study suggests that people who smoke cigarettes are continually damaging their cardiovascular system, which adapts in order to compensate for the effects of smoking. It further states that people who do not smoke do not have the benefit of their system adapting to the smoke inhalation. Consequently, the effects of passive smoking are far greater on non-smokers than on smokers.

This report emphasizes that cancer is not caused by a single element in cigarette smoke; harmful effects to health are caused by many components. Carbon monoxide, for example, competes with oxygen in red blood cells and interferes with the blood's ability to deliver life-giving oxygen to the heart. Nicotine and other toxins in cigarette smoke activate small blood cells called platelets, which increases the likelihood of blood clots, thereby affecting blood circulation throughout the body.

The researchers criticize the practice of some scientific consultants who work with the tobacco industry for assuming that cigarette smoke has the same impact on smokers as it does on non-smokers. They argue that those scientists are underestimating the damage done by passive smoking and, in support of their recent findings, cite some previous research which points to passive smoking as the cause for between 30,000 and 60,000 deaths from heart attacks each year in the United States. This means that passive smoking is the third most preventable cause of death after active smoking and alcohol-related diseases.

The study argues that the type of action needed against passive smoking should be similar to that being taken against illegal drugs and AIDS (SIDA). The UCSF researchers maintain that the simplest and most cost-effective action is to establish smoke-free work places, schools and public places.

Questions 15-17

Choose the appropriate letters A-D and write them in boxes 15-17 on your answer sheet.

15. According to information in the text, leukaemia and pneumonia

A. are responsible for 84,000 deaths each year.

B. are strongly linked to cigarette smoking.

C. are strongly linked to lung cancer.

D. result in 30 per cent of deaths per year.

16. According to information in the text, intake of carbon monoxide

A. inhibits the flow of oxygen to the heart.

B. increases absorption of other smoke particles.

C. inhibits red blood cell formation.

D. promotes nicotine absorption.

17. According to information in the text, intake of nicotine encourages

A. blood circulation through the body.

B. activity of other toxins in the blood.

C. formation of blood clots.

D. an increase of platelets in the blood.

Questions 18-21

Do the following statements reflect the claims of the writer in Reading Passage 2? In boxes 18-21 on your answer sheet, write:

YES if the statement reflects the claims of the writer

NO if the statement contradicts the claims of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

18. Thirty per cent of deaths in the United States are caused by smoking-related diseases.

19. If one partner in a marriage smokes, the other is likely to take up smoking.

20. Teenagers whose parents smoke are at risk of getting lung cancer at some time during their lives.

21. Opponents of smoking financed the UCSF study.

Questions 22-24

Choose ONE phrase from the list of phrases A-J below to complete each of the following sentences (Questions 22-24). Write the appropriate letters in boxes 22-24 on your answer sheet.

22. Passive smoking ..... .

23. Compared with a non-smoker, a smoker ..... .

24. The American Medical Association ..... .

A. includes reviews of studies in its reports.

B. argues for stronger action against smoking in public places.

C. is one of the two most preventable causes of death.

D. is more likely to be at risk from passive smoking diseases.

E. is more harmful to non-smokers than to smokers.

F. is less likely to be at risk of contracting lung cancer.

G. is more likely to be at risk of contracting various cancers.

H. opposes smoking and publishes research on the subject.

I. is just as harmful to smokers as it is to non-smokers.

J. reduces the quantity of blood flowing around the body.

Questions 25-28

Classify the following statements as being

A. a finding of the UCSF study

B. an opinion of the UCSF study

C. a finding of the EPA report

D. an assumption of consultants to the tobacco industry

Write the appropriate letters A-D in boxes 25-28 on your answer sheet.

NB You may use any letter more than once.

25. Smokers' cardiovascular systems adapt to the intake of environmental smoke.

26. There is a philosophical question as to whether people should have to inhale others' smoke.

27. Smoke-free public places offer the best solution.

28. The intake of side-stream smoke is more harmful than smoke exhaled by a smoker.

5. Bài 5

Highs & Lows

Hormone levels - and hence our moods –may be affected by the weather. Gloomy weather can cause depression, but sunshine appears to raise the spirits. In Britain, for example, the dull weather of winter drastically cuts down the amount of sunlight that is experienced which strongly affects some people. They become so depressed and lacking in energy that their work and social life are affected. This condition has been given the name SAD (Seasonal Affective Disorder). Sufferers can fight back by making the most of any sunlight in winter and by spending a few hours each day under special, full-spectrum lamps. These provide more ultraviolet and blue-green light than ordinary fluorescent and tungsten lights. Some Russian scientists claim that children learn better after being exposed to ultraviolet light. In warm countries, hours of work are often arranged so that workers can take a break, or even a siesta, during the hottest part of the day. Scientists are working to discover the links between the weather and human beings' moods and performance.

It is generally believed that tempers grow shorter in hot, muggy weather. There is no doubt that 'crimes against the person' rise in the summer, when the weather is hotter and fall in the winter when the weather is colder. Research in the United States has shown a relationship between temperature and street riots. The frequency of riots rises dramatically as the weather gets warmer, hitting a peak around 27-30°C. But is this effect really due to a mood change caused by the heat? Some scientists argue that trouble starts more often in hot weather merely because there are more people in the street when the weather is good.

Psychologists have also studied how being cold affects performance. Researchers compared divers working in icy cold water at 5°C with others in

water at 20°C (about swimming pool temperature). The colder water made the divers worse at simple arithmetic and other mental tasks. But significantly, their performance was impaired as soon as they were put into the cold water – before their bodies had time to cool down. This suggests that the low temperature did not slow down mental functioning directly, but the feeling of cold distracted the divers from their tasks.

Psychologists have conducted studies showing that people become less skeptical and more optimistic when the weather is sunny However, this apparently does not just depend on the temperature. An American psychologist studied customers in a temperature-controlled restaurant. They gave bigger tips when the sun was shining and smaller tips when it wasn't, even though the temperature in the restaurant was the same. A link between weather and mood is made believable by the evidence for a connection between behavior and the length of the daylight hours. This, in turn, might involve the level of a hormone called melatonin, produced in the pineal gland in the brain. The amount of melatonin falls with greater exposure to daylight. Research shows that melatonin plays an important part in the seasonal behavior of certain animals. For example, food consumption of stags increases during the winter, reaching a peak in February/ March. It falls again to a low point in May, then rises to a peak in September, before dropping to another minimum in November. These changes seem to be triggered by varying melatonin levels.

In the laboratory, hamsters put on more weight when the nights are getting shorter and their melatonin levels are falling. On the other hand, if they are given injections of melatonin, they will stop eating altogether. It seems that time cues provided by the changing lengths of day and night trigger changes in animals' behavior - changes that are needed to cope with the cycle of the seasons. People's moods too, have been shown to react to the length of the daylight hours. Skeptics might say that longer exposure to sunshine puts people in a

better mood because they associate it with the happy feelings of holidays and freedom from responsibility. However, the belief that rain and murky weather make people more unhappy is borne out by a study in Belgium, which showed that a telephone counseling service gets more telephone calls from people with suicidal feelings when it rains.

When there is a thunderstorm brewing, some people complain of the air being 'heavy' and of feeling irritable, moody and on edge. They may be reacting to the fact that the air can become slightly positively charged when large thunderclouds are generating the intense electrical fields that cause lightning flashes. The positive charge increases the levels of serotonin (a chemical involved in sending signals in the nervous system). High levels of serotonin in certain areas of the nervous system make people more active and reactive and, possibly, more aggressive. When certain winds are blowing, such as the Mistral in southern France and the Fohn in southern Germany, mood can be affected - and the number of traffic accidents rises. It may be significant that the concentration of positively charged particles is greater than normal in these winds. In the United Kingdom, 400,000 ionizers are sold every year. These small machines raise the number of negative ions in the air in a room. Many people claim they feel better in negatively charged air.

Questions 26-28

Choose the appropriate letters A—D and write them in boxes 26—28 on your answer sheet.

26. Why did the divers perform less well in colder conditions?

A. They were less able to concentrate.

B. Their body temperature fell too quickly.

C. Their mental functions were immediately affected by the cold.

D. They were used to swimming pool conditions.

27. The number of daylight hours

A. affects the performance of workers in restaurants.

B. influences animal feeding habits.

C. makes animals like hamsters more active.

D. prepares humans for having greater leisure time.

28. Human irritability may be influenced by

A. how nervous and aggressive people are.

B. reaction to certain weather phenomena.

C. the number of ions being generated by machines.

D. the attitude of people to thunderstorms.

Questions 29-34

Do the following statements agree with the information in Reading Passage 3?

In boxes 29-34 on your answer sheet write:

TRUE if the statement is true according to the passage

FALSE if the statement is false according to the passage

NOT GIVEN if the information is not given in the passage

29. Seasonal Affective Disorder is disrupting children's education in Russia.

30. Serotonin is an essential cause of human aggression.

31. Scientific evidence links 'happy associations with weather' to human mood.

32. A link between depression and the time of year has been established.

33. Melatonin levels increase at certain times of the year.

34. Positively charged ions can influence eating habits.

Questions 35-37: *Choose THREE letters A—G and write them in boxes 35—37 on your answer sheet.*

According to the text which THREE of the following conditions have been scientifically proved to have a psychological effect on humans?

A. lack of negative ions

B. rainy weather

C. food consumption

D. high serotonin levels

E. sunny weather

F. freedom from worry

G. lack of counselling facilities

Questions 38-40: *Complete each of the following statements with the best ending from the box below. Write the appropriate letters A-G in boxes 38—40 on your answer sheet.*

38. It has been established that social tension increases significantly in the United States during .....

39. Research has shown that a hamster's bodyweight increases according to its exposure to.....

40. Animals cope with changing weather and food availability because they are influenced by.....

A. daylight

B. hot weather

C. melatonin

D. moderate temperatures

E. poor co-ordination

F. time cues

G. impaired performance

6. Bài 6

Alternative Medicine in Australia

The first students to study alternative medicine at university level in Australia began their four-year, full-time course at the University of Technology, Sydney, in early 1994. Their course covered, among other therapies, acupuncture. The theory they learnt is based on the traditional Chinese explanation of this ancient healing art: that it can regulate the flow of 'Qi' or energy through pathways in the body. This course reflects how far some alternative therapies have come in their struggle for acceptance by the medical establishment.

Australia has been unusual in the Western world in having a very conservative attitude to natural or alternative therapies, according to Dr Paul Laver, a lecturer in Public Health at the University of Sydney. 'We've had a tradition of doctors being fairly powerful and I guess they are pretty loath to allow any pretenders to their position to come into it.' In many other industrialized countries, orthodox and alternative medicines have worked 'hand in glove' for years. In Europe, only orthodox doctors can prescribe herbal medicine. In Germany, plant remedies account for 10% of the national turnover of pharmaceutical. Americans made more visits to alternative therapist than to orthodox doctors in 1990, and each year they spend about $US 12 billion on the therapies that have not been scientifically tested.

Disenchantment with orthodox medicine has seen the popularity of alternative therapies in Australia climb steadily during the past 20 years. In a 1983 national health survey, 1.9% of people said they had contacted a chiropractor, naturopath, osteopath, acupuncturist or herbalist in the two weeks prior to the survey. By 1990, this figure had risen to 2.6% of the population. The 550,000 consultations with alternative therapists reported in the 1990 survey represented about an eighth of the total number of consultations with medically

qualified personnel covered by the survey, according to Dr Laver and colleagues writing in the Australian Journal of Public Health in 1993. 'A better educated and less accepting public has become disillusion with the experts in general and increasingly skeptical about science and empirically based knowledge,' they said. 'The high standing of professionals, including doctors, has been eroded as a consequence.'

Rather than resisting or criticizing this trend, increasing numbers of Australian doctors, particularly younger ones, are forming group practices with alternative therapists or taking courses themselves, particularly in acupuncture and herbalism. Part of the incentive was financial, Dr Laver said. 'The bottom line is that most general practitioners are business people. If they see potential clientele going elsewhere, they might want to be able to offer a similar service.'

In 1993, Dr Laver and his colleagues published a survey of 289 Sydney people who attended eight alternative therapists' practices in Sydney. These practices offered a wide range of alternative therapies from 25 therapists. Those surveyed had experience chronic illnesses, for which orthodox medicine had been able to provide little relief. They commented that they liked the holistic approach of their alternative therapists and the friendly, concerned and detailed attention they had received. The cold, impersonal manner of orthodox doctors featured in the survey. An increasing exodus from their clinics, coupled with this and a number of other relevant surveys carried out in Australia, all pointing to orthodox doctors' inadequacies, have led mainstream doctors themselves to begin to admit they could learn from the personal style of alternative therapists. Dr Patrick Store, President of the Royal College of General Practitioners, concurs that orthodox doctors could learn a lot about besides manner and advising patients on preventative health from alternative therapists.

According to the Australian Journal of Public Health, 18% of patients visiting alternative therapists do so because they suffer from musculo-skeletal complaints; 12% suffer from digestive problems, which is only 1% more than those suffering from emotional problems. Those suffering from respiratory complaints represent 7% of their patients, and candida sufferers represent an equal percentage. Headache sufferers and those complaining of general ill health represent 6% and 5% of patients respectively, and a further 4% see therapists for general health maintenance.

The survey suggested that complementary medicine is probably a better term than alternative medicine. Alternative medicine appears to be an adjunct, sought in times of disenchantment when conventional medicine seems not to offer the answer.

Question 14 and 15

Choose the correct letter, A, B, C or D. Write your answers in boxes 14 and 15 on your answer sheet.

14. Traditionally, how have Australian doctors differed from doctors in many Western countries?

A. They have worked closely with pharmaceutical companies.

B. They have often worked alongside other therapists.

C. They have been reluctant to accept alternative therapists.

D. They have regularly prescribed alternative remedies.

15. In 1990, Americans

A. were prescribed more herbal medicines than in previous years.

B. consulted alternative therapists more often than doctors.

C. spent more on natural therapies than orthodox medicines.

D. made more complaints about doctors than in previous years.

Questions 16-23

Do the following statements agree with the views of the writer in Reading Passage 2? In boxes 16-23 on your answer sheet, write:

YES if the statement agrees with the views of the writer

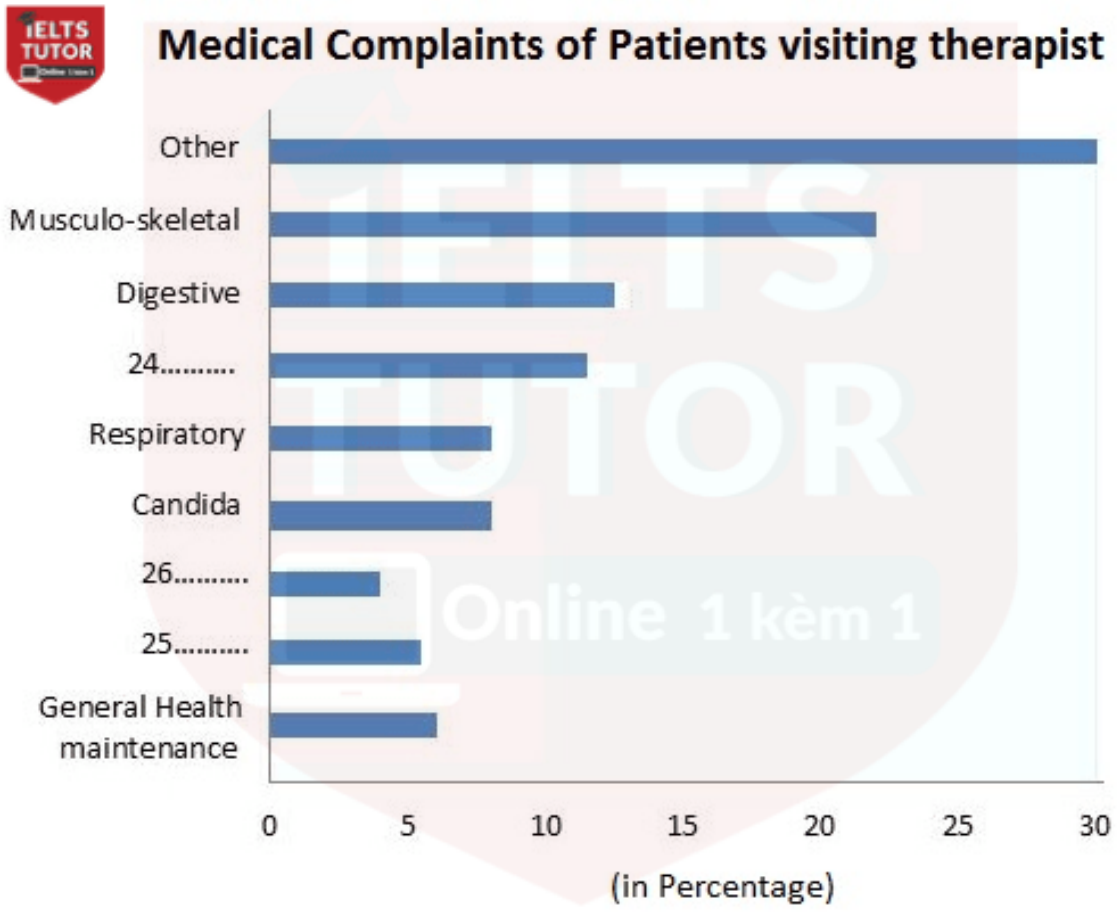
NO if the statements contradicts the views of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

16. Australians have been turning to alternative therapies in increasing numbers over the past 20 years.
17. Between 1983 and 1990 the numbers of patients visiting alternative therapists rose to include a further 8% of the population.
18. The 1990 survey related to 550,000 consultations with alternative therapists.
19. In the past, Australians had a higher opinion of doctors than they do today.
20. Some Australian doctors are retraining in alternative therapies.
21. Alternative therapists earn higher salaries than doctors.
22. The 1993 Sydney survey involved 289 patients who visited alternative therapists for acupuncture treatment.
23. All the patients in the 1993 Sydney survey had long-term medical complaints.

Questions 24 -26

Complete the vertical axis on the table below. Choose NO MORE THAN THREE WORDS from the Reading Passage 2 for each answer. Write your answer in boxes 24-26 on your answer sheet.



7. Bài 7

How much higher? How much faster?

— Limits to human sporting performance are not yet in sight —

Since the early years of the twentieth century, when the International Athletic Federation began keeping records, there has been a steady improvement in how fast athletes run, how high they jump and how far they are bale to hurl massive objects, themselves included, through space. For the so-called power events –that require a relatively brief, explosive release of energy, like the 100-metre sprint and the long jump-times and distances have improved ten to twenty percent. In the endurance events the results have been more dramatic. At the 1908 Olympics, John Hayes of the U.S. team ran to marathon in a time of 2:55:18. In 1999, Morocco's Khalid Khannouchi set a new world record of 2:05:42, almost thirty percent faster.

No one theory can explain improvements in performance, but the most important factor has been genetics. 'The athlete must choose his parents carefully,' says Jesus Dapena, a sports scientist at Indiana University, invoking an oftcited adage. Over the past century, the composition of the human gene pool has not changed appreciably, but with increasing global participation in athletics-and greater rewards to tempt athletes-it is more likely that individuals possessing the unique complement of genes for athletic performance can be identified early. 'Was there someone like [sprinter] Michael Johnson in the 1920s?' Dapena asks. 'I'm sure there was, but his talent was probably never realized.'

Identifying genetically talented individuals is only the first step. Michael Yessis, an emeritus professor of Sports Science at California State University at Fullerton, maintains that 'genetics only determines about one third of what an athlete can do. But with the right training we can go much further with that one

third than we've been going.' Yesis believes that U.S. runners, despite their impressive achievements, are 'running on their genetics'. By applying more scientific methods, 'they're going to go much faster'. These methods include strength training that duplicates what they are doing in their running events as well as plyometrics, a technique pioneered in the former Soviet Union.

Whereas most exercises are designed to build up strength or endurance, plyometrics focuses on increasing power-the rate at which an athlete can expend energy. When a sprinter runs, Yesis explains, her foot stays in contact with the ground for just under a tenth of a second, half of which is devoted to landing and the other half to pushing off. Plyometric exercises help athletes make the best use of this brief interval.

Nutrition is another area that sports trainers have failed to address adequately. 'Many athletes are not getting the best nutrition, even through supplements,' Yessis insists. Each activity has its own nutritional needs. Few coaches, for instance, understand how deficiencies in trace minerals can lead to injuries. Focused training will also play a role in enabling records to be broken. 'If we applied the Russian training model to some of the outstanding runners we have in this country,' Yessis asserts, 'they would be breaking records left and right.' He will not predict by how much, however: 'Exactly what the limits are it's hard to say, but there will be increases even if only by hundredths of a second, as long as our training continues to improve.'

One of the most important new methodologies is biomechanics, the study of the body in motion. A biomechanic films an athlete in action and then digitizes her performance, recording the motion of every joint and limb in three dimensions. By applying Newton's law to these motions, 'we can say that this athlete's run is not fast enough; that this one is not using his arms strongly enough during take-off,' says Dapena, who uses these methods to help high jumpers. To date,

however, biomechanics has made only a small difference to athletic performance.

Revolutionary ideas still come from the athletes themselves. For example, during the 1968 Olympics in Mexico City, a relatively unknown high jumper named Dick Fosbury won the gold by going over the bar backwards, in complete contradiction of all the received high-jumping wisdom, a move instantly dubbed the Fosbury flop. Fosbury himself did not know what he was doing. That understanding took the later analysis of biomechanics specialists. who put their minds to comprehending something that was too complex and unorthodox ever to have been invented through their own mathematical simulations. Fosbury also required another element that lies behind many improvements in athletic performance: an innovation in athletic equipment. In Fosbury's case, it was the cushions that jumpers land on. Traditionally, high jumpers would land in pits filled with sawdust. But by Fosbury's time, sawdust pits had been replaced by soft foam cushions, ideal for flopping.

In the end, most people who examine human performance are humbled by the resourcefulness of athletes and the powers of the human body. 'Once you study athletics, you learn that it's a vexingly complex issue,' says John S.Raglin, a sports psychologist at Indiana University. 'Core performance is not a simple or mundane thing of higher, faster, longer. So many variables enter into the equation, and our understanding in many cases is fundamental. We're got a long way to go.' For the foreseeable future, records will be made to be broken.

Questions 1-6

Do the following statements agree with the information given in Reading Passage? In boxes 1-6 on your answer sheet write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1. Modern official athletic records date from about 1900.
2. There was little improvement in athletic performance before the twentieth century.
3. Performance has improved most greatly in events requiring an intensive burst of energy.
4. Improvements in athletic performance can be fully explained by genetics.
5. The parents of top athletes have often been successful athletes themselves.
6. The growing international importance of athletics means that gifted athletes can be recognised at a younger age.

Questions 7-10

Complete the sentences below with words taken from Reading Passage. Use ONE WORD for each answer. Write your answers in boxes 7-10 on your answer sheet.

7. According to Professor Yessis, American runners are relying for their current success on ……
8. Yessis describes a training approach from the former Soviet Union that aims to develop an athlete's ……
9. Yessis links an inadequate diet to ……..
10. Yessis claims that the key to setting new records is better ……

Questions 11-13

Choose the correct letter, A, B, C or D. Write your answers in boxes 11-13 on your answer sheet.

11. Biomechanics films are proving particularly useful because they enable trainers to

A. highlight areas for improvement in athletes.

B. assess the fitness levels of athletes.

C. select top athletes.

D. predict the success of athletes.

12. Biomechanics specialists used theoretical models to

A. soften the Fosbury flop.

B. create the Fosbury flop.

C. correct the Fosbury flop.

D. explain the Fosbury flop.

13. John S. Raglin believes our current knowledge of athletics is

A. mistaken.

B. basic.

C. diverse.

D. theoretical.

8. Bài 8

Questions 28-31

Reading Passage 3 has five sections A-E. Choose the correct heading for section A and C-E from the list of headings below. Write the correct number i-viii in boxes 28-31 on your answer sheet.

List of Headings

i. The connection between health-care and other human rights

ii. The development of market-based health systems.

iii. The role of the state in health-care

iv. A problem shared by every economically developed country

v. The impact of recent change

vi. The views of the medical establishment

vii. The end of an illusion

viii. Sustainable economic development

28. Section A

Example: Section B. Answer: viii

29. Section C

30. Section D

31. Section E

The Problem of Scarce Resources

Section A

The problem of how health-care resources should be allocated or apportioned so that they are distributed in both the "most just" and "most efficient" way, is not a new one. Every health system in an economically developed society is faced with the need to decide (either formally or informally) what proportion of the community's total resources should be spent on health-care; how resources are to be apportioned; what diseases and disabilities and which forms of treatment are to be given priority; which members of the community are to be given special consideration in respect of their health needs; and which forms of treatment are the most cost-effective.

Section B

What is new is that, from the 1950s onwards, there have been certain general changes in outlook about the finitude of resources as a whole and of health-care resources in particular, as well as more specific changes regarding the clientele of health-care resources and the cost to the community of those resources. Thus, in the 1950s and 1960s, there emerged an awareness in Western societies that resources for the provision of fossil fuel energy were finite and exhaustible and that the capacity of nature or the environment to sustain economic development and population was also finite. In other words, we became aware of the obvious fact that there were 'limits to growth'. The new consciousness that there were also severe limits to health-care resources was part of this general revelation of the obvious. Looking back, it now seems quite incredible that in the national health systems that emerged in many countries in the years immediately after the 1939-45 World War, it was assumed without question that all the basic health needs of any community could be satisfied, at least in principle; the 'invisible hand' of economic progress would provide.

Section C

However, at exactly the same time as this new realization of the finite character of health-care resources was sinking in, an awareness of a contrary kind was developing in Western societies: that people have a basic right to health-care as a necessary condition of a proper human life. Like education, political and legal processes and institutions, public order, communication, transport and money supply, health-care came to be seen as one of the fundamental social facilities necessary for people to exercise their other rights as autonomous human beings. People are not in a position to exercise personal liberty and to be self-determining if they are poverty-stricken, or deprived of basic education, or do not live within a context of law and order. In the same way, basic health-care is a condition of the exercise of autonomy.

Section D

Although the language of 'rights' sometimes leads to confusion, by the late 1970s it was recognized in most societies that people have a right to health-care (though there has been considerable resistance in the United Sates to the idea that there is a formal right to health-care). It is also accepted that this right generates an obligation or duty for the state to ensure that adequate health-care resources are provided out of the public purse. The state has no obligation to provide a health-care system itself, but to ensure that such a system is provided. Put another way, basic health-care is now recognized as a 'public good', rather than a 'private good' that one is expected to buy for oneself. As the 1976 declaration of the World Health Organisation put it: 'The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition'. As has just been remarked, in a liberal society basic health is seen as one of the indispensable conditions for the exercise of personal autonomy.

Section E

Just at the time when it became obvious that health-care resources could not possibly meet the demands being made upon them, people were demanding that their fundamental right to health-care be satisfied by the state. The second set of more specific changes that have led to the present concern about the distribution of health-care resources stems from the dramatic rise in health costs in most OECD countries, accompanied by large-scale demographic and social changes which have meant, to take one example, that elderly people are now major (and relatively very expensive) consumers of health-care resources. Thus in OECD countries as a whole, health costs increased from 3.8% of GDP in 1960 to 7% of GDP in 1980, and it has been predicted that the proportion of health costs to GDP will continue to increase. (In the US the current figure is about 12% of GDP, and in Australia about 7.8% of GDP.)

As a consequence, during the 1980s a kind of doomsday scenario (analogous to similar doomsday extrapolations about energy needs and fossil fuels or about population increases) was projected by health administrators, economists and politicians. In this scenario, ever-rising health costs were matched against static or declining resources.

Note

OECD: Organisation for Economic Cooperation and Development
GDP: Gross Domestic Products

Questions 32-35

Classify the following as first occurring

A between 1945 and 1950

B between 1950 and 1980

C after 1980

Write the correct letter A, B or C in boxes 32-35 on your answer sheet.

32. the realisation that the resources of the national health system were limited
33. a sharp rise in the cost of health-care.
34. a belief that all the health-care resources the community needed would be produced by economic growth
35. an acceptance of the role of the state in guaranteeing the provision of health-care.

Questions 36-40: *Do the following statements agree with the view of the writer in Reading Passage 3? In boxes 136-40 on your answer sheet, write:*

YES if the statement agrees with the views of the writer

NO if the statement contradicts the views of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

36. Personal liberty and independence have never been regarded as directly linked to health-care.
37. Health-care came to be seen as a right at about the same time that the limits of health-care resources became evident.
38. IN OECD countries population changes have had an impact on health-care costs in recent years.
39. OECD governments have consistently underestimated the level of health-care provision needed.
40. In most economically developed countries the elderly will to make special provision for their health-care in the future.

9. Bài 9

What's so funny?

John McCrone reviews recent research on humour.

The joke comes over the headphones: ' Which side of a dog has the most hair? The left.' No, not funny. Try again. ' Which side of a dog has the most hair? The outside.' Hah! The punchline is silly yet fitting, tempting a smile, even a laugh. Laughter has always struck people as deeply mysterious, perhaps pointless. The writer Arthur Koestler dubbed it the luxury reflex: 'unique in that it serves no apparent biological purpose'.

Theories about humour have an ancient pedigree. Plato expressed the idea that humour is simply a delighted feeling of superiority over others. Kant and Freud felt that joke-telling relies on building up a psychic tension which is safely punctured by the ludicrousness of the punchline. But most modern humour theorists have settled on some version of Aristotle's belief that jokes are based on a reaction to or resolution of incongruity, when the punchline is either a nonsense or, though appearing silly, has a clever second meaning.

Graeme Ritchie, a computational linguist in Edinburgh, studies the linguistic structure of jokes in order to understand not only humour but language understanding and reasoning in machines. He says that while there is no single format for jokes, many revolve around a sudden and surprising conceptual shift. A comedian will present a situation followed by an unexpected interpretation that is also apt.

So even if a punchline sounds silly, the listener can see there is a clever semantic fit and that sudden mental 'Aha!' is the buzz that makes us laugh. Viewed from this angle, humour is just a form of creative insight, a sudden leap to a new perspective.

However, there is another type of laughter, the laughter of social appeasement and it is important to understand this too. Play is a crucial part of development in most young mammals. Rats produce ultrasonic squeaks to prevent their scuffles turning nasty. Chimpanzees have a 'play-face' - a gaping expression accompanied by a panting 'ah, ah' noise. In humans, these signals have mutated into smiles and laughs. Researchers believe social situations, rather than cognitive events such as jokes, trigger these instinctual markers of play or appeasement. People laugh on fairground rides or when tickled to flag a play situation, whether they feel amused or not.

Both social and cognitive types of laughter tap into the same expressive machinery in our brains, the emotion and motor circuits that produce smiles and excited vocalisations. However, if cognitive laughter is the product of more general thought processes, it should result from more expansive brain activity. Psychologist Vinod Goel investigated humour using the new technique of 'single event' functional magnetic resonance imaging (fMRI). An MRI scanner uses magnetic fields and radio waves to track the changes in oxygenated blood that accompany mental activity. Until recently, MRI scanners needed several minutes of activity and so could not be used to track rapid thought processes such as comprehending a joke. New developments now allow half-second 'snapshots' of all sorts of reasoning and problem-solving activities.

Although Goel felt being inside a brain scanner was hardly the ideal place for appreciating a joke, he found evidence that understanding a joke involves a widespread mental shift. His scans showed that at the beginning of a joke the listener'$ prefrontal cortex lit up, particularly the right prefrontal believed to be critical for problem solving. But there was also activity in the temporal lobes at the side of the head (consistent with attempts to rouse stored knowledge) and in many other brain areas. Then when the punchline arrived, a new area sprang

to life -the orbital prefrontal cortex. This patch of brain tucked behind the orbits of the eyes is associated with evaluating information.

Making a rapid emotional assessment of the events of the moment is an extremely demanding job for the brain, animal or human. Energy and arousal levels may need, to be retuned in the blink of an eye. These abrupt changes will produce either positive or negative feelings. The orbital cortex, the region that becomes active in Goel's experiment, seems the best candidate for the site that feeds such feelings into higher-level thought processes, with its close connections to the brain's sub-cortical arousal apparatus and centres of metabolic control.

All warm-blooded animals make constant tiny adjustments in arousal in response to external events, but humans, who have developed a much more complicated internal life as a result of language, respond emotionally not only to their surroundings, but to their own thoughts. Whenever a sought-for answer snaps into place, there is a shudder of pleased recognition. Creative discovery being pleasurable, humans have learned to find ways of milking this natural response. The fact that jokes tap into our general evaluative machinery explains why the line between funny and disgusting, or funny and frightening, can be so fine. Whether a joke gives pleasure or pain depends on a person's outlook.

Humour may be a luxury, but the mechanism behind it is no evolutionary accident. As Peter Derks, a psychologist at William and Mary College in Virginia, says: 'I like to think of humour as the distorted mirror of the mind. It's creative, perceptual, analytical and lingual. If we can figure out how the mind processes humour, then we'll have a pretty good handle on how it works in general.

Questions 14-20

Do the following statements agree with the information given in Reading Passage 2? In boxes 14-20 on your answer sheet, write:

TRUE if the statement agrees with the information

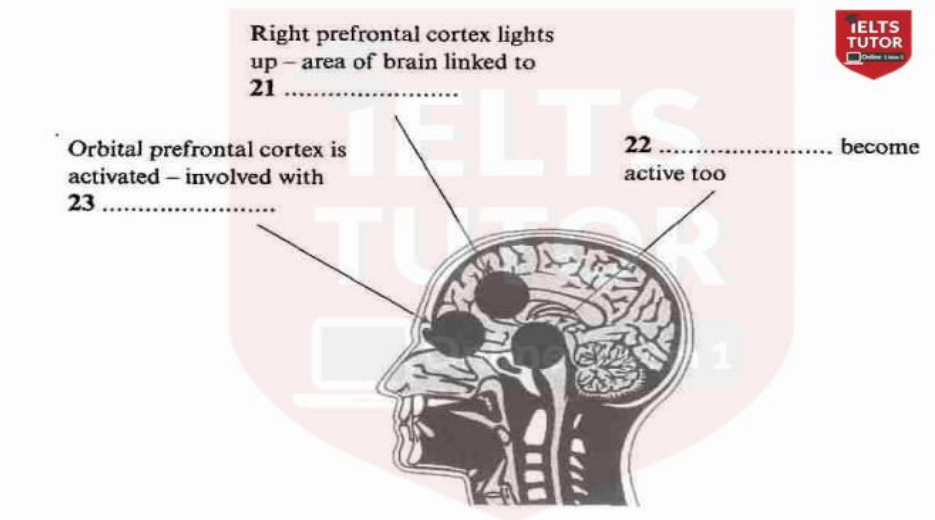
FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

14. Arthur Koestler considered laughter biologically important in several ways.
15. Plato believed humour to be a sign of above-average intelligence.
16. Kant believed that a successful joke involves the controlled release of nervous energy.
17. Current thinking on humour has largely ignored Aristotle's view on the subject.
18. Graeme Ritchie's work links jokes to artificial intelligence.
19. Most comedians use personal situations as a source of humour.
20. Chimpanzees make particular noises when they are playing.

Questions 21-23: The diagram below shows the areas of the brain activated by jokes.

Label the diagram. Choose NO MORE THAN TWO WORDS from the passage for each answer. Write your answers in boxes 11-23 on your answer sheet.



Questions 24-27

Complete each sentence with the correct ending A-G below. Write the correct letter A-G in boxes 24-27 on your answer sheet.

24. One of the brain's most difficult tasks is to

25. Because of the language they have developed, humans

26. Individual responses to humour

27. Peter Derks believes that humour

A. react to their own thoughts.

B. helped create language in humans.

C. respond instantly to whatever is happening.

D. may provide valuable information about the operation of the brain.

E. cope with difficult situations.

F. relate to a person's subjective views.

G. led our ancestors to smile and then laugh.

10. Bài 10

Lack of sleep

Section A

It is estimated that the average man or woman needs between seven-and-a-half and eight hours' sleep a night. Some can manage on a lot less. Baroness Thatcher, for example, was reported to be able to get by on four hours' sleep a night when she was Prime Minister of Britain. Dr Jill Wilkinson, senior lecturer in psychology at Surrey University and co-author of 'Psychology in Counselling and Therapeutic Practice', states that healthy individuals sleeping less than five hours or even as little as two hours in every 24 hours are rare, but represent a sizeable minority.

Section B

The latest beliefs are that the main purposes of sleep are to enable the body to rest and replenish, allowing time for repairs to take place and for tissue to be regenerated. One supporting piece of evidence for this rest-and-repair theory is that production of the growth hormone somatotropin, which helps tissue to regenerate, peaks while we are asleep. Lack of sleep, however, can compromise the immune system, muddle thinking, cause depression, promote anxiety and encourage irritability.

Section C

Researchers in San Diego deprived a group of men of sleep between 1am and 5am on just one night, and found that levels of their bodies' natural defences against viral infections had fallen significantly when measured the following morning. 'Sleep is essential for our physical and emotional well-being and there are few aspects of daily living that are not disrupted by the lack of it', says Professor William Regelson of Virginia University, a specialist in insomnia.

'Because it can seriously undermine the functioning of the immune system, sufferers are vulnerable to infection.'

Section D

For many people, lack of sleep is rarely a matter of choice. Some have problems getting to sleep, others with staying asleep until the morning. Despite popular belief that sleep is one long event, research shows that, in an average night, there are five stages of sleep and four cycles, during which the sequence of stages is repeated.

In the first light phase, the heart rate and blood pressure go down and the muscles relax. In the next two stages, sleep gets progressively deeper. In stage four, usually reached after an hour, the slumber is so deep that, if awoken, the sleeper would be confused and disorientated. It is in this phase that sleep-walking can occur, with an average episode lasting no more than 15 minutes.

In the fifth stage, the rapid eye movement (REM) stage, the heartbeat quickly gets back to normal levels, brain activity accelerates to daytime heights and above and the eyes move constantly beneath closed lids as if the sleeper is looking at something. During this stage, the body is almost paralysed. This REM phase is also the time when we dream.

Section E

Sleeping patterns change with age, which is why many people over 60 develop insomnia. In America, that age group consumes almost half the sleep medication on the market. One theory for the age-related change is that it is due to hormonal changes. The temperature General Training: Reading and Writing rise occurs at daybreak in the young, but at three or four in the morning in the elderly. Age aside, it is estimated that roughly one in three people suffer some kind of sleep disturbance. Causes can be anything from pregnancy and stress to alcohol and heart disease. Smoking is a known handicap to sleep, with

one survey showing that ex-smokers got to sleep in 18 minutes rather than their earlier average of 52 minutes.

Section F

Apart from self-help therapy such as regular exercise, there are psychological treatments, including relaxation training and therapy aimed at getting rid of pre-sleep worries and anxieties. There is also sleep reduction therapy, where the aim is to improve sleep quality by strictly regulating the time people go to bed and when they get up. Medication is regarded by many as a last resort and often takes the form of sleeping pills, normally benzodiazepines, which are minor tranquillisers.

Section G

Professor Regelson advocates the use of melatonin for treating sleep disorders. Melatonin is a naturally secreted hormone, located in the pineal gland deep inside the brain. The main function of the hormone is to control the body's biological clock, so we know when to sleep and when to wake. The gland detects light reaching it through the eye; when there is no light, it secretes the melatonin into the bloodstream, lowering the body temperature and helping to induce sleep. Melatonin pills contain a synthetic version of the hormone and are commonly used for jet lag as well as for sleep disturbance. John Nicholls, sales manager of one of America's largest health food shops, claims that sales of the pill have increased dramatically. He explains that it is sold in capsules, tablets, lozenges and mixed with herbs. It is not effective for all insomniacs, but many users have weaned themselves off sleeping tablets as a result of its application.

Questions 28-35

The passage has seven sections labelled A-G. Write the correct letter A-G in boxes 28-35 on your answer sheet.

NB You may use any letter more than once.

Which section contains the following information?

28. the different amounts of sleep that people require
29. an investigation into the results of sleep deprivation
30. some reasons why people may suffer from sleep disorders
31. lifestyle changes which can help overcome sleep-related problems
32. a process by which sleep helps us to remain mentally and physically healthy
33. claims about a commercialised man-made product for sleeplessness
34. the role of physical changes in sleeping habits
35. the processes involved during sleep

Questions 36-40

Do the following statements agree with the information given in the passage?

In boxes 9-13 on your answer sheet, write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

36. Sleep can cure some illnesses.
37. The various stages of sleep occur more than once a night.
38. Dreaming and sleep-walking occur at similar stages of sleep.
39. Sleepers move around a lot during the REM stage of sleep.
40. The body temperature rises relatively early in elderly people.

11. Bài 11

Australia's Sporting Success

A. They play hard, they play often, and they play to win. Australian sports teams win more than their fair share of titles, demolishing rivals with seeming ease. How do they do it? A big part of the secret is an extensive and expensive network of sporting academies underpinned by science and medicine. At the Australian Institute of Sport (AIS), hundreds of youngsters and pros live and train under the eyes of coaches. Another body, the Australian Sports Commission (ASC), finances programmes of excellence in a total of 96 sports for thousands of sportsmen and women. Both provide intensive coaching, training facilities and nutritional advice.

B. Inside the academies, science takes centre stage. The AIS employs more than 100 sports scientists and doctors, and collaborates with scores of others in universities and research centres. AIS scientists work across a number of sports, applying skills learned in one - such as building muscle strength in golfers - to others, such as swimming and squash. They are backed up by technicians who design instruments to collect data from athletes. They all focus on one aim: winning. 'We can't waste our time looking at ethereal scientific questions that don't help the coach work with an athlete and improve performance.' says Peter Fricker, chief of science at AIS.

C. A lot of their work comes down to measurement - everything from the exact angle of a swimmers dive to the second-by-second power output of a cyclist. This data is used to wring improvements out of athletes. The focus is on individuals, tweaking performances to squeeze an extra hundredth of a second here, an extra millimetre there. No gain is too slight to bother with. It's the tiny, gradual improvements that add up to world-beating results. To demonstrate how the system works, Bruce Mason at AIS shows off the prototype of a 3D

analysis tool for studying swimmers. A wire-frame model of a champion swimmer slices through the water, her arms moving in slow motion. Looking side-on, Mason measures the distance between strokes. From above, he analyses how her spine swivels. When fully developed, this system will enable him to build a biomechanical profile for coaches to use to help budding swimmers. Mason's contribution to sport also includes the development of the SWAN (SWimming ANalysis) system now used in Australian national competitions. It collects images from digital cameras running at 50 frames a second and breaks down each part of a swimmers performance into factors that can be analysed individually - stroke length, stroke frequency, the average duration of each stroke, velocity, start, lap and finish times, and so on. At the end of each race, SWAN spits out data on each swimmer.

D. 'Take a look.' says Mason, pulling out a sheet of data. He points out the data on the swimmers in second and third place, which shows that the one who finished third actually swam faster. So why did he finish 35 hundredths of a second down? 'His turn times were 44 hundredths of a second behind the other guy.' says Mason. 'If he can improve on his turns, he can do much better.' This is the kind of accuracy that AIS scientists' research is bringing to a range of sports. With the Cooperative Research Centre for Micro Technology in Melbourne, they are developing unobtrusive sensors that will be embedded in an athlete's clothes or running shoes to monitor heart rate, sweating, heat production or any other factor that might have an impact on an athlete's ability to run. There's more to it than simply measuring performance. Fricker gives the example of athletes who may be down with coughs and colds 11 or 12 times a year. After years of experimentation, AIS and the University of Newcastle in New South Wales developed a test that measures how much of the immune-system protein immunoglobulin A is present in athletes' saliva. If IgA levels suddenly fall below a certain level, training is eased or dropped

altogether. Soon, IgA levels start rising again, and the danger passes. Since the tests were introduced, AIS athletes in all sports have been remarkably successful at staying healthy.

E. Using data is a complex business. Well before a championship, sports scientists and coaches start to prepare the athlete by developing a 'competition model', based on what they expect will be the winning times. 'You design the model to make that time.' says Mason. 'A start of this much, each free-swimming period has to be this fast, with a certain stroke frequency and stroke length, with turns done in these times'. All the training is then geared towards making the athlete hit those targets, both overall and for each segment of the race. Techniques like these have transformed Australia into arguably the world's most successful sporting nation.

F. Of course, there's nothing to stop other countries copying - and many have tried. Some years ago, the AIS unveiled coolant-lined jackets for endurance athletes. At the Atlanta Olympic Games in 1996, these sliced as much as two per cent off cyclists' and rowers times. Now everyone uses them. The same has happened to the altitude tent', developed by AIS to replicate the effect of altitude training at sea level. But Australia's success story is about more than easily copied technological fixes, and up to now no nation has replicated its all-encompassing system.

Questions 1-7: *Reading Passage 1 has six paragraphs, A-F. Write the correct letter A-F in boxes 1-7 on your answer sheet. NB You may use any letter more than once*

Which paragraph contains the following information?

1. a reference to the exchange of expertise between different sports
2. an explanation of how visual imaging is employed in investigations
3. a reason for narrowing the scope of research activity
4. how some AIS ideas have been reproduced
5. how obstacles to optimum achievement can be investigated
6. an overview of the funded support of athletes
7. how performance requirements are calculated before an event

Questions 8-11: *Classify the following techniques according to whether the writer states they*

A. are currently exclusively used by Australians

B. will be used in the future by Australians

C. are currently used by both Australians and their rivals

Write the correct letter A, B, C or D in boxes 8-11 on your answer sheet.

8. Cameras
9. sensors
10. protein tests
11. altitude tents

Questions 12 and 13: *Choose NO MORE THAN THREE WORDS AND/OR A NUMBER from the Reading Passage for each answer. Write your answers in boxes 12 and 13 on your answer sheet.*

12. What is produced to help an athlete plan their performance in an event?
13. By how much did some cyclists' performance improve at the 1996 Olympic Games?

12. Bài 12

Greying Population Stays in the Pink

Elderly people are growing healthier, happier and more independent, say American scientists. The results of a 14-year study to be announced later this month reveal that the diseases associated with old age are afflicting fewer and fewer people and when they do strike, it is much later in life.

In the last 14 years, the National Long-term Health Care Survey has gathered data on the health and lifestyles of more than 20,000 men and women over 65. Researchers, now analysing the results of data gathered in 1994, say arthritis, high blood pressure and circulation problems - the major medical complaints in this age group - are troubling a smaller proportion every year. And the data confirms that the rate at which these diseases are declining continues to accelerate. Other diseases of old age - dementia, stroke, arteriosclerosis and emphysema - are also troubling fewer and fewer people.

'It really raises the question of what should be considered normal ageing,' says Kenneth Manton, a demographer from Duke University in North Carolina. He says the problems doctors accepted as normal in a 65-year-old in 1982 are often not appearing until people are 70 or 75.

Clearly, certain diseases are beating a retreat in the face of medical advances. But there may be other contributing factors. Improvements in childhood nutrition in the first quarter of the twentieth century, for example, gave today's elderly people a better start in life than their predecessors.

On the downside, the data also reveals failures in public health that have caused surges in some illnesses. An increase in some cancers and bronchitis may reflect changing smoking habits and poorer air quality, say the researchers. 'These may be subtle influences,' says Manton, 'but our subjects

have been exposed to worse and worse pollution for over 60 years. It's not surprising we see some effect.'

One interesting correlation Manton uncovered is that better-educated people are likely to live longer. For example, 65-year-old women with fewer than eight years of schooling are expected, on average, to live to 82. Those who continued their education live an extra seven years. Although some of this can be attributed to a higher income, Manton believes it is mainly because educated people seek more medical attention.

The survey also assessed how independent people over 65 were, and again found a striking trend. Almost 80% of those in the 1994 survey could complete everyday activities ranging from eating and dressing unaided to complex tasks such as cooking and managing their finances. That represents a significant drop in the number of disabled old people in the population. If the trends apparent in the United States 14 years ago had continued, researchers calculate there would be an additional one million disabled elderly people in today's population. According to Manton, slowing the trend has saved the United States government's Medicare system more than $200 billion, suggesting that the greying of America's population may prove less of a financial burden than expected.

The increasing self-reliance of many elderly people is probably linked to a massive increase in the use of simple home medical aids. For instance, the use of raised toilet seats has more than doubled since the start of the study, and the use of bath seats has grown by more than 50%. These developments also bring some health benefits, according to a report from the MacArthur Foundation's research group on successful ageing. The group found that those elderly people who were able to retain a sense of independence were more likely to stay healthy in old age.

Maintaining a level of daily physical activity may help mental functioning, says Carl Cotman, a neuroscientist at the University of California at Irvine. He found that rats that exercise on a treadmill have raised levels of brain-derived neurotrophic factor coursing through their brains. Cotman believes this hormone, which keeps neurons functioning, may prevent the brains of active humans from deteriorating.

As part of the same study, Teresa Seeman, a social epidemiologist at the University of Southern California in Los Angeles, found a connection between self-esteem and stress in people over 70. In laboratory simulations of challenging activities such as driving, those who felt in control of their lives pumped out lower levels of stress hormones such as cortisol. Chronically high levels of these hormones have been linked to heart disease.

But independence can have drawbacks. Seeman found that elderly people who felt emotionally isolated maintained higher levels of stress hormones even when asleep. The research suggests that older people fare best when they feel independent but know they can get help when they need it.

'Like much research into ageing, these results support common sense,' says Seeman. They also show that we may be underestimating the impact of these simple factors. 'The sort of thing that your grandmother always told you turns out to be right on target,' she says.

Questions 14-22: *Complete the summary using the list of words, A-Q below. Write the correct letter, A-Q, in boxes 14-22 on your answer sheet.*

Research carried out by scientists in the United States has shown that the proportion of people over 65 suffering from the most common age-related medical problems is 14 ..... and that the speed of this change is 15.....
It also seems that these diseases ere affecting people 16 ..... in life than they did in the past. This is largely due to developments in 17 ..... , but other

factors such as improved 18 ..... may also be playing a part. Increases in some other illnesses may be due to changes in personal habits and to 19 ..... The research establishes a link between levels of 20 ..... and life expectancy. It also shows that there has been a considerable reduction in the number of elderly people who are 21 ..... which means that the 22 ..... involved in supporting this section of the population may be less than previously predicted.

A. cost	B. falling	C. technology
D. undernourished	E. earlier	F. later
G. disabled	H. more	I. Increasing
J. nutrition	K. education	L. constant
M. medicine	N. pollution	O. environmental
P. health	Q. independent	

Questions 23-26: *Complete each sentence with the correct ending, A-H, below. Write the correct letter, A-H, in boxes 23-26 on your answer sheet.*

23. Home medical aids
24. Regular amounts or exercise
25. Feelings of control over life
26. Feelings of loneliness

A. may cause heart disease.
B. can be helped by hormone treatment.
C. may cause rises in levels of stress hormones.
D. have cost the United States government more than $200 billion.
E. may help prevent mental decline.
F. may get stronger at night.
G. allow old people to be more independent.
H. can reduce stress in difficult situations.

13. Bài 13

The Search for the Anti-aging Pill

In government laboratories and elsewhere, scientists are seeking a drug able to prolong life and youthful vigor. Studies of caloric restriction are showing the way.

As researchers on aging noted recently, no treatment on the market today has been proved to slow human aging- the build-up of molecular and cellular damage that increases vulnerability to infirmity as we grow older. But one intervention, consumption of a low-calorie* yet nutritionally balanced diet, works incredibly well in a broad range of animals, increasing longevity and prolonging good health. Those findings suggest that caloric restriction could delay aging and increase longevity in humans, too.

Unfortunately, for maximum benefit, people would probably have to reduce their caloric intake by roughly thirty percent, equivalent to dropping from 2,500 calories a day to 1, 750. Few mortals could stick to that harsh a regimen, especially for years on end. But what if someone could create a pill that mimicked the physiological effects of eating less without actually forcing people to eat less? Could such a 'caloric-restriction mimetic', as we call it, enable people to stay healthy longer, postponing age-related disorders (such as diabetes, arteriosclerosis, heart disease and cancer) until very lace in life? Scientists first posed this question in the mid-1990s, after researchers came upon a chemical agent that in rodents seemed to reproduce many of caloric restriction's benefits. No compound that would safely achieve the same feat in people has been found yet, but the search has been informative and has fanned hope that caloric-restriction (CR) mimetics can indeed be developed eventually.

The benefits of caloric restriction

The hunt for CR mimetics grew out of a desire to better understand caloric restriction's many effects on the body. Scientists first recognized the value of the practice more than 60 years ago, when they found that rats fed a low-calorie diet lived longer on average than free-feeding rats and also had a reduced incidence of conditions that become increasingly common in old age. What is more, some of the treated animals survived longer than the oldest-living animals in the control group, which means that the maximum lifespan (the oldest attainable age), not merely the normal lifespan, increased. Various interventions, such as infection-fighting drugs, can increase a population's average survival time, but only approaches that slow the body's rate of aging will increase the maximum lifespan.

The rat findings have been replicated many times and extended to creatures ranging from yeast to fruit flies, worms, fish, spiders, mice and hamsters. Until fairly recently, the studies were limited short-lived creatures genetically distant from humans. But caloric-restriction projects underway in two species more closely related to humans- rhesus and squirrel monkeys- have scientists optimistic that CR mimetics could help people.

The monkey projects demonstrate that compared with control animals that eat normally. caloric-restricted monkeys have lower body temperatures and levels of the pancreatic hormone insulin, and they retain more youthful levels of certain hormones that tend to fall with age.

The caloric-restricted animals also look better on indicators of risk for age-related diseases. For example, they have lower blood pressure and triglyceride levels (signifying a decreased likelihood of heart disease) and they have more normal blood glucose levels (pointing to a reduced risk for diabetes, which is marked by unusually high blood glucose levels). Further, it has recently been shown that rhesus monkeys kept on caloric-restricted diets for an extended time (nearly 15 years) have less chronic disease. They and the other monkeys must

be followed still longer, however, to know whether low-calorie intake can increase both average and maximum lifespans in monkeys. Unlike the multitude of elixirs being touted as the latest anti-aging cure, CR mimetics would alter fundamental processes that underlie aging. We aim to develop compounds that fool cells into activating maintenance and repair.

How a prototype caloric-restriction mimetic works

The best-studied candidate for a caloric-restriction mimetic, 2DG (2-deoxy-D-glucose), works by interfering with the way cells process glucose, it has proved toxic at some doses in animals and so cannot be used in humans. But it has demonstrated that chemicals can replicate the effects of caloric restriction; the trick is finding the right one.

Cells use the glucose from food to generate ATP (adenosine triphosphate), the molecule that powers many activities in the body. By limiting food intake, caloric restriction minimizes the amount of glucose entering cells and decreases ATP generation. When 2DG is administered to animals that eat normally, glucose reaches cells in abundance but the drug prevents most of it from being processed and thus reduces ATP synthesis. Researchers have proposed several explanations for why interruption of glucose processing and ATP production might retard aging. One possibility relates to the ATP-making machinery's emission of free radicals, which are thought to contribute to aging and t such age-related diseases as cancer by damaging cells. Reduced operation of the machinery should limit their production and thereby constrain the damage. Another hypothesis suggests that decreased processing of glucose could indicate to cells that food is scarce (even if it isn't) and induce them to shift into an anti-aging mode that emphasizes preservation of the organism over such 'luxuries' as growth and reproduction.

calorie: a measure of the energy value of food.

Questions 28-32

Do the following statements agree with the claims of the writer in Reading Passage 3? In boxes 28-32 on your answer sheet, write:

YES if the statement t agrees with the claims of the writer

NO if the statement contradicts the claims of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

28. Studies show drugs available today can delay the process of growing old.
29. There is scientific evidence that eating fewer calories may extend human life.
30. Not many people are likely to find a caloric-restricted diet attractive.
31. Diet-related diseases are common in older people.
32. In experiments, rats who ate what they wanted to lead shorter lives than rats on a low calorie diet.

Questions 33-37

Classify the following descriptions as relating to:

A. caloric-restricted mimetic

B. control monkeys

C. neither caloric-restricted monkeys nor control monkeys

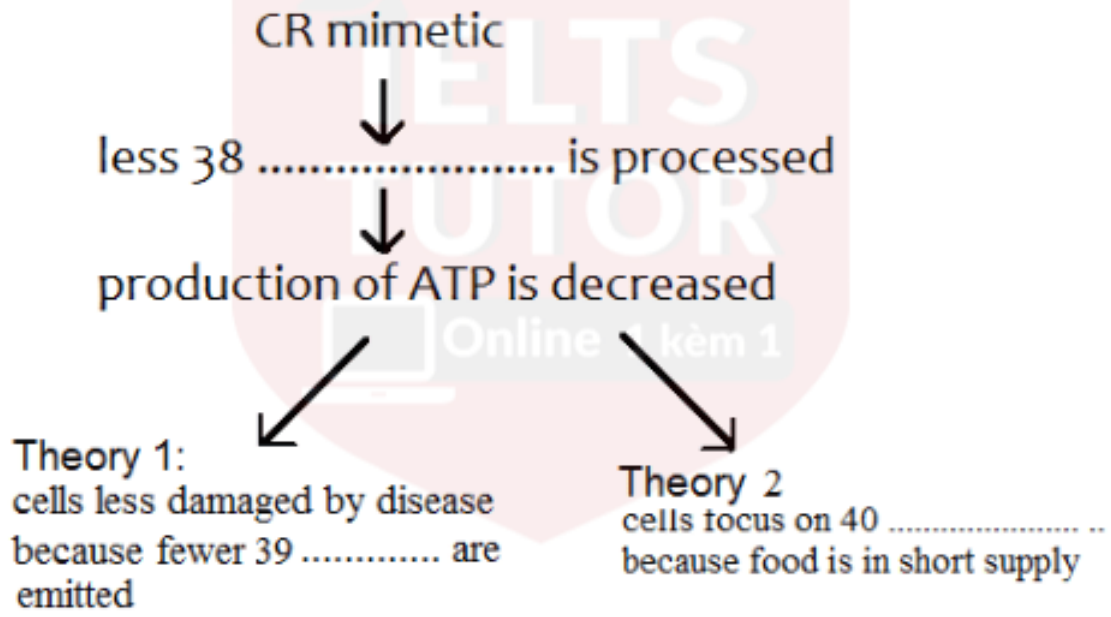
Write the correct letter, A, B or C, in boxes 33-37 on your answer sheet.

33. Monkeys were less likely to become diabetic.
34. Monkeys experienced more chronic disease.
35. Monkeys have been shown to experience a longer than average life span.
36. Monkeys enjoyed a reduced chance of heart disease.
37. Monkeys produced greater quantities of insulin.

Questions 38-40

Complete the flow chart below. Choose NO MORE THAN TWO WORDS from the passage for each answer. Write your answers in boxes 38-40 on your answer sheet.

How a caloric-restriction mimetic works



14. Bài 14

Questions 1-7

Reading Passage 1 has seven paragraphs, A-G. Choose the correct heading for each paragraph from the list of headings below. Write the correct number, i-x, in boxes 1-7 on your answer sheet.

List of Headings

i. Not all doctors are persuaded

ii. Choosing the best offers

iii. Who is responsible for the increase in promotions?

iv. Fighting the drug companies

v. An example of what doctors expect from drug companies

vi. Gifts include financial incentives

vii. Research shows that promotion works

viii. The high costs of research

ix. The positive side of drugs promotion

x. Who really pays for doctors' free gifts?

1. Paragraph A
2. Paragraph B
3. Paragraph C
4. Paragraph D
5. Paragraph E
6. Paragraph F
7. Paragraph G

Doctoring sales

Pharmaceuticals is one of the most profitable industries in North America. But do the drugs industry's sales and marketing strategies go too far?

A. A few months ago Kim Schaefer, sales representative of a minor global pharmaceutical company, walked into a medical center in New York to bring information and free samples of her company's latest products. That day she was lucky- a doctor was available to see her. 'The last rep offered me a trip to Florida. What do you have?' the physician asked. He was only half joking.

B. What was on offer that day was a pair of tickets for a New York musical. But on any given day what Schaefer can offer is typical for today's drugs rep -a car trunk full of promotional gifts and gadgets, a budget that could buy lunches and dinners for a small county hundreds of free drug samples and the freedom to give a physician $200 to prescribe her new product to the next six patients who fit the drug's profile. And she also has a few $ 1,000 honoraria to offer in exchange for doctors' attendance at her company's next educational lecture.

C. Selling Pharmaceuticals is a daily exercise in ethical judgment. Salespeople like Schaefer walk the line between the common practice of buying a prospect's time with a free meal, and bribing doctors to prescribe their drugs. They work in an industry highly criticized for its sales and marketing practices, but find themselves in the middle of the age-old chicken-or-egg question - businesses won't use strategies that don't work, so are doctors to blame for the escalating extravagance of pharmaceutical marketing? Or is it the industry's responsibility to decide the boundaries?

D. The explosion in the sheer number of salespeople in the Reid- and the amount of funding used to promote their causes- forces close examination of the pressures, influences and relationships between drug reps and doctors. Salespeople provide much-needed information and education to physicians. In many cases the glossy brochures, article reprints and prescriptions they deliver

are primary sources of drug education for healthcare givers. With the huge investment the industry has placed in face-to-face selling, sales people have essentially become specialists in one drug or group of drugs - a tremendous advantage in getting the attention of busy doctors in need of quick information.

E. But the sales push rarely stops in the office. The flashy brochures and pamphlets left by the sales reps are often followed up with meals at expensive restaurants, meetings in warm and sunny places, and an inundation of promotional gadgets. Rarely do patients watch a doctor write with a pen that isn't emblazoned with a drug's name, or see a nurse use a tablet not bearing a pharmaceutical company's logo. Millions of dollars are spent by pharmaceutical companies on promotional products like coffee mugs, shirts, umbrellas, and golf balls. Money well spent? It's hard to tell. I've been the recipient of golf balls from one company and I use them, but it doesn't make me prescribe their medicine,' says one doctor.' I tend to think I'm not influenced by what they give me.'

F. Free samples of new and expensive drugs might be the single most effective way of getting doctors and patients to become loyal to a product. Salespeople hand out hundreds of dollars' worth of samples each week-$7.2 billion worth of them in one year. Though few comprehensive studies have been conducted, one by the University of Washington investigated how drug sample availability affected what physicians prescribe. A total of 131 doctors self-reported their prescribing patterns-the conclusion was that the availability of samples led them to dispense and prescribe drugs that differed from their preferred drug choice.

G. The bottom line is that pharmaceutical companies as a whole invest more in marketing than they do in research and development. And patients are the ones who pay-in the form of sky-rocketing prescription prices for every pen that's handed out, every free theatre ticket, and every steak dinner eaten. In the end, the fact remains that pharmaceutical companies have every right to make a profit and will continue to find new ways to increase sales. But as the medical

world continues to grapple with what's acceptable and what's not, it is clear that companies must continue to be heavily scrutinized for their sales and marketing strategies.

Questions 8-13

Do the following statements agree with the views of the writer in Reading Passage 1? In boxes 8-13 on your answer sheet, write:

YES if the statement agrees with the views of the writer

NO if the statement contradicts the views of the writer

NOT GIVEN if it is impossible to say what the writer thinks

8. Sales representatives like Kim Schaefer work to a very limited budget.
9. Kim Schaefer's marketing technique may be open to criticism on moral grounds.
10. The information provided by drug companies is of little use to doctors.
11. Evidence of drug promotion is clearly visible in the healthcare environment.
12. The drug companies may give free drug samples to patients without doctors' prescriptions.
13. It is legitimate for drug companies to make money.

15. Bài 15

EFFECTS of Noise

In general, it is plausible to suppose that we should prefer peace and quiet to noise. And yet most of us have had the experience of having to adjust to sleeping in the mountains or the countryside because it was initially too quiet. Van experience that suggests that humans are capable of adapting to a wide range of noise levels. Research supports this view. For example, Glass and Singer (1972) exposed people to short bursts of very loud noise and then measured their ability to work out problems and their physiological reactions to the noise. The noise was quite disruptive at first, but after about four minutes the subjects were doing just as well on their tasks as control subjects who were not exposed to noise. Their physiological arousal also declined quickly to the same levels as those of the control subjects.

But there are limits to adaptation and loud noise becomes more troublesome if the person is required to concentrate on more than one task. For example, high noise levels interfered with the performance of subjects who were required to monitor three dials at a time, a task not unlike that of an aeroplane pilot or an air-traffic controller (Broadbent, 1957). Similarly, noise did not affect a subject's ability to track a moving line with a steering wheel, but it did interfere with the subject's ability to repeat numbers while tracking (Finke man and Glass 1970). Probably the most significant finding from research on noise is that its predictability is more important than how loud it is. We are much more able to 'tune out' chronic, background noise, even if it is quite loud than to work under circumstances with unexpected intrusions of noise. In the Glass and Singer study, in which subjects were exposed to bursts of noise as they worked on a task, some subjects heard loud bursts and others heard soft bursts. For some subjects, the bursts were spaced exactly one minute apart (predictable noise);

others heard the same amount of noise overall, but the bursts occurred at random intervals (unpredictable noise).

	Unpredictable Noise	Predictable Noise	Average
Loud noise	40.1	31.8	35.9
Soft noise	36.7	27.4	32.1
Average	38.4	29.6	

Table 1: ***Proofreading Errors and Noise***

Subjects reported finding the predictable and unpredictable noise equally annoying, and all subjects performed at about the same level during the noise portion of the experiment- But the different noise conditions had quite different after-effects when the subjects were required to proofread written material under conditions of no noise. As shown in Table 1 the unpredictable noise produced more errors in the later proofreading task than predictable noise; and soft, unpredictable noise actually produced slightly more errors on this task than the loud, predictable noise.

Apparently, unpredictable noise produces more fatigue than predictable noise, but it takes a while for this fatigue to take its toll on performance.

Predictability is not the only variable that reduces or eliminates the negative effects of noise. Another is "control". If the individual knows that he or she can control the noise, this seems to eliminate both its negative effects at the time and its after-effects. This is true even if the individual never actually exercises his or her option to turn the noise off (Glass and- Singer, 1972). Just the knowledge that one has control is sufficient.

The studies discussed so far exposed people to noise for only short periods and only transient effects were studied. But the major worry about

noisy environments is that living day after day with chronic noise may produce serious, lasting effects. One study, suggesting that this worry is a realistic one, compared elementary school pupils who attended schools - near Los Angeles's busiest airport with students who attended schools in quiet neighborhoods (Cohen et al., 1980). It was found that children from the noisy schools -had higher blood pressure and were more easily distracted than those who attended the quiet schools. Moreover, there was no evidence of adaptability to the noise. In fact, the longer the children had attended the noisy schools, the more distractible they became. The effects also seem to be long-lasting. A follow-up study showed that children who were moved to less noisy classrooms still showed greater distractibility one year later than students who had always been in the quiet schools (Cohen et al, 1981). It should be noted that the two groups of children had been carefully matched by the investigators so that they were comparable in age, ethnicity, race, and social class.

Questions 27-29: *Choose the correct letter, A, B. C or D. Write the correct letter in boxes 27-29 on your answer sheet.*

27. The writer suggests that people may have difficulty sleeping in the mountains because

A. humans do not prefer peace and quiet to noise.

B. they may be exposed to short bursts of very strange sounds.

C. humans prefer to hear a certain amount of noise while they sleep.

D. they may have adapted to a higher noise level in the city.

28. In noise experiments, Glass and Singer found that

A. problem-solving is much easier under quiet conditions.

B. physiological arousal prevents the ability to work.

C. bursts of noise do not seriously disrupt problem-solving in the long term.

D. the physiological arousal of control subjects declined quickly.

29. Researchers discovered that high noise levels are not likely to interfere with the

A. successful performance of a single task.

B. tasks of pilots or air traffic controllers.

C. ability to repeal numbers while tracking moving lines.

D. ability to monitor three dials at once.

Questions 30-34

Complete the summary using the list of words and phrases, A-J below. Write the correct letter A-J in boxes 30-34 on your answer sheet.

NB You may use any letter more than once.

Glass and Singer (1972) showed that situations in which there is intense noise have less effect on performance than circumstances in which 30 ..... noise occurs. Subjects were divided into groups to perform a task. Some heard loud bursts of noise, others sort. For some subjects, the noise was predictable, while for others its occurrence was random. All groups were exposed to 31 ..... noise. The predictable noise group 32 ..... the unpredictable noise group on this task. In the second part of the experiment, the four groups were given a proofreading task to complete under conditions of no noise. They were required to check written material for errors. The group which had been exposed to unpredictable noise 33 ..... the group which had been exposed to predictable noise. The group which had been exposed to loud predictable noise performed better than those who" had heard soft, unpredictable bursts. The results suggest that 34 ..... noise produces fatigue but that this manifests itself later.

A. no control over B. unexpected C. intense

D. the same amount of E. performed better than

F. performed at about the same level as

G. no	H. showed more irritation than
I. made more mistakes than	J. different types of

Questions 35-40

Look at the following statements (Questions 35-40) and the lust of researchers below. Match each statement with the correct researcher(s), A-E. Write the correct letter A-E, in boxes 35-40 on your answer sheet.

NB You may use any letter more than once.

35. Subjects exposed to noise find it difficult at first to concentrate on problem-solving tasks.

36. Long-term exposure to noise can produce changes in behavior which can still be observed a year later.

37. The problems associated with exposure to noise do not arise if the subject knows they can make it stop.

38. Exposure to high-pitched noise results in more errors than exposure to low-pitched noise

39. Subjects find it difficult to perform three tasks at the same time when exposed to noise

40. Noise affects a subject's capacity to repeat numbers while carrying out another task.

List of Researchers

A. Glass and Singer

B. Broadbent

C. Finke man and Glass

D. Cohen et al.

E. None of the above

16. Bài 16

Telepathy

Can human beings communicate by thought alone? For more than a century the issue of telepathy has divided the scientific community, and even today it still sparks bitter controversy among top academics.

Since the 1970s, parapsychologists at leading universities and research institutes around the world have risked the derision of sceptical colleagues by putting the various claims for telepathy to the test in dozens of rigorous scientific studies. The results and their implications are dividing even the researchers who uncovered them.

Some researchers say the results constitute compelling evidence that telepathy is genuine. Other parapsychologists believe the field is on the brink of collapse, having tried to produce definitive scientific proof and failed. Sceptics and advocates alike do concur on one issue, however, that the most impressive evidence so far has come from the so-called 'ganzfeld' experiments, a German term that means 'whole field'. Reports of telepathic experiences had by people during meditation led parapsychologists to suspect that telepathy might involve 'signals' passing between people that were so faint that they were usually swamped by normal brain activity. In this case, such signals might be more easily detected by those experiencing meditation-like tranquillity in a relaxing 'whole field' of light, sound and warmth.

The ganzfeld experiment tries to recreate these conditions with participants sitting in soft reclining chairs in a sealed room, listening to relaxing sounds while their eyes are covered with special filters letting in only soft pink light. In early ganzfeld experiments, the telepathy test involved identification of a picture chosen from a random selection of four taken from a large image bank. The idea was that a person acting as a 'sender' would attempt to beam the image

over to the 'receiver' relaxing in the sealed room. Once the session was over, this person was asked to identify which of the four images had been used. Random guessing would give a hit-rate of 25 per cent; if telepathy is real, however, the hit-rate would be higher. In 1982, the results from the first ganzfeld studies were analysed by one of its pioneers, the American parapsychologist Charles Honorton. They pointed to typical hit-rates of better than 30 per cent — a small effect, but one which statistical tests suggested could not be put down to chance.

The implication was that the ganzfeld method had revealed real evidence for telepathy. But there was a crucial flaw in this argument — one routinely overlooked in more conventional areas of science. Just because chance had been ruled out as an explanation did not prove telepathy must exist; there were many other ways of getting positive results. These ranged from 'sensory leakage' — where clues about the pictures accidentally reach the receiver — to outright fraud. In response, the researchers issued a review of all the ganzfeld studies done up to 1985 to show that 80 per cent had found statistically significant evidence. However, they also agreed that there were still too many problems in the experiments which could lead to positive results, and they drew up a list demanding new standards for future research.

After this, many researchers switched to autoganzfeld tests — an automated variant of the technique which used computers to perform many of the key tasks such as the random selection of images. By minimising human involvement, the idea was to minimise the risk of flawed results. In 1987, results from hundreds of autoganzfeld tests were studied by Honorton in a 'meta-analysis', a statistical technique for finding the overall results from a set of studies. Though less compelling than before, the outcome was still impressive.

Yet some parapsychologists remain disturbed by the lack of consistency between individual ganzfeld studies. Defenders of telepathy point out that

demanding impressive evidence from every study ignores one basic statistical fact: it takes large samples to detect small effects. If, as current results suggest, telepathy produces hit-rates only marginally above the 25 per cent expected by chance, it's unlikely to be detected by a typical ganzfeld study involving around 40 people: the group is just not big enough. Only when many studies are combined in a meta-analysis will the faint signal of telepathy really become apparent. And that is what researchers do seem to be finding.

What they are certainly not finding, however, is any change in attitude of mainstream scientists: most still totally reject the very idea of telepathy. The problem stems at least in part from the lack of any plausible mechanism for telepathy.

Various theories have been put forward, many focusing on esoteric ideas from theoretical physics. They include 'quantum entanglement', in which events affecting one group of atoms instantly affect another group, no matter how far apart they may be. While physicists have demonstrated entanglement with specially prepared atoms, no-one knows if it also exists between atoms making up human minds. Answering such questions would transform parapsychology. This has prompted some researchers to argue that the future lies not in collecting more evidence for telepathy, but in probing possible mechanisms. Some work has begun already, with researchers trying to identify people who are particularly successful in autoganzfeld trials. Early results show that creative and artistic people do much better than average: in one study at the University of Edinburgh, musicians achieved a hit-rate of 56 per cent. Perhaps more tests like these will eventually give the researchers the evidence they are seeking and strengthen the case for the existence of telepathy.

Questions 27-30

Complete each sentence with the correct ending, A —G, below. Write the correct letter, A—G, in boxes 27-30 on your answer sheet.

27. Researchers with differing attitudes towards telepathy agree on
28. Reports of experiences during meditation indicated
29. Attitudes to parapsychology would alter drastically with
30. Recent autoganzfeld trials suggest that success rates will improve with

A. the discovery of a mechanism for telepathy.
B. the need to create a suitable environment for telepathy.
C. their claims of a high success rate.
D. a solution to the problem posed by random guessing.
E. the significance of the ganzfeld experiments.
F. a more careful selection of subjects.
G. a need to keep altering conditions.

Questions 31-40

Complete the table below. Choose NO MORE THAN THREE WORDS from the passage for each answer. Write your answers in boxes 31-40 on your answer sheet.

Telepathy Experiments

Name/Date	Description	Result	Flaw
Ganzfeld studies 1982	Involved a person acting as a **31** ....., who picked out one **32** ..... from a random selection of four, and a **33** ....., who then tried to identify it.	Hit-rates were higher than with random guessing.	Positive results could be produced by factors such as **34** ..... or **35** ..... .
Autoganzfeld studies 1987	**36** ..... were used for key tasks to limit the amount of **37** ..... in carrying out the tests.	The results were then subjected to a **38**	The **39** ..... between different test results was put down to the fact that sample groups were not **40** ..... (as with most ganzfeld studies).

17. Bài 17

Questions 27-32

Reading Passage 3 has six paragraphs, A—F. Choose the correct heading for each paragraph from the list of headings below. Write the correct number, i—viii, in boxes 27-32 on your answer sheet.

List of Headings

i. The difficulties of talking about smells

ii. The role of smell in personal relationships

iii. Future studies into smell

iv. The relationship between the brain and the nose

v. The interpretation of smells as a factor in defining groups

vi. Why our sense of smell is not appreciated

vii. Smell is our superior sense

viii. The relationship between smell and feelings

27. Paragraph A

28. Paragraph B

29. Paragraph C

30. Paragraph D

31. Paragraph E

32. Paragraph F

The meaning and power of smell

The sense of smell, or olfaction, is powerful. Odours affect us on a physical, psychological and social level. For the most part, however, we breathe in the aromas which surround us without being consciously aware of their importance to us. It is only when the faculty of smell is impaired for some reason that we begin to realise the essential role the sense of smell plays in our sense of well-being.

A. A survey conducted by Anthony Synott at Montreal's Concordia University asked participants to comment on how important smell was to them in their lives. It became apparent that smell can evoke strong emotional responses. A scent associated with a good experience can bring a rush of joy, while a foul odour or one associated with a bad memory may make us grimace with disgust. Respondents to the survey noted that many of their olfactory likes and dislikes were based on emotional associations. Such associations can be powerful enough so that odours that we would generally label unpleasant become agreeable, and those that we would generally consider fragrant become disagreeable for particular individuals. The perception of smell, therefore, consists not only of the sensation of the odours themselves, but of the experiences and emotions associated with them.

B. Odours are also essential cues in social bonding. One respondent to the survey believed that there is no true emotional bonding without touching and smelling a loved one. In fact, infants recognise the odours of their mothers soon after birth and adults can often identify their children or spouses by scent. In one well-known test, women and men were able to distinguish by smell alone clothing worn by their marriage partners from similar clothing worn by other people. Most of the subjects would probably never have given much thought to odour as a cue for identifying family members before being involved in the test,

but as the experiment revealed, even when not consciously considered, smells register.

C. In spite of its importance to our emotional and sensory lives, smell is probably the most undervalued sense in many cultures. The reason often given for the low regard in which smell is held is that, in comparison with its importance among animals, the human sense of smell is feeble and undeveloped. While it is true that the olfactory powers of humans are nothing like as fine as those possessed by certain animals, they are still remarkably acute. Our noses are able to recognise thousands of smells, and to perceive odours which are present only in extremely small quantities.

D. Smell, however, is a highly elusive phenomenon. Odours, unlike colours, for instance, cannot be named in many languages because the specific vocabulary simply doesn't exist. 'It smells like ... ,' we have to say when describing an odour, struggling to express our olfactory experience. Nor can odours be recorded: there is no effective way to either capture or store them over time In the realm of olfaction, we must make do with descriptions and recollections. This has implications for olfactory research.

E. Most of the research on smell undertaken to date has been of a physical scientific nature. Significant advances have been made in the understanding of the biological and chemical nature of olfaction, but many fundamental questions have yet to be answered. Researchers have still to decide whether smell is one sense or two - one responding to odours proper and the other registering odourless chemicals in the air. Other unanswered questions are whether the nose is the only part of the body affected by odours, and how smells can be measured objectively given the nonphysical components. Questions like these mean that interest in the psychology of smell is inevitably set to play an increasingly important role for researchers.

F. However, smell is not simply a biological and psychological phenomenon. Smell is cultural, hence it is a social and historical phenomenon. Odours are invested with cultural values: smells that are considered to be offensive in some cultures may be perfectly acceptable in others. Therefore, our sense of smell is a means of, and model for, interacting with the world. Different smells can provide us with intimate and emotionally charged experiences and the value that we attach to these experiences is interiorised by the members of society in a deeply personal way. Importantly, our commonly held feelings about smells can help distinguish us from other cultures. The study of the cultural history of smell is, therefore, in a very real sense, an investigation into the essence of human culture.

Questions 33-36

Choose the correct letter, A, B, C or D. Write the correct letter in boxes 33-36 on your answer sheet.

33. According to the introduction, we become aware of the importance of smell when

A. we discover a new smell.

B. we experience a powerful smell.

C. our ability to smell is damaged.

D. we are surrounded by odours.

34. The experiment described in paragraph B

A. shows how we make use of smell without realising it.

B. demonstrates that family members have a similar smell.

C. proves that a sense of smell is learnt.

D. compares the sense of smell in males and females.

35. What is the writer doing in paragraph C?

A. supporting other research

B. making a proposal

C. rejecting a common belief

D. describing limitations

36. What does the writer suggest about the study of smell in the atmosphere in paragraph E?

A. The measurement of smell is becoming more accurate.

B. Researchers believe smell is a purely physical reaction.

C. Most smells are inoffensive.

D. Smell is yet to be defined.

Questions 37-40

Complete the sentences below. Choose ONE WORD ONLY from the passage for each answer. Write your answers in boxes 37-40 on your answer sheet.

37. Tests have shown that odours can help people recognise the belonging to their husbands and wives.

38. Certain linguistic groups may have difficulty describing smell because they lack the appropriate

39. The sense of smell may involve response to which do not smell, in addition to obvious odours.

40. Odours regarded as unpleasant in certain are not regarded as unpleasant in others.

18. Bài 18

Questions 28-33

The text on following pages has eight sections, A-H. Choose the correct heading for sections C-H from the list of headings below. Section A and Section B have been done for you. Write the correct number, i-xi, in boxes 28-33 on your answer sheet.

List of Headings

i. Where to buy the best Echinacea

ii. What 'snake oil' contained

iii. Growing Echinacea

iv. How to use the Echinacea plant

v. Earlier applications of Echinacea

vi. The origins of the term 'snake oil'

vii. Early research into the effectiveness of Echinacea

viii. How 'snake oil' was first invented

ix. The use of Echinacea in new locations

x. Modern evidence of the effectiveness of Echinacea

xi. Early kinds of 'snake oil'

Examples

Section A vi

Section B xi

28. Section C

29. Section D

30. Section E

31. Section F

32. Section G

33. Section H

Snake Oil

A. Back in the days of America's Wild West, when cowboys roamed the range and people were getting themselves caught up in gunfights, a new phrase - 'snake oil' – entered the language. It was a dismissive term for the patent medicines, often useless, sold by travelling traders who always claimed miraculous cures for everything from baldness to snakebite.

Selling 'snake oil' was almost as risky a business as cattle stealing; you might be run out of town if your particular medicine, as you realised it would, failed to live up to its claims. Consequently, the smarter - 'snake oil' sellers left town before their customers had much chance to evaluate the 'cure' they had just bought.

B. The remarkable thing about many of the medicines dismissed then as 'snake oil' is not so much that they failed to live up to the outrageous claims made for them - those that weren't harmless coloured water could be positively dangerous. What's remarkable is that so many of the claims made for some of these remedies, or at least their ingredients, most of them, plant based, have since been found to have at least some basis in fact.

One, Echinacea, eventually turned out to be far more potent than even its original promoter claimed. Echinacea first appeared in 'Meyer's Blood Purifier', promoted as a cure-all by a Dr H.C.F. Meyer - a lay doctor with no medical qualifications. 'Meyer's Blood Purifier' claimed not only to cure snakebite, but also to eliminate a host of other ailments.

C. Native to North America, the roots of Echinacea, or purple coneflower, had been used by the Plains Indians for all kinds of ailments long before Meyer came along. They applied poultices of it to wounds and stings, used it for teeth and gum disease and made a tea from it to treat everything from colds and measles to arthritis. They even used it for snakebite.

D. Settlers quickly picked up on the plant's usefulness but until Meyer sent samples of his 'blood purifier' to John Lloyd, a pharmacist, it remained a folk remedy. Initially dismissing Meyer's claims as nonsense, Lloyd was eventually converted after a colleague, John King, tested the herb and successfully used it to treat bee stings and nasal congestion.

In fact, he went much further in his claims than Meyer ever did and by the 1890s a bottle of tincture[1] of Echinacea could be found in almost every American home, incidentally making a fortune for Lloyd's company, Lloyd Brothers Pharmacy.

E. As modern antibiotics became available, the use of Echinacea products declined and from the 1940s to the 1970s it was pretty much forgotten in the USA. It was a different story in Europe, where both French and German herbalists and homeopaths continued to make extensive use of it.

It had been introduced there by Gerhard Madaus, who travelled from Germany to America in 1937, returning with seed to establish commercial plots of Echinacea. His firm conducted extensive research on echinacin, a concentrate they made from the juice of flowering tops of the plants he had brought back. It was put into ointments, liquids for internal and external use, and into products for injections.

F. There is no evidence that Echinacea is effective against snakebite, but Dr Meyer – who genuinely believed in Echinacea - would probably be quite amused if he could come back and see the uses to which modern science has put 'his' herb. He might not be surprised that science has confirmed Echinacea's role as a treatment for wounds, or that it has been found to be helpful in relieving arthritis, both claims Meyer made for the herb.

He might though be surprised to learn how Echinacea is proving to be an effective weapon against all sorts of disease, particularly infections. German

researchers had used it successfully to treat a range of infections and found it to be effective against bacteria and protozoa[2].

There are many other intriguing medical possibilities for extracts from the herb, but its apparent ability to help with our more common ailments has seen thousands of people become enthusiastic converts. Dozens of packaged products containing extracts of Echinacea can now be found amongst the many herbal remedies and supplements on the shelves of health stores and pharmacies. Many of those might be the modern equivalents of 'snake oil', but Echinacea at least does seem to have some practical value.

G. Echinacea is a dry prairie plant, drought-resistant and pretty tolerant of most soils, although it does best in good soil with plenty of sun. Plants are usually grown from seed but they are sometimes available from nurseries. Echinacea is a distinctive perennial with erect, hairy, spotted stems up to a meter tall. Flower heads look like daisies, with purple rayed florets and a dark brown central cone. The leaves are hairy; the lower leaves are oval to lance-shaped and coarsely and irregularly toothed.

H. There are nine species of Echinacea in all but only three are generally grown for medicinal use. All have similar medicinal properties. Most European studies have used liquid concentrates extracted from the tops of plants, whereas extraction in the USA has usually been from the roots. Today most manufacturers blend both, sometimes adding flowers and seeds to improve the quality.

For the home grower, the roots of all species seem equally effective. Dig them up in autumn after the tops have died back after the first frost. Wash and dry them carefully and store them in glass containers. You can harvest the tops throughout the summer and even eat small amounts of leaf straight from the plant.

Even if you don't make your fortune from this herb, there are few sights more attractive than a field of purple coneflowers in all their glory. And with a few Echinacea plants nearby, you'll never go short of a cure.

(1) a liquid containing a special ingredient

(2) a type of micro-organism

Questions 34–40

Do the following statements agree with the information given in the text? In boxes 34-40 on your answer sheet, write:

True if the statement agrees with the information

False if the statement contradicts the information

Not given if there is no information on this

34. 'Snake oil' sellers believed their product was effective.
35. Most people in the Wild West mistrusted 'snake oil'.
36. Some 'snake oils' were mostly water.
37. All 'snake oils' contained Echinacea.
38. Echinacea has been proven to kill microbes.
39. The highest quality Echinacea is grown in America.
40. More than one part of the Echinacea plant has a medicinal use.

19. Bài 19

A. Hearing impairment or other auditory function deficit in young children can have a major impact on their development of speech and communication, resulting in a detrimental effect on their ability to learn at school. This is likely to have major consequences for the individual and the population as a whole. The New Zealand Ministry of Health has found from research carried out over two decades that 6-10% of children in that country are affected by hearing loss.

B. A preliminary study in New Zealand has shown that classroom noise presents a major concern for teachers and pupils. Modern teaching practices, the organisation of desks in the classroom, poor classroom acoustics, and mechanical means of ventilation such as air-conditioning units all contribute to the number of children unable to comprehend the teacher's voice. Education researchers Nelson and Soli have also suggested that recent trends in learning often involve collaborative interaction of multiple minds and tools as much as individual possession of information. This all amounts to heightened activity and noise levels, which have the potential to be particularly serious for children experiencing auditory function deficit. Noise in classrooms can only exacerbate their difficulty in comprehending and processing verbal communication with other children and instructions from the teacher.

C. Children with auditory function deficit are potentially failing to learn to their maximum potential because of noise levels generated in classrooms. The effects of noise on the ability of children to learn effectively in typical classroom environments are now the subject of increasing concern. The International Institute of Noise Control Engineering (I-INCE), on the advice of the World Health Organization, has established an international working party, which includes New Zealand, to evaluate noise and reverberation control for school rooms.

D. While the detrimental effects of noise in classroom situations are not limited to children experiencing disability, those with a disability that affects their processing of speech and verbal communication could be extremely vulnerable. The auditory function deficits in question include hearing impairment, autistic spectrum disorders (ASD) and attention deficit disorders (ADD/ADHD).

E. Autism is considered a neurological and genetic life-long disorder that causes discrepancies in the way information is processed. This disorder is characterised by interlinking problems with social imagination, social communication and social interaction. According to Janzen, this affects the ability to understand and relate in typical ways to people, understand events and objects in the environment, and understand or respond to sensory stimuli. Autism does not allow learning or thinking in the same ways as in children who are developing normally.

Autistic spectrum disorders often result in major difficulties in comprehending verbal information and speech processing. Those experiencing these disorders often find sounds such as crowd noise and the noise generated by machinery painful and distressing. This is difficult to scientifically quantify as such extra-sensory stimuli vary greatly from one autistic individual to another. But a child who finds any type of noise in their classroom or learning space intrusive is likely to be adversely affected in their ability to process information.

F. The attention deficit disorders are indicative of neurological and genetic disorders and are characterised by difficulties with sustaining attention, effort and persistence, organisation skills and disinhibition. Children experiencing these disorders find it difficult to screen out unimportant information, and focus on everything in the environment rather than attending to a single activity. Background noise in the classroom becomes a major distraction, which can affect their ability to concentrate.

G. Children experiencing an auditory function deficit can often find speech and communication very difficult to isolate and process when set against high levels of background noise.

These levels come from outside activities that penetrate the classroom structure, from teaching activities, and other noise generated inside, which can be exacerbated by room reverberation. Strategies are needed to obtain the optimum classroom construction and perhaps a change in classroom culture and methods of teaching. In particular, the effects of noisy classrooms and activities on those experiencing disabilities in the form of auditory function deficit need thorough investigation. It is probable that many undiagnosed children exist in the education system with 'invisible' disabilities. Their needs are less likely to be met than those of children with known disabilities.

H. The New Zealand Government has developed a New Zealand Disability Strategy and has embarked on a wide-ranging consultation process. The strategy recognises that people experiencing disability face significant barriers in achieving a full quality of life in areas such as attitude, education, employment and access to services. Objective 3 of the New Zealand Disability Strategy is to 'Provide the Best Education for Disabled People' by improving education so that all children, youth learners and adult learners will have equal opportunities to learn and develop within their already existing local school. For a successful education, the learning environment is vitally significant, so any effort to improve this is likely to be of great benefit to all children, but especially to those with auditory function disabilities.

I. A number of countries are already in the process of formulating their own standards for the control and reduction of classroom noise. New Zealand will probably follow their example. The literature to date on noise in school rooms appears to focus on the effects on schoolchildren in general, their teachers and

the hearing impaired. Only limited attention appears to have been given to those students experiencing the other disabilities involving auditory function deficit. It is imperative that the needs of these children are taken into account in the setting of appropriate international standards to be promulgated in future.

Questions 1-6

Reading Passage 1 has nine sections, A-I.

Which section contains the following information?

Write the correct letter A-I, in boxes 1-6 on your answer sheet.

1. an account of a national policy initiative
2. a description of a global team effort
3. a hypothesis as to one reason behind the growth in classroom noise
4. a demand for suitable worldwide regulations
5. a list of medical conditions which place some children more at risk from noise than others
6. the estimated proportion of children in New Zealand with auditory problems.

Questions 7-10

Answer the questions below. Choose NO MORE THAN TWO WORDS AND/OR A NUMBER from the passage for each answer. Write your answers in boxes 7-10 on your answer sheet.

7. For what period of time has hearing loss in schoolchildren been studied in New Zealand?
8. In addition to machinery noise, what other type of noise can upset children with autism?
9. What term is used to describe the hearing problems of schoolchildren which have not been diagnosed?
10. What part of the New Zealand Disability Strategy aims to give schoolchildren equal opportunity?

Questions 11-12

Choose TWO letters, A-E. Write the correct letters in boxes 11 and 12 on your answer sheet.

The list below includes factors contributing to classroom noise.

Which TWO are mentioned by the writer of the passage?

A. current teaching methods

B. echoing corridors

C. cooling systems

D. large class sizes

E. loud-voiced teachers

F. playground games

Questions 13

Choose the correct letter A, B, C or D. Write the correct letter in box 13 on your answer sheet.

What is the writer‘s overall purpose in writing this article?

A. to compare different methods oi dealing with auditory problems

B. to provide solutions for overly noisy learning environments

C. to increase awareness of the situation oi children with auditory problems

D. to promote New Zealand as a model for other countries to follow

20. Bài 20

A Neuroscientist Reveals How to Think Differently

In the last decade a revolution has occurred In the way that scientists think about the brain.

We now know that the decisions humans make can be traced to the firing patterns of neurons in specific parts of the brain. These discoveries have led to the field known as neuroeconomics, which studies the brain's secrets to success in an economic environment that demands innovation and being able to do things differently from competitors. A brain that can do this is an iconoclastic one. Briefly, an iconoclast is a person who does something that others say can't be done.

This definition implies that iconoclasts are different from other people, but more precisely, it is their brains that are different in three distinct ways: perception, fear response, and social intelligence. Each of these three functions utilizes a different circuit in the brain. Naysayers might suggest that the brain is irrelevant, that thinking in an original, even revolutionary, way is more a matter of personality than brain function. But the field of neuroeconomics was born out of the realization that the physical workings of the brain place limitations on the way we make decisions. By understanding these constraints, we begin to understand why some people march to a different drumbeat.

The first thing to realize is that the brain suffers from limited resources. It has a fixed energy budget, about the same as a 40 watt light bulb, so it has evolved to work as efficiently as possible. This is where most people are impeded from being an iconoclast. For example, when confronted with information streaming from the eyes, the brain will interpret this information in the quickest way possible. Thus it will draw on both past experience and any other source of information, such as what other people say, to make sense of what it is seeing.

This happens all the time. The brain takes shortcuts that work so well we are hardly ever aware of them.

We think our perceptions of the world are real, but they are only biological and electrical rumblings. Perception is not simply a product of what your eyes or ears transmit to your brain. More than the physical reality of photons or sound waves, perception is a product of the brain.

Perception is central to iconoclasm. Iconoclasts see things differently to other people. Their brains do not fall into efficiency pitfalls as much as the average person's brain. Iconoclasts, either because they were born that way or through learning, have found ways to work around the perceptual shortcuts that plague most people. Perception is not something that is hardwired into the brain. It is a learned process, which is both a curse and an opportunity for change. The brain faces the fundamental problem of interpreting physical stimuli from the senses. Everything the brain sees, hears, or touches has multiple interpretations. The one that is ultimately chosen is simply the brain's best theory. In technical terms, these conjectures have their basis in the statistical likelihood of one interpretation over another and are heavily influenced by past experience and, importantly for potential iconoclasts, what other people say.

The best way to see things differently to other people is to bombard the brain with things it has never encountered before. Novelty releases the perceptual process from the chains of past experience and forces the brain to make new judgments. Successful iconoclasts have an extraordinary willingness to be exposed to what is fresh and different. Observation of iconoclasts shows that they embrace novelty while most people avoid things that are different.

The problem with novelty, however, is that it tends to trigger the brain's fear system. Fear is a major impediment to thinking like an iconoclast and stops the average person in his tracks. There are many types of fear, but the two that inhibit iconoclastic thinking and people generally find difficult to deal with are

fear of uncertainty and fear of public ridicule. These may seem like trivial phobias. But fear of public speaking, which everyone must do from time to time, afflicts one-third of the population. This makes it too common to be considered a mental disorder. It is simply a common variant of human nature, one which iconoclasts do not let inhibit their reactions.

Finally, to be successful iconoclasts, individuals must sell their ideas to other people. This is where social intelligence comes in. Social intelligence is the ability to understand and manage people in a business setting. In the last decade there has been an explosion of knowledge about the social brain and how the brain works when groups coordinate decision making. Neuroscience has revealed which brain circuits are responsible for functions like understanding what other people think, empathy, fairness, and social identity. These brain regions play key roles in whether people convince others of their ideas. Perception is important in social cognition too. The perception of someone's enthusiasm, or reputation, can make or break a deal. Understanding how perception becomes intertwined with social decision making shows why successful iconoclasts are so rare.

Iconoclasts create new opportunities in every area from artistic expression to technology to business. They supply creativity and innovation not easily accomplished by committees. Rules aren't important to them. Iconoclasts face alienation and failure, but can also be a major asset to any organization. It is crucial for success in any field to understand how the iconoclastic mind works.

Questions 27-31: *Choose the correct letter A. B. C or D. Write the correct letter in boxes 27-31 on your answer sheet.*

27. Neuroeconomics is a field of study which seeks to

A. cause a change in how scientists understand brain chemistry.

B. understand how good decisions are made in the brain.

C. understand how the brain is linked to achievement in competitive fields.

D. trace the specific firing patterns of neurones in different areas of the brain.

28. According to the writer, iconoclasts are distinctive because

A. they create unusual brain circuits.

B. their brains function differently.

C. their personalities are distinctive.

D. they make decisions easily.

29. According to the writer, the brain works efficiently because

A. it uses the eyes quickly.

B. it interprets data logically.

C. it generates its own energy.

D. it relies on previous events.

30. The writer says that perception is

A. a combination of photons and sound waves.

B. a reliable product of what your senses transmit.

C. a result of brain processes.

D. a process we are usually conscious of.

31. According to the writer an iconoclastic thinker

A. centralizes perceptual thinking in one part of the brain.

B. avoids cognitive traps.

C. has a brain that is hardwired for learning.

D. has more opportunities than the average person.

Questions 32-37

Do the following statements agree with the claims of the writer in Reading Passage 3? In boxes 32-37 on your answer sheet, write:

YES it the statement agrees with the claims of the writer

NO it the statement contradicts the claims of the writer

NOT GIVEN it is impossible to say what the writer thinks about this

32. Exposure to different events forces the brain to think differently.
33. iconoclasts are unusually receptive to new experiences.
34. Most people are too shy to try different things.
35. If you think in an iconoclastic way, you can easily overcome fear.
36. When concern about embarrassment matters less, other fears become irrelevant.
37. Fear of public speaking is a psychological illness.

Questions 38-40

Complete each sentence with the correct ending, A-E, below. Write the correct letter A-E, in boxes 38-40 on your answer sheet.

38. Thinking like a successful iconoclast is demanding because it.
39. The concept of the social brain is useful to iconoclasts because it.
40. Iconoclasts are generally an asset because their way of thinking.

A. requires both perceptual and social intelligence skills.
B. focuses on how groups decide on an action.
C. works in many fields, both artistic and scientific.
D. leaves one open to criticism and rejection.
E. involves understanding how organizations manage people.

21. Bài 21

Young Children's Sense of Identity

A. A sense of 'self' develops in young children by degrees. The process can usefully be thought of in terms of the gradual emergence of two somewhat separate features: the self as a subject, and the self as an object. William James introduced the distinction in 1892, and contemporaries of his, such as Charles Cooley, added to the developing debate. Ever since then psychologists have continued building on the theory.

B. According to James, a child's first step on the road to self-understanding can be seen as the recognition that he or she exists. This is an aspect of the self that he labeled 'self-as-subject', and he gave it various elements. These included an awareness of one's own agency (i.e. one's power to act) and an awareness of one's distinctiveness from other people. These features gradually emerge as infants explore their world and interact with caregivers. Cooley (1902) suggested that a lot of the self-as-subject was primarily concerned with being able to exercise power. He proposed that the earliest examples of this are an infants attempts to control physical objects, such as toys or his or her own limbs. This is followed by attempts to affect the behavior of other people. For example, infants learn that when they cry or smile someone responds to them.

C. Another powerful source of information for infants about the effects they can have on the world around them is provided when others mimic them. Many parents spend a lot of time, particularly in the early months, copying their infant's vocalizations and expressions in addition, young children enjoy looking in mirrors, where the movements they can see are dependent upon their own movements.This is not to say that infants recognize the reflection as their own image (a later development). However, Lewis and Brooks-Gunn (1979) suggest

that infants' developing understanding that the movements they see in the mirror are contingent on their own, leads to a growing awareness that they are distinct from other people. This is because they, and only they can change the reflection in the mirror.

D. This understanding that children gain of themselves as active agents continue to develop in their attempts to co-operate with others in play. Drum (1988) points out that it is in such day-to-day relationships and interactions that the child's understanding of his· or herself emerges. Empirical investigations of the self-as- subject in young children are, however, rather scarce because of difficulties of communication: even if young infants can reflect on their experience, they certainly cannot express this aspect of the self directly.

E. Once Children have acquired a certain level of self-awareness, they begin to place themselves in a whole series of categories, which together play such an important part in defining them uniquely as 'themselves'. This second step in the development of a full sense of self is what lames called the 'self-as-object'. This has been seen by many to be the aspect of the self which is most influenced by social elements, since it is made up of social roles (such as student, brother; colleague) and characteristics which derive their meaning from comparison or interaction with other people (such as trustworthiness, shyness, sporting ability).

F. Cooley and other researchers suggested a close connection between a person's own understanding of their identity and other people's understanding of it. Cooley believed that people build up their sense of identity from the reactions of others to them, and from the view, they believe others have of them He called the self- as-object the 'looking-glass self', since people come to see themselves as they are reflected in others. Mead (1934) went even further, and saw the self and the social world as inextricably bound together. The self is

essentially a social structure, and it arises in social experience. It is impossible to conceive of a self-arising outside of social experience.'

G. Lewis and Brooks-Gunn argued that an important developmental milestone is reached when children become able to recognize themselves visually without the support of seeing contingent movement. This recognition occurs around their second birthday. In one experiment, Lewis and Brooks-Gunn (1979) dabbed some red powder on the noses of children who were playing in front of a mirror, and then observed how often they touched their noses. The psychologists reasoned that if the children knew what they usually looked like, they would be surprised by the unusual red mark and would start touching it. On the other hand, they found that children of 15 to 18 months are generally not able to recognize themselves unless other cues such as movement are present.

H. Finally perhaps the most graphic expressions of self-awareness, in general, can be seen in the displays of rage which are most common from 18 months to 3 years of age. In a longitudinal study of groups of three or four children, Bronson (1975) found that the intensity of the frustration and anger in their disagreements increased sharply between the ages of 1 and 2 years. Often, the children's disagreements involved a struggle over a toy that none of them had played with before or after the tug-of-war: the children seemed to be disputing ownership rather than wanting to play with it. Although it may be less marked in other societies, the link between the sense of ’self' and of 'ownership’ is a notable feature of childhood in Western societies.

Questions 14-19

Reading Passage 2 has eight paragraphs, A-H.

Which paragraph contains the following information?

Write the correct letter A-H, in boxes 14-19 on your answer sheet. NB You may use any letter more than once.

14. An account of the method used by researchers in a particular study
15. The role of imitation in developing a sense of identity
16. The age at which children can usually Identity a static image of themselves
17. A reason for the limitations of scientific research into 'self- as-subject'.
18. Reference to a possible link between culture and a particular form of behavior
19. Examples of the wide range of features that contribute to the sense of 'self-as-object'.

Questions 20-23

Look at the following findings (Questions 20-23) and the list of researchers below. Match each finding with the correct researcher or researchers, A-E. Write the correct letter A-E, in boxes 20-23 on your answer sheet.

20. A sense of identity can never be formed without relationships with other people.
21. A child's awareness of self is related to a sense of mastery over things and people.
22. At a certain age, children's sense of identity leads to aggressive behavior.
23. Observing their own reflection contributes to children's self-awareness.

List of Researchers

A. James

B. Cooley

C. Lewis and Brooks-Gunn

D. Mead

E. Bronson

Questions 24-26

Complete the summary below. Choose ONE WORD ONLY from the passage for each answer. Write your answers in boxes 24-26 on your answer sheet.

How children acquire a sense of identity

First, children come to realize that they can have an effect on the world around them, for example by handling objects. or causing the image to move when they lace a 24 ..... This aspect of self-awareness is difficult to research directly, because of 25.....…….. problems.

Secondly. children start to become aware of how they are viewed by others. One important stage in this process is the visual recognition of themselves which usually occurs when they reach the age oi two. In Western societies at least, the development of self-awareness is often linked to a sense of 26 ..... , and can lead to disputes.

22. Bài 22

Second nature

Your personality isn't necessarily set in stone. With a little experimentation, people can reshape their temperaments and inject passion, optimism, joy and courage into their lives.

A. Psychologists have long held that a person's character cannot undergo a transformation in any meaningful way and that the key traits of personality are determined at a very young age. However, researchers have begun looking more closely at ways we can change. Positive psychologists have identified 24 qualities we admire, such as loyalty and kindness, and are studying them to find out why they come so naturally to some people. What they're discovering is that many of these qualities amount to habitual behaviour that determines the way we respond to the world. The good news is that all this can be learned.

Some qualities are less challenging to develop than others, optimism being one of them. However, developing qualities requires mastering a range of skills which are diverse and sometimes surprising. For example, to bring more joy and passion into your life, you must be open to experiencing negative emotions. Cultivating such qualities will help you realise your full potential.

B. 'The evidence is good that most personality traits can be altered,' says Christopher Peterson, professor of psychology at the University of Michigan, who cites himself as an example. Inherently introverted, he realised early on that as an academic, his reticence would prove disastrous in the lecture hall. So he learned to be more outgoing and to entertain his classes. 'Now my extroverted behaviour is spontaneous, ' he says.

C. David Fajgenbaum had to make a similar transition. He was preparing for university, when he had an accident that put an end to his sports career. On campus, he quickly found that beyond ordinary counselling, the university had

no services for students who were undergoing physical rehabilitation and suffering from depression like him. He, therefore, launched a support group to help others in similar situations. He took action despite his own pain - a typical response of an optimist.

D. Suzanne Segerstrom, professor of psychology at the University of Kentucky, believes that the key to increasing optimism is through cultivating optimistic behaviour, rather than positive thinking. She recommends you train yourself to pay attention to good fortune by writing down three positive things that come about each day. This will help you convince yourself that favourable outcomes actually happen all the time, making it easier to begin taking action.

E. You can recognise a person who is passionate about a pursuit by the way they are so strongly involved in it. Tanya Streeter's passion is freediving - the sport of plunging deep into the water without tanks or other breathing equipment. Beginning in 1998, she set nine world records and can hold her breath for six minutes. The physical stamina required for this sport is intense but the psychological demands are even more overwhelming. Streeter learned to untangle her fears from her judgment of what her body and mind could do. 'In my career as a competitive freediver, there was a limit to what I could do - but it wasn't anywhere near what I thought it was/ she says.

F. Finding a pursuit that excites you can improve anyone's life. The secret about consuming passions, though, according to psychologist Paul Silvia of the University of North Carolina, is that 'they require discipline, hard work and ability, which is why they are so rewarding.' Psychologist Todd Kashdan has this advice for those people taking up a new passion: ' As a newcomer, you also have to tolerate and laugh at your own ignorance. You must be willing to accept the negative feelings that come your way,' he says.

G. In 2004, physician-scientist Mauro Zappaterra began his PhD research at Harvard Medical School. Unfortunately, he was miserable as his research

wasn't compatible with his curiosity about healing. He finally took a break and during eight months in Santa Fe, Zappaterra learned about alternative healing techniques not taught at Harvard. When he got back, he switched labs to study how cerebrospinal fluid nourishes the developing nervous system. He also vowed to look for the joy in everything, including failure, as this could help him learn about his research and himself.

One thing that can hold joy back is a person's concentration on avoiding failure rather than their looking forward to doing something well. 'Focusing on being safe might get in the way of your reaching your goals,' explains Kashdan. For example, are you hoping to get through a business lunch without embarrassing yourself, or are you thinking about how fascinating the conversation might be?

H. Usually, we think of courage in physical terms but ordinary life demands something else. For marketing executive Kenneth Pedeleose, it meant speaking out against something he thought was ethically wrong. The new manager was intimidating staff so Pedeleose carefully recorded each instance of bullying and eventually took the evidence to a senior director, knowing his own job security would be threatened. Eventually, the manager was the one to go. According to Cynthia Pury, a psychologist at Clemson University, Pedeleose's story proves the point that courage is not motivated by fearlessness, but by moral obligation. Pury also believes that people can acquire courage. Many of her students said that faced with a risky situation, they first tried to calm themselves down, then looked for a way to mitigate the danger, just as Pedeleose did by documenting his allegations.

Over the long term, picking up a new character trait may help you move toward being the person you want to be. And in the short term, the effort itself could be surprisingly rewarding, a kind of internal adventure.

Questions 14-18

Complete the summary below. Choose NO MORE THAN TWO WORDS from the passage for each answer. Write your answers in boxes 14-18 on your answer sheet.

Psychologists have traditionally believed that a personality 14..... was impossible and that by a 15..... , a person's character tends to be fixed. This is not true according to positive psychologists, who say that our personal qualities can be seen as habitual behaviour. One of the easiest qualities to acquire is 16..... . However, regardless of the quality, it is necessary to learn a wide variety of different 17..... in order for a new quality to develop; for example, a person must understand and feel some 18..... in order to increase their happiness.

Questions 19-22

Look at the following statements (Questions 19 - 22) and the list of people below. Match each statement with the correct person, A-G. Write the correct letter, A-G, in boxes 19-22 on your answer sheet.

19. People must accept that they do not know much when first trying something new.

20. It is important for people to actively notice when good things happen.

21. Courage can be learned once its origins in a sense of responsibility are understood.

22. It is possible to overcome shyness when faced with the need to speak in public.

List of People

A. Christopher Peterson

B. David Fajgenbaum

C. Suzanne Segerstrom

D. Tanya Streeter

E. Todd Kashdan

F. Kenneth Pedeleose

G. Cynthia Pury

Questions 23-26

Reading Passage has eight sections, A-H.

Which section contains the following information?

Write the correct letter, A-H, in boxes 23-26 on your answer sheet.

23. a mention of how rational thinking enabled someone to achieve physical goals

24. an account of how someone overcame a sad experience

25. a description of how someone decided to rethink their academic career path

26. an example of how someone risked his career out of a sense of duty

23. Bài 23

Research using twins

To biomedical researchers all over the world, twins offer a precious opportunity to untangle the influence of genes and the environment - of nature and nurture. Because identical twins come from a single fertilized egg that splits into two, they share virtually the same genetic code. Any differences between them - one twin having younger looking skin, for example - must be due to environmental factors such as less time spent in the sun.

Alternatively, by comparing the experiences of identical twins with those of fraternal twins, who come from separate eggs and share on average half their DNA, researchers can quantify the extent to which our genes affect our lives. If identical twins are more similar to each other with respect to an ailment than fraternal twins are, then vulnerability to the disease must be rooted at least in part in heredity.

These two lines of research - studying the differences between identical twins to pinpoint the influence of environment, and comparing identical twins with fraternal ones to measure the role of inheritance - have been crucial to understanding the interplay of nature and nurture in determining our personalities, behavior, and vulnerability to disease.

The idea of using twins to measure the influence of heredity dates back to 1875, when the English scientist Francis Galton first suggested the approach (and coined the phrase 'nature and nurture'). But twin studies took a surprising twist in the 1980s, with the arrival of studies into identical twins who had been separated at birth and reunited as adults. Over two decades 137 sets of twins eventually visited Thomas Bouchard's lab in what became known as the Minnesota Study of Twins Reared Apart. Numerous tests were carried out on the twins, and they were each asked more than 15,000 questions.

Bouchard and his colleagues used this mountain of data to identify how far twins were affected by their genetic makeup. The key to their approach was a statistical concept called heritability. in broad terms, the heritability of a trait measures the extent to which differences among members of a population can be explained by differences in their genetics. And wherever Bouchard and other scientists looked, it seemed, they found the invisible hand of genetic influence helping to shape our lives.

Lately, however, twin studies have helped lead scientists to a radical new conclusion: that nature and nurture are not the only elemental forces at work. According to a recent field called epigenetics, there is a third factor also in play, one that in some cases serves as a bridge between the environment and our genes, and in others operates on its own to shape who we are.

Epigenetic processes are chemical reactions tied to neither nature nor nurture but representing what researchers have called a 'third component'. These reactions influence how our genetic code is expressed: how each gene is strengthened or weakened, even turned on or off, to build our bones, brains and all the other parts of our bodies.

If you think of our DNA as an immense piano keyboard and our genes as the keys - each key symbolizing a segment of DNA responsible for a particular note, or trait, and all the keys combining to make us who we are - then epigenetic processes determine when and how each key can be struck, changing the tune being played.

One way the study of epigenetics is revolutionizing our understanding of biology is by revealing a mechanism by which the environment directly impacts on genes. Studies of animals, for example, have shown that when a rat experiences stress during pregnancy, it can cause epigenetic changes in a fetus that lead to behavioral problems as the rodent grows up. Other epigenetic processes appear to occur randomly, while others are normal, such as those

that guide embryonic cells as they become heart, brain, or liver cells, for example.

Geneticist Danielle Reed has worked with many twins over the years and thought deeply about what twin studies have taught us. 'It's very clear when you look at twins that much of what they share is hardwired,' she says. 'Many things about them are absolutely the same and unalterable. But it's also clear, when you get to know them, that other things about them are different. Epigenetics is the origin of a lot of those differences, in my view.'

Reed credits Thomas Bouchard's work for today's surge in twin studies. 'He was the trailblazer,' she says. 'We forget that 50 years ago things like heart disease were thought to be caused entirely by lifestyle. Schizophrenia was thought to be due to poor mothering. Twin studies have allowed us to be more reflective about what people are actually born with and what's caused by experience.'

Having said that, Reed adds, the latest work in epigenetics promises to take our understanding even further. 'What I like to say is that nature writes some things in pencil and some things in pen,' she says. 'Things written in pen you can't change. That's DNA. But things written in pencil you can. That's epigenetics. Now that we're actually able to look at the DNA and see where the pencil writings are, it's sort of a whole new world.'

Questions 1-4

Do the following statements agree with the information given in the Reading Passage? In boxes 1-4 on your answer sheet, write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

1. There may be genetic causes for the differences in how young the skin of identical twins looks.
2. Twins are at greater risk of developing certain illnesses than non-twins.
3. Bouchard advertised in newspapers for twins who had been separated at birth.
4. Epigenetic processes are different from both genetic and environmental processes.

Questions 5-9: *Look at the following statements (Questions 5-9) and the list of researchers below. Match each statement with the correct researcher, A, B or C. Write the correct letter, A, B or C, in boxes 5-9 on your answer sheet.*

NB You may use any letter more than once.

List of Researchers

A. Francis Galton

B. Thomas Bouchard

C. Danielie Reed

5. invented a term used to distinguish two factors affecting human characteristics.
6. expressed the view that the study of epigenetics will increase our knowledge
7. developed a mathematical method of measuring genetic influences
8. pioneered research into genetics using twins
9. carried out research into twins who had lived apart

Questions 10-13

Complete the summary using the list of words, A-F, below. Write the correct letter, A-F, in boxes 10-13 on your answer sheet.

Epigenetic processes

In epigenetic processes, 10 ..... influence the activity of our genes, for example in creating our internal 11 ..... The study of epigenetic processes is uncovering a way in which our genes can be affected by our 12 ..... One example is that if a pregnant rat suffers stress, the new-born rat may later show problems in its 13 ..... .

A. nurture

B. organs

C. code

D. chemicals

E. environment

F. behavior

24. Bài 24

The Intersection of Health Sciences and Geography

A. While many diseases that affect humans have been eradicated due to improvements in vaccinations and the availability of healthcare, there are still areas around the world where certain health issues are more prevalent. In a world that is far more globalised than ever before, people come into contact with one another through travel and living closer and closer to each other. As a result, super-viruses and other infections resistant to antibiotics are becoming more and more common.

B. Geography can often play a very large role in the health concerns of certain populations. For instance, depending on where you live, you will not have the same health concerns as someone who lives in a different geographical region. Perhaps one of the most obvious examples of this idea is malaria-prone areas, which are usually tropical regions that foster a warm and damp environment in which the mosquitos that can give people this disease can grow. Malaria is much less of a problem in high-altitude deserts, for instance.

C. In some countries, geographical factors influence the health and well-being of the population in very obvious ways. In many large cities, the wind is not strong enough to clear the air of the massive amounts of smog and pollution that cause asthma, lung problems, eyesight issues and more in the people who live there. Part of the problem is, of course, the massive number of cars being driven, in addition to factories that run on coal power. The rapid industrialisation of some countries in recent years has also led to the cutting down of forests to allow for the expansion of big cities, which makes it even harder to fight the pollution with the fresh air that is produced by plants.

D. It is in situations like these that the field of health geography comes into its own. It is an increasingly important area of study in a world where diseases like

polio are re-emerging, respiratory diseases continue to spread, and malaria-prone areas are still fighting to find a better cure. Health geography is the combination of, on the one hand, knowledge regarding geography and methods used to analyse and interpret geographical information, and on the other, the study of health, diseases and healthcare practices around the world. The aim of this hybrid science is to create solutions for common geography-based health problems. While people will always be prone to illness, the study of how geography affects our health could lead to the eradication of certain illnesses, and the prevention of others in the future. By understanding why and how we get sick, we can change the way we treat illness and disease specific to certain geographical locations.

E. The geography of disease and ill health analyses the frequency with which certain diseases appear in different parts of the world, and overlays the data with the geography of the region, to see if there could be a correlation between the two. Health geographers also study factors that could make certain individuals or a population more likely to be taken ill with a specific health concern or disease, as compared with the population of another area. Health geographers in this field are usually trained as healthcare workers, and have an understanding of basic epidemiology as it relates to the spread of diseases among the population.

F. Researchers study the interactions between humans and their environment that could lead to illness (such as asthma in places with high levels of pollution) and work to create a clear way of categorising illnesses, diseases and epidemics into local and global scales. Health geographers can map the spread of illnesses and attempt to identify the reasons behind an increase or decrease in illnesses, as they work to find a way to halt the further spread or re-emergence of diseases in vulnerable populations.

G. The second subcategory of health geography is the geography of healthcare provision. This group studies the availability (of lack thereof) of healthcare resources to individuals and populations around the world. In both developed and developing nations, there is often a very large discrepancy between the options available to people in different social classes, income brackets, and levels of education. Individuals working in the area of the geography of healthcare provision attempt to assess the levels of healthcare in the area (for instance, it may be very difficult for people to get medical attention because there is a mountain between their village and the nearest hospital). These researchers are on the frontline of making recommendations regarding the policy to international organisations, local government bodies and others.

H. The field of health geography is often overlooked, but it constitutes a huge area of need in the fields of geography and healthcare. If we can understand how geography affects our health no matter where in the world we are located, we can better treat disease, prevent illness, and keep people safe and well.

Questions 14-19

Reading Passage 2 has eight sections, A-H.

Which paragraph contains the following information?

Write the correct letter, A-H, in boxes 14-19 on your answer sheet

NB You may use any letter more than once.

14. an acceptance that not all diseases can be totally eliminated
15. examples of physical conditions caused by human behavior
16. a reference to classifying diseases on the basis of how far they extend geographically
17. reasons why the level of access to healthcare can vary within a country
18. a description of health geography as a mixture of different academic fields
19. a description of the type of area where a particular illness is rare

Questions 20-26

Complete the sentences below. Choose ONE WORD ONLY from the passage for each answer.

20. Certain diseases have disappeared, thanks to better and ..... healthcare.
21. Because there is more contact between people, ... are losing their usefulness.
22. Disease-causing ..... are most likely to be found in hot, damp regions.
23. One cause of pollution is ..... that burn a particular fuel.
24. The growth of cities often has an impact on nearby .....
25. ..... is one disease that is growing after having been eradicated.
26. A physical barrier such as a ..... can prevent people from reaching a hospital.

25. Bài 25

Music and the emotions

Neuroscientist Jonah Lehrer considers the emotional power of music

Why does music make us feel? On the one hand, music is a purely abstract art form, devoid of language or explicit ideas. And yet, even though music says little, it still manages to touch us deeply. When listening to our favourite songs, our body betrays all the symptoms of emotional arousal. The pupils in our eyes dilate, our pulse and blood pressure rise, the electrical conductance of our skin is lowered, and the cerebellum, a brain region associated with bodily movement, becomes strangely active. Blood is even re-directed to the muscles in our legs. In other words, sound stirs us at our biological roots.

A recent paper in Neuroscience by a research team in Montreal, Canada, marks an important step in repealing the precise underpinnings of 'the potent pleasurable stimulus' that is music. Although the study involves plenty of fancy technology, including functional magnetic resonance imaging (fMRI) and ligand-based positron emission tomography (PET) scanning, the experiment itself was rather straightforward. After screening 217 individuals who responded to advertisements requesting people who experience 'chills' to instrumental music, the scientists narrowed down the subject pool to ten. They then asked the subjects to bring in their playlist of favourite songs - virtually every genre was represented, from techno to tango - and played them the music while their brain activity was monitored. Because the scientists were combining methodologies (PET and fMRI), they were able to obtain an impressively exact and detailed portrait of music in the brain. The first thing they discovered is that music triggers the production of dopamine - a chemical with a key role in setting people's moods - by the neurons (nerve cells) in both the dorsal and ventral

regions of the brain. As these two regions have long been linked with the experience of pleasure, this finding isn't particularly surprising.

What is rather more significant is the finding that the dopamine neurons in the caudate - a region of the brain involved in learning stimulus-response associations, and in anticipating food and other 'reward' stimuli - were at their most active around 15 seconds before the participants' favourite moments in the music. The researchers call this the 'anticipatory phase' and argue that the purpose of this activity is to help us predict the arrival of our favourite part.

The question, of course, is what all these dopamine neurons are up to. Why are they so active in the period preceding the acoustic climax? After all, we typically associate surges of dopamine with pleasure, with the processing of actual rewards. And yet, this cluster of cells is most active when the 'chills' have yet to arrive, when the melodic pattern is still unresolved.

One way to answer the question is to look at the music and not the neurons. While music can often seem (at least to the outsider) like a labyrinth of intricate patterns, it turns out that the most important part of every song or symphony is when the patterns break down, when the sound becomes unpredictable. If the music is too obvious, it is annoyingly boring, like an alarm clock. Numerous studies, after all, have demonstrated that dopamine neurons quickly adapt to predictable rewards. If we know what's going to happen next, then we don't get excited. This is why composers often introduce a key note in the beginning of a song, spend most of the rest of the piece in the studious avoidance of the pattern, and then finally repeat it only at the end. The longer we are denied the pattern we expect, the greater the emotional release when the pattern returns, safe and sound.

To demonstrate this psychological principle, the musicologist Leonard Meyer, in his classic book Emotion and Meaning in Music (1956), analysed the 5th movement of Beethoven's String Quartet in C-sharp minor, Op. 131. Meyer

wanted to show how music is defined by its flirtation with - but not submission to - our expectations of order. Meyer dissected 50 measures (bars) of the masterpiece, showing how Beethoven begins with the clear statement of a rhythmic and harmonic pattern and then, in an ingenious tonal dance, carefully holds off repeating it. What Beethoven does instead suggest variations of the pattern. I want to preserve an element of uncertainty in his music, making our brains beg for the one chord he refuses to give us. Beethoven saves that chord for the end.

According to Meyer, it is the suspenseful tension of music, arising out of our unfulfilled expectations, that is the source of the music's feeling. While earlier theories of music focused on the way a sound can refer to the real world of images and experiences - its 'connotative' meaning - Meyer argued that the emotions we find in music come from the unfolding events of the music itself. This 'embodied meaning' arises from the patterns the symphony invokes and then ignores. It is this uncertainty that triggers the surge of dopamine in the caudate, as we struggle to figure out what will happen next. We can predict some of the notes, but we can't predict them all, and that is what keeps us listening, waiting expectantly for our reward, for the pattern to be completed.

Questions 27-31

Complete the summary below. Choose NO MORE THAN TWO WORDS from the passage for each answer. Write your answers in boxes 27-31 on your answer sheet.

The Montreal Study

Participants, who were recruited for the study through advertisements, had their brain activity monitored while listening to their favourite music. It was noted that the music stimulated the brain's neurons to release a substance called (27) ….. in two of the parts of the brain which are associated with feeling (28) .....

Researchers also observed that the neurons in the area of the brain called the (29) ..... were particularly active just before the participants' favourite moments in the music - the period known as the (30)..... Activity in this part of the brain is associated with the expectation of 'reward' stimuli such as (31) .....

Questions 32-36: *Choose the correct letter, A, B, C or D. Write the correct letter in boxes 32-36 on your answer sheet.*

32. What point does the writer emphasise in the first paragraph?

A. how dramatically our reactions to music can vary

B. how intense our physical responses to music can be

C. how little we know about the way that music affects us=

D. how much music can tell us about how our brains operate

33. What view of the Montreal study does the writer express in the second paragraph?

A. Its aims were innovative.

B. The approach was too simplistic.

C. It produced some remarkably precise data.

D. The technology used was unnecessarily complex.

34. What does the writer find interesting about the results of the Montreal study?

A. the timing of participants' neural responses to the music

B. the impact of the music on participants' emotional state

C. the section of participants' brains which was activated by the music

D. the type of music which had the strongest effect on participants' brains

35. Why does the writer refer to Meyer's work on music and emotion?

A. to propose an original theory about the subject

B. to offer support for the findings of the Montreal study

C. to recommend the need for further research into the subject

D. to present a view which opposes that of the Montreal researchers

36. According to Leonard Meyer, what causes the listener's emotional response to music?

A. the way that the music evokes poignant memories in the listener

B. the association of certain musical chords with certain feelings

C. the listener's sympathy with the composer's intentions

D. the internal structure of the musical composition

Questions 37-40

Complete each sentence with the correct ending, A-F, below. Write the correct letter, A-F, in boxes 37-40 on your answer sheet.

37. The Montreal researchers discovered that

38. Many studies have demonstrated that

39. Meyer's analysis of Beethoven's music shows that

40. Earlier theories of music suggested that

A. our response to music depends on our initial emotional state.

B. neuron activity decreases if outcomes become predictable.

C. emotive music can bring to mind actual pictures and events.

D. experiences on our past can influence our emotional reaction to music.

E. emotive music delays giving listeners what they expect to hear.

F. neuron activity increases prior to key points in a musical piece.

26. Bài 26

Questions 14-19

Reading Passage 2 has six paragraphs, A-F. Choose the correct heading for each paragraph from the list of headings below. Write the correct number, i-viii, in boxes 14-19 on your answer sheet.

List of Headings

i. The productive outcomes that may result from boredom

ii. What teachers can do to prevent boredom

iii. A new explanation and a new cure for boredom

iv. Problems with a scientific approach to boredom

v. A potential danger arising from boredom

vi. Creating a system of classification for feelings of boredom

vii. Age groups most affected by boredom

viii. Identifying those most affected by boredom

14. Paragraph A

15. Paragraph B

16. Paragraph C

17. Paragraph D

18. Paragraph E

19. Paragraph F

Why being bored is stimulating – and useful, too

This most common of emotions is turning out to be more interesting than we thought

A. We all know how it feels – it's impossible to keep your mind on anything, time stretches out, and all the things you could do seem equally unlikely to make you feel better. But defining boredom so that it can be studied in the lab has proved difficult. For a start, it can include a lot of other mental states, such as frustration, apathy, depression and indifference. There isn't even agreement over whether boredom is always a low-energy, flat kind of emotion or whether feeling agitated and restless counts as boredom, too. In his book, Boredom: A Lively History, Peter Toohey at the University of Calgary, Canada, compares it to disgust – an emotion that motivates us to stay away from certain situations. 'If disgust protects humans from infection, boredom may protect them from "infectious" social situations,' he suggests.

B. By asking people about their experiences of boredom, Thomas Goetz and his team at the University of Konstanz in Germany have recently identified five distinct types: indifferent, calibrating, searching, reactant and apathetic. These can be plotted on two axes – one running left to right, which measures low to high arousal, and the other from top to bottom, which measures how positive or negative the feeling is. Intriguingly, Goetz has found that while people experience all kinds of boredom, they tend to specialise in one. Of the five types, the most damaging is 'reactant' boredom with its explosive combination of high arousal and negative emotion. The most useful is what Goetz calls 'indifferent' boredom: someone isn't engaged in anything satisfying but still feels relaxed and calm. However, it remains to be seen whether there are any character traits that predict the kind of boredom each of us might be prone to.

C. Psychologist Sandi Mann at the University of Central Lancashire, UK, goes further. 'All emotions are there for a reason, including boredom,' she says.

Mann has found that being bored makes us more creative. 'We're all afraid of being bored but in actual fact it can lead to all kinds of amazing things,' she says. In experiments published last year, Mann found that people who had been made to feel bored by copying numbers out of the phone book for 15 minutes came up with more creative ideas about how to use a polystyrene cup than a control group. Mann concluded that a passive, boring activity is best for creativity because it allows the mind to wander. In fact, she goes so far as to suggest that we should seek out more boredom in our lives.

D. Psychologist John Eastwood at York University in Toronto, Canada, isn't convinced. 'If you are in a state of mind-wandering you are not bored,' he says. 'In my view, by definition boredom is an undesirable state.' That doesn't necessarily mean that it isn't adaptive, he adds. 'Pain is adaptive – if we didn't have physical pain, bad things would happen to us. Does that mean that we should actively cause pain? No. But even if boredom has evolved to help us survive, it can still be toxic if allowed to fester.' For Eastwood, the central feature of boredom is a failure to put our 'attention system' into gear. This causes an inability to focus on anything, which makes time seem to go painfully slowly. What's more, your efforts to improve the situation can end up making you feel worse. 'People try to connect with the world and if they are not successful there's that frustration and irritability,' he says. Perhaps most worryingly, says Eastwood, repeatedly failing to engage attention can lead to state where we don't know what to do any more, and no longer care.

E. Eastwood's team is now trying to explore why the attention system fails. It's early days but they think that at least some of it comes down to personality. Boredom proneness has been linked with a variety of traits. People who are motivated by pleasure seem to suffer particularly badly. Other personality traits, such as curiosity, are associated with a high boredom threshold. More evidence that boredom has detrimental effects comes from studies of people who are

more or less prone to boredom. It seems those who bore easily face poorer prospects in education, their career and even life in general. But of course, boredom itself cannot kill – it's the things we do to deal with it that may put us in danger. What can we do to alleviate it before it comes to that? Goetz's group has one suggestion. Working with teenagers, they found that those who 'approach' a boring situation – in other words, see that it's boring and get stuck in anyway – report less boredom than those who try to avoid it by using snacks, TV or social media for distraction.

F. Psychologist Francoise Wemelsfelder speculates that our over-connected lifestyles might even be a new source of boredom. 'In modern human society there is a lot of overstimulation but still a lot of problems finding meaning,' she says. So instead of seeking yet more mental stimulation, perhaps we should leave our phones alone, and use boredom to motivate us to engage with the world in a more meaningful way.

Questions 20-23: *Look at the following people (Questions 20-23) and the list of ideas below. Match each person with the correct idea, A-E. Write the correct letter, A-E, in boxes 20-23 on your answer sheet.*

20. Peter Toohey
21. Thomas Goetz
22. John Eastwood
23. Francoise Wemelsfelder

List of Ideas

A. The way we live today may encourage boredom.
B. One sort of boredom is worse than all the others.
C. Levels of boredom may fall in the future.
D. Trying to cope with boredom can increase its negative effects.
E. Boredom may encourage us to avoid an unpleasant experience.

Questions 24-26

Complete the summary below. Choose ONE WORD ONLY from the passage for each answer. Write your answers in boxes 24-26 on your answer sheet.

Responses to boredom

For John Eastwood, the central feature of boredom is that people cannot 24……, due to a failure in what he calls the 'attention system', and as a result they become frustrated and irritable. His team suggests that those for whom 25…….. is an important aim in life may have problems in coping with boredom, whereas those who have the characteristic of 26…….. can generally cope with it.

27. Bài 27

Oxytocin

The positive and negative effects of the chemical known as the 'love hormone'

A. Oxytocin is a chemical, a hormone produced in the pituitary gland in the brain. It was through various studies focusing on animals that scientists first became aware of the influence of oxytocin. They discovered that it helps reinforce the bonds between prairie voles, which mate for life, and triggers the motherly behaviour that sheep show towards their newborn lambs. It is also released by women in childbirth, strengthening the attachment between mother and baby. Few chemicals have as positive a reputation as oxytocin, which is sometimes referred to as the 'love hormone'. One sniff of it can, it is claimed, make a person more trusting, empathetic, generous and cooperative. It is time, however, to revise this wholly optimistic view. A new wave of studies has shown that its effects vary greatly depending on the person and the circumstances, and it can impact on our social interactions for worse as well as for better.

B. Oxytocin's role in human behaviour first emerged in 2005. In a groundbreaking experiments, Markus Heinrichs and his colleagues at the University of Freiburg, Germany, asked volunteers to do an activity in which they could invest money with an anonymous person who was not guaranteed to be honest. The team found the participants who had sniffed oxytocin via a nasal spray beforehand invested more money than those who received a placebo instead. The study was the start of research into the effects of oxytocin on human interactions. 'For eight years, it was quite a lonesome field,' Heinrichs recalls. 'Now, everyone is interested.' These follow-up studies have shown that after a sniff of the hormone, people become more charitable, better at reading emotions on others' faces and at communicating constructively in arguments.

Together, the results fuelled the view that oxytocin universally enhanced the positive aspects of our social nature.

C. Then, after a few years, contrasting findings began to emerge. Simone Shamay-Tsoory at the at the University of Haifa, Israel, found that when volunteers played a competitive game, those who inhaled the hormone showed more pleasure when they beat other players, and felt more envy when others won. What's more, administering oxytocin also has sharply contrasting outcomes depending on a person's disposition. Jennifer Bartz from Mount Sinai School of Medicine, New York, found that it improves people's ability to read emotions, but only if they are not very socially adept to begin with. Her research also shows that oxytocin in fact reduces cooperation in subjects who are particularly anxious or sensitive to rejection.

D. Another discovery is that oxytocin's effects vary depending on who we are interacting with. Studies conducted by Carolyn DeClerck of the University of Antwerp, Belgium, revealed that people who had received a dose of oxytocin actually became less cooperative when dealing with complete strangers. Meanwhile, Carsten De Dreu at the University of Amsterdam in the Netherlands discovered that volunteers given oxytocin showed favouritism: Dutch men became quicker to associate positive words with Dutch names than with foreign ones, for example. According to De Dreu, oxytocin drives people to care for those in their social circles and defend them from outside dangers. So, it appears that oxytocin strengthens biases, rather than promoting general goodwill, as was previously thought.

E. There were signs of these subtleties from the start. Bartz has recently shown that in almost half of the existing research results, oxytocin influenced only certain individuals or in certain circumstances. Where once researchers took no notice of such findings, now a more nuanced understanding of oxytocin's effects is propelling investigations down new lines. To Bartz, the key to

understanding what the hormone does lies in pinpointing its core function rather than in cataloguing its seemingly endless effects. There are several hypotheses which are not mutually exclusive. Oxytocin could help to reduce anxiety and fear. Or it could simply motivate people to seek out social connections. She believes that oxytocin acts as a chemical spotlight that shines on social clues – a shift in posture, a flicker of the eyes, a dip in the voice – making people more attuned to their social environment. This would explain why it makes us more likely to look others in the eye and improves our ability to identify emotions. But it could also make things worse for people who are overly sensitive or prone to interpreting social cues in the worst light.

F. Perhaps we should not be surprised that the oxytocin story has become more perplexing. The hormone is found in everything from octopuses to sheep, and its evolutionary roots stretch back half a billion years. 'It's a very simple and ancient molecule that has been co-opted for many different functions,' says Sue Carter at the University of Illinois, Chicago, USA. 'It affects primitive parts of the brain like the amygdala, so it's going to have many effects on just about everything.' Bartz agrees. 'Oxytocin probably does some very basic things, but once you add our higher-order thinking and social situations, these basic processes could manifest in different ways depending on individual differences and context.'

Questions 14-17

Reading Passage 2 has six section, A-F.

Which paragraph contains the following information?

Write the correct letter, A-F, in boxes 14-17 on your answer sheet.

NB You may use any letter more than once.

14. reference to research showing the beneficial effects of oxytocin on people
15. reasons why the effects of oxytocin are complex
16. mention of a period in which oxytocin attracted little scientific attention
17. reference to people ignoring certain aspects of their research data

Questions 18-20

Look at the following research findings (Questions 18-20) and the list of researchers below. Match each research finding with the correct researcher, A-F. Write the correct letter, A-F, in boxes 18-20 on your answer sheet.

18. People are more trusting when affected by oxytocin.
19. Oxytocin increases people's feelings of jealousy.
20. The effect of oxytocin varies from one type of person to another.

List of Researchers

A. Markus Heinrichs
B. Simone Shamay-Tsoory
C. Jennifer Bartz
D. Carolyn DeClerck
E. Carsten De Dreu
F. Sue Carter

Questions 21-26

Complete the summary below. Choose ONE WORD ONLY from the passage for each answer. Write your answers in boxes 21-26 on your answer sheet.

Oxytocin research

The earliest findings about oxytocin and bonding came from research involving 21…….. It was also discovered that humans produce oxytocin during 22…… An experiment in 2005, in which participants were given either oxytocin or a 23……, reinforced the belief that the hormone had a positive effect.

However, later research suggests that this is not always the case. A study at the University of Haifa where participants took part in a 24 …….. revealed the negative emotions which oxytocin can trigger. A study at the University of Antwerp showed people's lack of willingness to help 25……. while under the influence of oxytocin. Meanwhile, research at the University of Amsterdam revealed that people who have been given oxytocin consider 26…….. that are familiar to them in their own country to have more positive associations than those from other cultures.

28. Bài 28

How baby talk gives infant brains a boost

A. The typical way of talking to a baby – high-pitched, exaggerated and repetitious – is a source of fascination for linguists who hope to understand how 'baby talk' impacts on learning. Most babies start developing their hearing while still in the womb, prompting some hopeful parents to play classical music to their pregnant bellies. Some research even suggests that infants are listening to adult speech as early as 10 weeks before being born, gathering the basic building blocks of their family's native tongue.

B. Early language exposure seems to have benefits to the brain – for instance, studies suggest that babies raised in bilingual homes are better at learning how to mentally prioritize information. So how does the sweet if sometimes absurd sound of infant-directed speech influence a baby's development? Here are some recent studies that explore the science behind baby talk.

C. Fathers don't use baby talk as often or in the same ways as mothers – and that's perfectly OK, according to a new study. Mark VanDam of Washington State University at Spokane and colleagues equipped parents with recording devices and speech-recognition software to study the way they interacted with their youngsters during a normal day. 'We found that moms do exactly what you'd expect and what's been described many times over,' VanDam explains. 'But we found that dads aren't doing the same thing. Dads didn't raise their pitch or fundamental frequency when they talked to kids.' Their role may be rooted in what is called the bridge hypothesis, which dates back to 1975. It suggests that fathers use less familial language to provide their children with a bridge to the kind of speech they'll hear in public. 'The idea is that a kid gets to practice a certain kind of speech with mom and another kind of speech with dad, so the kid then has a wider repertoire of kinds of speech to practice,' says VanDam.

D. Scientists from the University of Washington and the University of Connecticut collected thousands of 30-second conversations between parents and their babies, fitting 26 children with audio-recording vests that captured language and sound during a typical eight-hour day. The study found that the more baby talk parents used, the more their youngsters began to babble. And when researchers saw the same babies at age two, they found that frequent baby talk had dramatically boosted vocabulary, regardless of socioeconomic status. 'Those children who listened to a lot of baby talk were talking more than the babies that listened to more adult talk or standard speech,' says Nairán Ramirez-Esparza of the University of Connecticut. 'We also found that it really matters whether you use baby talk in a one-on-one context,' she adds. 'The more parents use baby talk one-on-one, the more babies babble, and the more they babble, the more words they produce later in life.'

E. Another study suggests that parents might want to pair their youngsters up so they can babble more with their own kind. Researchers from McGill University and Université du Québec à Montréal found that babies seem to like listening to each other rather than to adults – which may be why baby talk is such a universal tool among parents. They played repeating vowel sounds made by a special synthesizing device that mimicked sounds made by either an adult woman or another baby. This way, only the impact of the auditory cues was observed. The team then measured how long each type of sound held the infants' attention. They found that the 'infant' sounds held babies' attention nearly 40 percent longer. The baby noises also induced more reactions in the listening infants, like smiling or lip moving, which approximates sound making. The team theorizes that this attraction to other infant sounds could help launch the learning process that leads to speech. 'It may be some property of the sound that is just drawing their attention,' says study co-author Linda Polka. 'Or maybe they are really interested in that particular type of sound because they are

starting to focus on their own ability to make sounds. We are speculating here but it might catch their attention because they recognize it as a sound they could possibly make.'

F. In a study published in Proceedings of the National Academy of Sciences, a total of 57 babies from two slightly different age groups – seven months and eleven and a half months – were played a number of syllables from both their native language (English) and a non-native tongue (Spanish). The infants were placed in a brain-activation scanner that recorded activity in a brain region known to guide the motor movements that produce speech. The results suggest that listening to baby talk prompts infant brains to start practicing their language skills. 'Finding activation in motor areas the baby brain is engaged in trying to talk back right from the start, and suggests that seven-month-olds' brains are already trying to figure out how to make interesting finding was that while the seven-month-olds responded to all speech sounds regardless of language, the brains of the older infants worked harder at the motor activations of non-native sounds compared to native sounds. The study may have also uncovered a process by which babies recognize differences between their native language and other tongues.

Questions 14-17

Look at the following ideas (Questions 14-17) and the list of researchers below. Match each idea with the correct researcher, A, B or C. Write the correct letter, A, B or C, in boxes 14-17 on your answer sheet.

NB You may use any letter more than once.

14. the importance of adults giving babies individual attention when talking to them

15. the connection between what babies hear and their own efforts to create speech

16. the advantage for the baby of having two parents each speaking in a different way

17. the connection between the amount of baby talk babies hear and how much vocalising they do themselves

List of Researchers

A. Mark VanDam

B. Nairán Ramirez-Esparza

C. Patricia Kuhl

Questions 18-23

Complete the summary below. Choose NO MORE THAN TWO WORDS from the passage for each answer. Write your answers in boxes 18-23 on your answer sheet.

Research into how parents talk to babies

Researchers at Washington State University used 18……, together with specialised computer programs, to analyse how parents interacted with their babies during a normal day. The study revealed that 19…… tended not to modify their ordinary speech patterns when interacting with their babies. According to an idea known as the 20……., they may use a more adult type of speech to prepare infants for the language they will hear outside the family home. According to the researchers, hearing baby talk from one parent and 'normal' language from the other expands the baby's 21…… of types of speech which they can practise.

Meanwhile, another study carried out by scientists from the University of Washington and the University of Connecticut recorded speech and sound using special 22…… that the babies were equipped with. When they study the babies again at age two, the found that those who had heard a lot of baby talk in infancy had a much larger 23……. than those who had not.

Questions 24-26

Reading Passage 2 has six paragraphs, A-F.

Which paragraph contains the following information?

Write the correct letter, A-F, in boxes 24-26 on your answer sheet.

24. a reference to a change which occurs in babies' brain activity before the end of their first year.
25. an example of what some parents do for their baby's benefit before birth
26. a mention of babies' preference for the sounds that other babies make

29. Bài 29

The concept of intelligence

A. Looked at in one way, everyone knows what intelligence is; looked at in another way, no one does. In other words, people all have unconscious notions – known as 'implicit theories' – of intelligence, but no one knows for certain what it actually is. This chapter addresses how people conceptualize intelligence, whatever it may actually be. But why should we even care what people think intelligence is, as opposed only to valuing whatever it actually is? There are at least four reasons people's conceptions of intelligence matter.

B. First, implicit theories of intelligence drive the way in which people perceive and evaluate their own intelligence and that of others. To better understand the judgments people make about their own and others' abilities, it is useful to learn about people's implicit theories. For example, parents' implicit theories of their children's language development will determine at what ages they will be willing to make various corrections in their children's speech. More generally, parents' implicit theories of intelligence will determine at what ages they believe their children are ready to perform various cognitive tasks. Job interviewers will make hiring decisions on the basis of their implicit theories of intelligence. People will decide who to be friends with on the basis of such theories. In sum, knowledge about implicit theories of intelligence is important because this knowledge is so often used by people to make judgments in the course of their everyday lives.

C. Second, the implicit theories of scientific investigators ultimately give rise to their explicit theories. Thus it is useful to find out what these implicit theories are. Implicit theories provide a framework that is useful in defining the general scope of a phenomenon – especially a not-well-understood phenomenon.

These implicit theories can suggest what aspects of the phenomenon have been more or less attended to in previous investigations.

D. Third, implicit theories can be useful when an investigator suspects that existing explicit theories are wrong or misleading. If an investigation of implicit theories reveals little correspondence between the extant implicit and explicit theories, the implicit theories may be wrong. But the possibility also needs to be taken into account that the explicit theories are wrong and in need of correction or supplementation. For example, some implicit theories of intelligence suggest the need for expansion of some of our explicit theories of the construct.

E. Finally, understanding implicit theories of intelligence can help elucidate developmental and cross-cultural differences. As mentioned earlier, people have expectations for intellectual performances that differ for children of different ages. How these expectations differ is in part a function of culture. For example, expectations for children who participate in Western-style schooling are almost certain to be different from those for children who do not participate in such schooling.

F. I have suggested that there are three major implicit theories of how intelligence relates to society as a whole (Sternberg, 1997). These might be called Hamiltonian, Jeffersonian, and Jacksonian. These views are not based strictly, but rather, loosely, on the philosophies of Alexander Hamilton, Thomas Jefferson, and Andrew Jackson, three great statesmen in the history of the United States.

G. The Hamiltonian view, which is similar to the Platonic view, is that people are born with different levels of intelligence and that those who are less intelligent need the good offices of the more intelligent to keep them in line, whether they are called government officials or, in Plato's term, philosopher-kings. Herrnstein and Murray (1994) seem to have shared this belief when they

wrote about the emergence of a cognitive (high-IQ) elite, which eventually would have to take responsibility for the largely irresponsible masses of non-elite (low-IQ) people who cannot take care of themselves. Left to themselves, the unintelligent would create, as they always have created, a kind of chaos.

H. The Jeffersonian view is that people should have equal opportunities, but they do not necessarily avail themselves equally of these opportunities and are not necessarily equally rewarded for their accomplishments. People are rewarded for what they accomplish if given equal opportunity. Low achievers are not rewarded to the same extent as high achievers. In the Jeffersonian view, the goal of education is not to favor or foster an elite, as in the Hamiltonian tradition, but rather to allow children the opportunities to make full use of the skills they have. My own views are similar to these (Sternberg, 1997).

I. The Jacksonian view is that all people are equal, not only as human beings but in terms of their competencies – that one person would serve as well as another in government or on a jury or in almost any position of responsibility. In this view of democracy, people are essentially intersubstitutable except for specialized skills, all of which can be learned. In this view, we do not need or want any institutions that might lead to favoring one group over another.

J. Implicit theories of intelligence and of the relationship of intelligence to society perhaps need to be considered more carefully than they have been because they often serve as underlying presuppositions for explicit theories and even experimental designs that are then taken as scientific contributions. Until scholars are able to discuss their implicit theories and thus their assumptions, they are likely to miss the point of what others are saying when discussing their explicit theories and their data.

Questions 1-3

Reading Passage 1 has ten sections, A-J.

Which section contains the following information?

Write the correct letter, A-J, in boxes 1-3 on your answer sheet.

1. information about how non-scientists' assumptions about intelligence influence their behavior towards others
2. a reference to lack of clarity over the definition of intelligence
3. the point that a researcher's implicit and explicit theories may be very different

Questions 4-6

Do the following statements agree with the claims of the writer in Reading Passage 1? In boxes 4-6 on your answer sheet, write:

YES if the statement agrees with the claims of the writer

NO if the statement contradicts the claims of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

4. Slow language development in children is likely to prove disappointing to their parents.
5. People's expectations of what children should gain from education are universal.
6. Scholars may discuss theories without fully understanding each other.

Questions 7-13

Look at the following statements (Questions 7-13) and the list of theories below. Match each statement with the correct theory, A, B or C. Write the correct letter, A, B or C, in boxes 7-13 on your answer sheet.

NB You may use any letter more than once.

7. It is desirable for the same possibilities to be open to everyone.
8. No section of society should have preferential treatment at the expense of another.
9. People should only gain benefits on the basis of what they actually achieve.
10. Variation in intelligence begins at birth.
11. The more intelligent people should be in positions of power.
12. Everyone can develop the same abilities.
13. People of low intelligence are likely to lead uncontrolled lives.

List of Theories

A. Hamiltonian
B. Jeffersonian
C. Jacksonian

30. Bài 30

Saving bugs to find new drugs

ZOOLOGIST ROSS PIPER LOOKS AT THE POTENTIAL OF INSECTS IN PHARMACEUTICAL RESEARCH

A. More drugs than you might think are derived from, or inspired by, compounds found in living things. Looking to nature for the soothing and curing of our ailments is nothing new – we have been doing it for tens of thousands of years. You only have to look at other primates – such as the capuchin monkeys who rub themselves with toxin-oozing millipedes to deter mosquitoes or the chimpanzees who use noxious forest plants to rid themselves of intestinal parasites – to realize that our ancient ancestors too probably had a basic grasp of medicine.

B. Pharmaceutical science and chemistry built on these ancient foundations and perfected the extraction, characterization, modification, and testing of these natural products. Then, for a while, modern pharmaceutical science moved its focus away from nature and into the laboratory, designing chemical compounds from scratch. The main cause of this shift is that although there are plenty of promising chemical compounds in nature, finding them is far from easy. Securing sufficient numbers of the organism in question, isolating and characterizing the compounds of interest, and producing large quantities of these compounds are all significant hurdles.

C. Laboratory-based drug discovery has achieved varying levels of success, something which has now prompted the development of new approaches focusing once again on natural products. With the ability to mine genomes for useful compounds, it is now evident that we have barely scratched the surface of nature's molecular diversity. This realization, together with several looming

health crises, such as antibiotic resistance, has put bioprospecting – the search for useful compounds in nature – firmly back on the map.

D. Insects are the undisputed masters of the terrestrial domain, where they occupy every possible niche. Consequently, they have a bewildering array of interactions with other organisms, something which has driven the evolution of an enormous range of very interesting compounds for defensive and offensive purposes. Their remarkable diversity exceeds that of every other group of animals on the planet combined. Yet even though insects are far and away from the most diverse animals in existence, their potential as sources of therapeutic compounds is yet to be realized.

E. From the tiny proportion of insects that have been investigated, several promising compounds have been identified. For example, all of Eron, an antimicrobial compound produced by blowfly larvae, is used as an antiviral and antitumor agent in South Korea and Russia. The larvae of a few other insect species are being investigated for the potent antimicrobial compounds they produce. Meanwhile, a compound from the venom of the wasp Polybia Paulista has potential in cancer treatment.

F. Why is it that insects have received relatively little attention in bioprospecting? Firstly, there are so many insects that, without some manner of targeted approach, investigating this huge variety of species is a daunting task. Secondly, insects are generally very small, and the glands inside them that secrete potentially useful compounds are smaller still. This can make it difficult to obtain sufficient quantities of the compound for subsequent testing. Thirdly, although we consider insects to be everywhere, the reality of this ubiquity is vast numbers of a few extremely common species. Many insect species are infrequently encountered and very difficult to rear in captivity, which, again, can leave us with insufficient material to work with.

G. My colleagues and I at Aberystwyth University in the UK have developed an approach in which we use our knowledge of ecology as a guide to target our efforts. The creatures that particularly interest us are the many insects that secrete powerful poison for subduing prey and keeping it fresh for future consumption. There are even more insects that are masters of exploiting filthy habitats, such as feces and carcasses, where they are regularly challenged by thousands of micro-organisms. These insects have many antimicrobial compounds for dealing with pathogenic bacteria and fungi, suggesting that there is certainly potential to find many compounds that can serve as or inspire new antibiotics.

H. Although natural history knowledge points us in the right direction, it doesn't solve the problems associated with obtaining useful compounds from insects. Fortunately, it is now possible to snip out the stretches of the insect's DNA that carry the codes for the interesting compounds and insert them into cell lines that allow larger quantities to be produced. And although the road from isolating and characterizing compounds with desirable qualities to developing a commercial product is very long and full of pitfalls, the variety of successful animal-derived pharmaceuticals on the market demonstrates there is a precedent here that is worth exploring.

I. With every bit of wilderness that disappears, we deprive ourselves of potential medicines. As much as I'd love to help develop a groundbreaking insect-derived medicine, my main motivation for looking at insects in this way is conservation. I sincerely believe that all species, however small and seemingly insignificant, have a right to exist for their own sake. If we can shine a light on the darker recesses of nature's medicine cabinet, exploring the useful chemistry of the most diverse animals on the planet, I believe we can make people think differently about the value of nature.

Questions 14-20

Reading Passage 2 has nine paragraphs, A-I.

Which paragraph contains the following information?

Write the correct letter, A-I, in boxes 14-20 on your answer sheet.

14. mention of factors driving a renewed interest in natural medicinal compounds.
15. how recent technological advances have made insect research easier
16. examples of animals which use medicinal substances from nature
17. reasons why it is challenging to use insects in drug research
18. reference to how interest in drug research may benefit wildlife
19. a reason why nature-based medicines fell out of favor for a period
20. an example of an insect-derived medicine in use at the moment

Questions 21-22

Choose TWO letters, A-E. Write the correct letters in boxes 21 and 22 on your answer sheet.

Which TWO of the following make insects interesting for drug research?

A. the huge number of individual insects in the world
B. the variety of substances insects have developed to protect themselves
C. the potential to extract and make use of insects' genetic codes
D. the similarities between different species of insect
E. the manageable size of most insects

Questions 23-26

Complete the summary below. Choose ONE WORD ONLY from the passage for each answer. Write your answers in boxes 23-26 on your answer sheet.

Research at Aberystwyth University

Ross Piper and fellow zoologists at Aberystwyth University are using their expertise in 23……. when undertaking bioprospecting with insects. They are especially interested in the compounds that insects produce to overpower and preserve their 24……. They are also interested in compounds which insects use to protect themselves from pathogenic bacteria and fungi found in their 25……. Piper hopes that these substances will be useful in the development of drugs such as 26……..

31. Bài 31

The secret of staying young

Pheidole dentata, a native ant of the south-eastern U.S., isn't immortal. But scientists have found that it doesn't seem to show any signs of aging. Old workers ants can do everything just as well as the youngsters, and their brains appear just as sharp. 'We get a picture that these ants really don't decline,' says Ysabel Giraldo, who studies the ants for her doctoral thesis at Boston University.

Such age-defying feats are rare in the animal kingdom. Naked mole rats can live for almost 30 years and stay fit for nearly their entire lives. They can still reproduce even when old, and they never get cancer. But the vast majority of animals deteriorate with age just like people do. Like the naked mole rat, ants are social creatures that usually live in highly organised colonies. 'It's this social complexity that makes P. dentata useful for studying aging in people,' says Giraldo, now at the California Institute of Technology. Humans are also highly social, a trait that has been connected to healthier aging. By contrast, most animal studies of aging use mice, worms or fruit flies, which all lead much more isolated lives.

In the lab, P. dentata worker ants typically live for around 140 days. Giraldo focused on ants at four age ranges: 20 to 22 days, 45 to 47 days, 95 to 97 days and 120 to 122 days. Unlike all previous studies, which only estimated how old the ants were, her work tracked the ants from the time the pupae became adults, so she knew their exact ages. Then she put them through a range of tests.

Giraldo watched how well the ants took care of the young of the colony, recording how often each ant attended to, carried and fed them. She compared how well 20-day-old and 95-day-old ants followed the telltale scent that the

insects usually leave to mark a trail to food. She tested how ants responded to light and also measured how active they were by counting how often ants in a small dish walked across a line. And she experimented with how ants react to live prey: a tethered fruit fly. Giraldo expected the older ants to perform poorly in all these tasks. But the elderly insects were all good caretakers and trail-followers – the 95-day-old ants could track the scent even longer than their younger counterparts. They all responded do light well, and the older ants were more active. And when it came to reacting to prey, the older ants attacked the poor fruit fly just as aggressively as the young ones did, flaring their mandibles or pulling at the fly's legs.

Then Giraldo compared the brains of 20-day-old and 95-day-ole ants, identifying any cells that were close to death. She saw no major differences with age, nor was there any difference in the location of the dying cells, showing that age didn't seem to affect specific brain functions. Ants and other insects have structures in their brains called mushroom bodies, which are important for processing information, learning and memory. She also wanted to see if aging affects the density of synaptic complexes within these structures – regions where neurons come together. Again, the answer was no. what was more, he old ants didn't experience any drop in the levels of either serotonin or dopamine – brain chemicals whose decline often coincides with aging. In humans, for example, a decrease in serotonin has been linked to Alzheimer's disease. 'This is the first time anyone has looked at both behavioral and neural changes in these ants so thoroughly,' says Giraldo, who recently published the findings in the Proceeding of the Royal Society B. Scientists have looked at some similar aspects in bees, but the results of recent bee studies were mixed – some studies showed age-related declines, which biologists call senescence, and others didn't. 'For now, the study raises more questions than it answers,' Giraldo says, 'including how P. dentata stays in such good shape.'

Also, if the ants don't deteriorate with age, why do they die at all? Out in the wild, the ants probably don't live for a full 140 days thanks to predators, disease and just being in an environment that's much harsher than the comforts of the lab. 'The lucky ants that do live into old age may suffer a steep decline just before dying,' Giraldo says, but she can't say for sure because her study wasn't designed to follow an ant's final moments.

'It will be important to extend these findings to other species of social insects,' says Gene E. Robinson, an entomologist at the University of Illinois at Urbana-Champaign. This ant might be unique, or it might represent a broader pattern among other social bugs with possible clues to the science of aging in larger animals. Either way, it seems that for these ants, age really doesn't matter.

Questions 1-8: *Complete the notes below. Choose ONE WORD ONLY from the passage for each answer. Write your answer in boxes 1-8 on your answer sheet.*

Ysabel Giraldo's research

Focused on a total of 1…….. different age groups of ants, analyzing

Behaviour:

- how well ants looked after their 2 ……..
- their ability to locate 3…… using a scent trail
- the effect that 4…….. had on them
- how 5……. they attacked prey

Brains:

- comparison between age and the 6…… of dying cells in the brains of ants
- condition of synaptic complexes (areas in which 7…… meet) in the brain's 'mushroom bodies'
- level of two 8…….. in the brain associated with ageing

Questions 9-13

Do the following statements agree with the information give in Reading Passage 1? In boxes 9-13 on your answer sheet, write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

9. Pheidole dentata ants are the only known animals which remain active for almost their whole lives.

10. Ysabel Giraldo was the first person to study Pheidole dentata ants using precise data about the insects' ages.

11. The ants in Giraldo's experiments behaved as she had predicted that they would.

12. The recent studies of bees used different methods of measuring age-related decline.

13. Pheidole dentata ants kept in laboratory conditions tend to live longer lives.

32. Bài 32

Having a laugh

The findings of psychological scientists reveal the importance of humour

Humans start developing a sense of humour as early as six weeks old, when babies begin to laugh and smile in response to stimuli. Laughter is universal across all human cultures and even exists in some form in rats, chimps, and bonobos. Like other human emotions and expressions, laughter and humour psychological scientists with rich resources for studying human psychology, ranging from the development of language to the neuroscience of social perception.

Theories focusing on the evolution of laughter point to it as an important adaptation for social communication. Take, for example, the recorded laughter in TV comedy shows. Back in 1950, US sound engineer Charley Douglass hated dealing with the unpredictable laughter of live audiences, so started recording his own 'laugh tracks'. These were intended to help people at home feel like they were in a social situation, such as a crowded theatre. Douglass even recorded various types of laughter, as well as mixtures of laugher from men, women, and children. In doing so, he picked up on a quality of laughter that is now interesting researchers: a simple 'haha' communicates a remarkable amount of socially relevant information.

In one study conducted in 2016, samples of laughter from pairs of English-speaking students were recorded at the University of California, Santa Cruz. A team made up of more than 30 psychological scientists, anthropologists, and biologists then played these recording to listeners from 24 diverse societies, from indigenous tribes in New Guinea to city-dwellers in India and Europe. Participants were asked whether they thought the people laughing were friends

or strangers. On average, the results were remarkably consistent: worldwide, people's guesses were correct approximately 60% of the time.

Researchers have also found that different types of laughter serve as codes to complex human social hierarchies. A team led by Christopher Oveis from the University of California, San Diego, found that high-status individuals had different laughs from low-status individuals, and that strangers' judgements of an individual's social status were influenced by the dominant or submissive quality of their laughter. In their study, 48 male college students were randomly assigned to groups of four, with each group composed of two low-status members, who had just joined their college fraternity group, and two high-status members, older student took a turn at being teased by the others, involving the use of mildly insulting nicknames. Analysis revealed that, as expected, high-status individuals produced more dominant laughs and fewer submissive laughs relative to the low-status individuals. Meanwhile, low-status individuals were more likely to change their laughter based on their position of power; that is, the newcomers produced more dominant laughs when they were in the 'powerful' role of teasers. Dominant laughter was higher in pitch, louder, and more variable in tone than submissive laughter.

A random group of volunteers then listened to an equal number of dominant and submissive laughs from both the high- and low-status individuals, and were asked to estimate the social status of the laughter. In line with predictions, laughers producing dominant laughs were perceived to be significantly higher in status than laughers producing submissive laughs. 'This was particularly true for low-status individuals, who were rated as significantly higher in status when displaying a dominant versus submissive laugh,' Oveis and colleagues note. 'Thus, by strategically displaying more dominant laughter when the context allows, low-status individuals may achieve higher status in the eyes of others.'

However, high-status individuals were rated as high-status whether they produced their natural dominant laugh or tried to do a submissive one.

Another study, conducted by David Cheng and Lu Wang of Australian National University, was based on the hypothesis that humour might provide a respite from tedious situations in the workplace. This 'mental break' might facilitate the replenishment of mental resources. To test this theory, the researchers recruited 74 business students, ostensibly for an experiment on perception. First, the students performed a tedious task in which they had to cross out every instance of the letter 'e' over two pages of text. The students then were randomly assigned to watch a video clip eliciting either humour, contentment, or neutral feelings. Some watched a clip of the BBC comedy Mr. Bean, others a relaxing scene with dolphins swimming in the ocean, and others a factual video about the management profession.

The students then completed a task requiring persistence in which they were asked to guess the potential performance of employees based on provided profiles, and were told that making 10 correct assessments in a row would lead to a win. However, the software was programmed such that is was nearly impossible to achieve 10 consecutive correct answers. Participants were allowed to quit the task at any point. Students who had watched the Mr. Bean video ended up spending significantly more time working on the task, making twice as many predictions as the other two groups.

Cheng and Wang then replicated these results in a second study, during which they had participants complete long multiplication questions by hand. Again, participants who watched the humorous video spent significantly more time working on this tedious task and completed more questions correctly than did the students in either of the other groups.

'Although humour has been found to help relieve stress and facilitate social relationships, traditional view of task performance implies that individuals

should avoid things such as humour that may distract them from the accomplishment of task goals,' Cheng and Wang conclude. 'We suggest that humour is not only enjoyable but more importantly, energising.'

Questions 27-31

Choose the correct letter, A, B, C or D. Write the correct letter in boxes 27-31 on your answer sheet.

27. When referring to laughter in the first paragraphs, the writer emphasises

A. its impact on language.

B. its function in human culture.

C. its value to scientific research.

D. its universality in animal societies.

28. What does the writer suggest about Charley Douglass?

A. He understood the importance of enjoying humour in a group setting.

B. He believed that TV viewers at home needed to be told when to laugh.

C. He wanted his shows to appeal to audiences across the social spectrum.

D. He preferred shows where audiences were present in the recording studio.

29. What makes the Santa Cruz study particularly significant?

A. the various different types of laughter that were studied

B. the similar results produced by a wide range of cultures

C. the number of different academic disciplines involved

D. the many kinds of people whose laughter was recorded

30. Which of the following happened in the San Diego study?

A. Some participants became very upset.

B. Participants exchanged roles.

C. Participants who had not met before became friends.

D. Some participants were unable to laugh.

31. In the fifth paragraph, what did the results of the San Diego study suggest?

A. It is clear whether a dominant laugh is produced by a high- or low-status person.

B. Low-status individuals in a position of power will still produce submissive laughs.

C. The submissive laughs of low- and high-status individuals are surprisingly similar.

D. High-status individuals can always be identified by their way of laughing.

Questions 32-36

Complete the summary using the list of words, A-H, below. Write the correct letter, A-H, in boxes 32-36 on your answer sheet.

The benefits of humour

In one study at Australian National University, randomly chosen groups of participants were shown one of three videos, each designed to generate a different kind of 32……... When all participants were then given a deliberately frustrating task to do, it was found that those who had watched the 33…….. video persisted with the task for longer and tried harder to accomplish the task than either of the other two groups.

A second study in which participants were asked to perform a particularly 34…… task produced similar results. According to researchers David Cheng and Lu Wang, these findings suggest that humour not only reduces 35…… and helps build social connections but it may also have a 36……. Effect on the body and mind.

A. laughter	B. relaxing	C. boring
D. anxiety	E. stimulating	F. emotion
G. enjoyment	H. amusing	

Questions 37-40

Do the following statements agree with the information given in Reading Passage 3? In boxes 37-40 on your answer sheet, write:

TRUE if the statement agrees with the claims of the writer

FALSE if the statement contradicts the claims of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

37. Participants in the Santa Cruz study were more accurate at identifying the laughs of friends than those of strangers.

38. The researchers in the San Diego study were correct in their predictions regarding the behaviour of the high-status individuals.

39. The participants in the Australian National University study were given a fixed amount of time to complete the task focusing on employee profiles.

40. Cheng and Wang's conclusions were in line with established notions regarding task performance.

33. Bài 33

Timur Gareyev – blindfold chess champion

A. Next month, a chess player named Timur Gareyev will take on nearly 50 opponents at once. But that is not the hard part. While his challengers will play the games as normal, Gareyev himself will be blindfolded. Even by world record standards, it sets a high bar for human performance. The 28-year-old already stands out in the rarefied world of blindfold chess. He has a fondness for bright clothes and unusual hairstyles, and he gets his kicks from the adventure sport of BASE jumping. He has already proved himself a strong chess player, too. In a 10-hour chess marathon in 2013, Gareyev played 33 games in his head simultaneously. He won 29 and lost none. The skill has become his brand: he calls himself the Blindfold King.

B. But Gareyev's prowess has drawn interest from beyond the chess-playing community. In the hope of understanding how he and others like him can perform such mental feats, researchers at the University of California in Los Angeles (UCLA) called him in for tests. They now have their first results. 'The ability to play a game of chess with your eyes closed is not a far reach for most accomplished player,' said Jesse Rissman, who runs a memory lab at UCLA. 'But the thing that's so remarkable about Timur and a few other individuals is the number of games they can keep active at once. To me it is simply astonishing.'

C. Gareyev learned to play chess in his native Uzbekistan when he was six years old. Tutored by his grandfather, he entered his first tournament aged eight and soon became obsessed with competitions. At 16, he was crowned Asia's youngest ever chess grandmaster. He moved to the US soon after, and as a student helped his university win its first national chess championship. In 2013, Gareyev was ranked the third best chess player in the US.

D. To the uninitiated, blindfold chess seems to call for superhuman skill. But displays of the feat go back centuries. The first recorded game in Europe was played in 13th-century Florence. In 1947, the Argentinian grandmaster Miguel Najdorf played 45 simultaneous games in his mind, winning 39 in the 24-hour session.

E. Accomplished players can develop the skill of playing blind even without realising it. The nature of the game is to run through possible moves in the mind to see how they play out. From this, regular players develop a memory for the patterns the pieces make, the defences and attacks. 'You recreate it in your mind,' said Gareyev. 'A lot of players are capable of doing what I'm doing.' The real mental challenge comes from playing multiple games at once in the head. Not only must the positions of each piece on every board be memorised, they must be recalled faithfully when needed, updated with each player's moves, and then reliably stored again, so the brain can move on to the next board. First moves can be tough to remember because they are fairly uninteresting. But the ends of games are taxing too, as exhaustion sets in. When Gareyev is tired, his recall can get patchy. He sometimes makes moves based on only a fragmented memory of the pieces' positions.

F. The scientists first had Gareyev perform some standard memory tests. These assessed his ability to hold numbers, pictures and words in mind. One classic test measures how many numbers a person can repeat, both forwards and backwards, soon after hearing them. Most people manage about seven. 'He was not exceptional on any of these standard tests,' said Rissman. 'We didn't find anything other than playing chess that he seems to be supremely gifted at.' But next came the brain scans. With Gareyev lying down in the machine, Rissman looked at how well connected the various regions of the chess player's brain were. Though the results are tentative and as yet unpublished, the scans found much greater than average communication

between parts of Gareyev's brain that make up what is called the frontoparietal control network. Of 63 people scanned alongside the chess player, only one or two scored more highly on the measure. 'You use this network in almost any complex task. It helps you to allocate attention, keep rules in mind, and work out whether you should be responding or not,' said Rissman.

G. It was not the only hint of something special in Gareyev's brain. The scans also suggest that Gareyev's visual network is more highly connected to other brain parts than usual. Initial results suggest that the areas of his brain that process visual images – such as chess boards – may have stronger links to other brain regions, and so be more powerful than normal. While the analyses are not finalised yet, they may hold the first clues to Gareyev's extraordinary ability.

H. For the world record attempt, Gareyev hopes to play 47 blindfold games at once in about 16 hours. He will need to win 80% to claim the title. 'I don't worry too much about the winning percentage, that's never been an issue for me,' he said. 'The most important part of blindfold chess for me is that I have found the one thing that I can fully dedicate myself to. I miss having an obsession.'

Questions 27-32: Reading Passage 3 has eight paragraphs, A-H.

Which paragraph contains the following information?

Write the correct letter, A-H, in boxes 27-32 on your answer sheet. NB You may use any letter more than once.

27. a reference to earlier examples of blindfold chess
28. an outline of what blindfold chess involves
29. a claim that Gareyev's skill is limited to chess
30. why Gareyev's skill is of interest to scientists
31. an outline of Gareyev's priorities
32. a reason why the last part of a game may be difficult

Questions 33-36

Do the following statements agree with the information given in Reading Passage 3? In boxes 33-36 on your answer sheet, write:

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information on this

33. In the forthcoming games, all the participants will be blindfolded.
34. Gareyev has won competitions in BASE jumping.
35. UCLA is the first university to carry out research into blindfold chess players.
36. Good chess players are likely to be able to play blindfold chess.

Questions 37-40

Complete the summary below. Choose ONE WORD ONLY from the passage for each answer. Write the correct letter in boxes 37-40 on your answer sheet.

How the research was carried out

The researchers started by testing Gareyev's 37 ……; for example, he was required to recall a string of 38 …… in order and also in reverse order. Although his performance was normal, scans showed an unusual amount of 39 …… within the areas of Gareyev's brain that are concerned with directing attention. In addition, the scans raised the possibility of unusual strength in the parts of his brain that deal with 40 …… input.

34. Bài 34

The Flavor of Pleasure

When it comes to celebrating the flavor of food, our mouth gets all the credit. But in truth, it is the nose that knows.

No matter how much we talk about tasting our favorite flavors, relishing them really depends on a combined input from our senses that we experience through mouth, tongue and nose. The taste, texture, and feel of food are what we tend to focus on, but most important are the slight puffs of air as we chew our food – what scientists call 'retronasal smell'.

Certainly, our mouths and tongues have taste buds, which are receptors for the five basic flavors: sweet, salty, sour, bitter, and umami, or what is more commonly referred to as savory. But our tongues are inaccurate instruments as far as flavor is concerned. They evolved to recognise only a few basic tastes in order to quickly identify toxins, which in nature are often quite bitter or acidly sour.

All the complexity, nuance, and pleasure of flavor come from the sense of smell operating in the back of the nose. It is there that a kind of alchemy occurs when we breathe up and out the passing whiffs of our chewed food. Unlike a hound's skull with its extra long nose, which evolved specifically to detect external smells, our noses have evolved to detect internal scents. Primates specialise in savoring the many millions of flavor combinations that they can create for their mouths.

Taste without retronasal smell is not much help in recognising flavor. Smell has been the most poorly understood of our senses, and only recently has neuroscience, led by Yale University's Gordon Shepherd, begun to shed light on its workings. Shepherd has come up with the term 'neurogastronomy' to link the disciplines of food science, neurology, psychology, and anthropology with

the savory elements of eating, one of the most enjoyed of human experiences. In many ways, he is discovering that smell is rather like face recognition. The visual system detects patterns of light and dark and, building on experience, the brain creates a spatial map. It uses this to interpret the interrelationship of the patterns and draw conclusions that allow us to identify people and places. In the same way, we use patterns and ratios to detect both new and familiar flavors. As we eat, specialised receptors in the back of the nose detect the air molecules in our meals. From signals sent by the receptors, the brain understands smells as complex spatial patterns. Using these, as well as input from the other senses, it constructs the idea of specific flavors. This ability to appreciate specific aromas turns out to be central to the pleasure we get from food, much as our ability to recognise individuals is central to the pleasures of social life. The process is so embedded in our brains that our sense of smell is critical to our enjoyment of life at large. Recent studies show that people who lose the ability to smell become socially insecure, and their overall level of happiness plummets.

Working out the role of smell in flavor interests food scientists, psychologists, and cooks alike. The relatively new discipline of molecular gastronomy, especially, relies on understanding the mechanics of aroma to manipulate flavor for maximum impact. In this discipline, chefs use their knowledge of the chemical changes that take place during cooking to produce eating pleasures that go beyond the 'ordinary'.

However, whereas molecular gastronomy is concerned primarily with the food or 'smell' molecules, neurogastronomy is more focused on the receptor molecules and the brain's spatial images for smell. Smell stimuli form what Shepherd terms 'odor objects', stored as memories, and these have a direct link with our emotions. The brain creates images of unfamiliar smells by relating them to other more familiar smells. Go back in history and this was part of

our survival repertoire; like most animals, we drew on our sense of smell, when visual information was scarce, to single out prey.

Thus the brain's flavor-recognition system is a highly complex perceptual mechanism that puts all five senses to work in various combinations. Visual and sound cues contribute, such as crunching, as does touch, including the texture and feel of food on our lips and in our mouths. Then there are the taste receptors, and finally, the smell, activated when we inhale. The engagement of our emotions can be readily illustrated when we picture some of the wide-ranging facial expressions that are elicited by various foods – many of them hard-wired into our brains at birth. Consider the response to the sharpness of a lemon and compare that with the face that is welcoming the smooth wonder of chocolate.

The flavor-sensing system, ever receptive to new combinations, helps to keep our brains active and flexible. It also has the power to shape our desires and ultimately our bodies. On the horizon we have the positive application of neurogastronomy: manipulating flavor to curb our appetites.

Questions 1-5

Complete the notes below. Choose NO MORE THAN TWO WORDS from the text for each answer. Write your answers in boxes 1-5 on your answer sheet.

1. According to scientists, the term……. characterises the most critical factor in appreciating flavour.
2. 'Savoury' is a better-known word for……
3. The tongue was originally developed to recognise the unpleasant taste of……..
4. Human nasal cavities recognize……much better than external ones.
5. Gordon Shepherd uses the word 'neurogastronomy' to draw together a number of……related to the enjoyment of eating.

Questions 6-9

Complete the notes below. Choose NO MORE THAN TWO WORDS from the text for each answer. Write your answers in boxes 6-9 on your answer sheet

Face recognition	patterns of dark and light are used to put together a **6**	→ the brain identifies faces	facial recognition is key to our enjoyment of **7** .....
Smell	receptors recognise the **8** ..... in food	→ the brain identifies certain **9**	smell is key to our enjoyment of food

Questions 10-13

Answer the questions below. Choose NO MORE THAN ONE WORD from the text for each answer. Write your answers in boxes 10-13 on your answer sheet.

10. In what form does the brain store 'odor objects'?
11. When seeing was difficult, what did we use our sense of smell to find?
12. Which food item illustrates how flavour and positive emotion are linked?
13. What could be controlled in the future through flavour manipulation?

35. Bài 35

It's your choice – or is it really?

As we move from the industrial age to the information age, societal demands on our mental capabilities are no less taxing ...

We are constantly required to process a wide range of information to make decisions. Sometimes, these decisions are trivial, such as what marmalade to buy. At other times, the stakes are higher, such as deciding which symptoms to report to the doctor. However, the fact that we are accustomed to processing large amounts of information does not mean that we are better at it (Chabris & Simons, 2009). Our sensory and cognitive systems have systematic ways of failing of which we are often, perhaps blissfully, unaware.

Imagine that you are taking a walk in your local city park when a tourist approaches you asking for directions. During the conversation, two men carrying a door pass between the two of you. If the person asking for directions had changed places with one of the people carrying the door, would you notice? Research suggests that you might not. Harvard psychologists Simons and Levi (1998) conducted a field study using this exact set-up and found that the change in identity went unnoticed by 7 (46.6%) of the 15 participants. This phenomenon has been termed 'change blindness'and refers to the difficulty that observers have in noticing changes to visual scenes (e.g. the person swap), when the changes are accompanied by some other visual disturbance (e.g. the passing of the door).

Over the past decade, the change blindness phenomenon has been replicated many times. Especially noteworthy is an experiment by Davies and Hine (2007) who studied whether change blindness affects eyewitness identification. Specifically, participants were presented with a video enactment of a burglary. In the video, a man entered a house, walking through the different rooms and

putting valuables into a knapsack. However, the identity of the burglar changed after the first half of the film while the initial burglar was out of sight. Out of the 80 participants, 49 (61%) did not notice the change of the burglar's identity, suggesting that change blindness may have serious implications for criminal proceedings.

To most of us, it seems bizarre that people could miss such obvious changes while they are paying active attention. However, to catch those changes, attention must be targeted to the changing feature. In the study described above, participants were likely not to have been expecting the change to happen, and so their attention may have been focused on the valuables the burglar was stealing, rather than the burglar.

Drawing from change blindness research, scientists have come to the conclusion that we perceive the world in much less detail than previously thought (Johansson, Hall, & Sikstrom, 2008). Rather than monitoring all of the visual details that surround us, we seem to focus our attention only on those features that are currently meaningful or important, ignoring those that are irrelevant to our current needs and goals.Thus at any given time, our representation of the world surrounding us is crude and incomplete, making it possible for changes or manipulations to go undetected (Chabris & Simons, 2010).

Given the difficulty people have in noticing changes to visual stimuli, one may wonder what would happen if these changes concerned the decisions people make. To examine choice blindness, Hall and colleagues (2010) invited supermarket customers to sample two different kinds of jams and teas. After participants had tasted or smelled both samples, they indicated which one they preferred. Subsequently, they were purportedly given another sample of their preferred choice. On half of the trials, however, these were samples of the non-chosen jam or tea. As expected, only about one-third of the participants

detected this manipulation. Based on these findings, Hall and colleagues proposed that choice blindness is a phenomenon that occurs not only for choices involving visual material, but also for choices involving gustatory and olfactory information.

Recently, the phenomenon has also been replicated for choices involving auditory stimuli (Sauerland, Sagana, & Otgaar, 2012). Specifically, participants had to listen to three pairs of voices and decide for each pair which voice they found more sympathetic or more criminal. The voice was then presented again; however, the outcome was manipulated for the second voice pair and participants were presented with the nonchosen voice. Replicating the findings by Hall and colleagues, only 29% of the participants detected this change. Merckelbach, Jelicic, and Pieters (2011) investigated choice blindness for intensity ratings of one's own psychological symptoms. Their participants had to rate the frequency with which they experienced 90 common symptoms (e.g. anxiety, lack of concentration, stress, headaches etc.) on a 5-point scale. Prior to a follow-up interview, the researchers inflated ratings for two symptoms by two points. For example, when participants had rated their feelings of shyness, as 2 (i.e. occasionally), it was changed to 4 (i.e. all the time). This time, more than half (57%) of the 28 participants were blind to the symptom rating escalation and accepted it as their own symptom intensity rating. This demonstrates that blindness is not limited to recent preference selections, but can also occur for intensity and frequency.

Together, these studies suggest that choice blindness can occur in a wide variety of situations and can have serious implications for medical and judicial outcomes. Future research is needed to determine how, in those situations, choice blindness can be avoided.

Questions 27-31

Do the following statements agree with the claims of the writer in the text? In boxes 27-31 on your answer sheet, write:

YES if the statement agrees with the claims of the writer

NO if the statement contradicts the claims of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

27. Doctors make decisions according to the symptoms that a patient describes.
28. Our ability to deal with a lot of input material has improved over time.
29. We tend to know when we have made an error of judgement.
30. A legal trial could be significantly affected by change blindness.
31. Scientists have concluded that we try to take in as much detail as possible from our surroundings.

Questions 32-36

Complete the table below. Choose NO MORE THAN TWO WORDS from the text of each answer. Write your answers in boxes 32-36 on your answer sheet.

Experiments in change blindness

Researchers	Purpose of experiment	Situation for participants	Focus of participants' attention	Percentage unaware of identity change
Simons & Levi, 1998	to illustrate change blindness caused by a **32** ....., such as an object	giving **33** ..... to a stranger	the movement of **34**	46.6%
Davies & Hine, 2007	to assess the impact of change blindness on **35** ..... by eyewitnesses	watching a burglary	the collection of **36**	61%

Questions 37 and 38

Choose TWO letters, A-E. Write your answers in boxes 37-38 on your answer sheet.

Which TWO statements are true for both the supermarket and voice experiments?

A. The researchers focused on non-visual material.

B. The participants were asked to explain their preferences.

C. Some of the choices made by participants were altered.

D. The participants were influenced by each other's choices.

E. Percentage results were surprisingly low.

Questions 39 and 40

Choose TWO letters, A-E. Write your answers in boxes 39-40 on your answer sheet.

Which TWO statements are true for the psychology experiment conducted by Merckelbach, Jelicic, and Pieters?

A. The participants had to select their two most common symptoms.

B. The participants gave each symptom a 1-5 rating.

C. Shyness proved to be the most highly rated symptom.

D. The participants changed their minds about some of their ratings.

E. The researchers focused on the strength and regularity of symptoms.

36. Bài 36

When conversations flow

We spend a large part of our daily life talking with other people and, consequently, we are very accustomed to the art of conversing. But why do we feel comfortable in conversations that have flow, but get nervous and distressed when a conversation is interrupted by unexpected silences? To answer this question we will first look at some of the effects of conversational flow. Then we will explain how flow can serve different social needs.

The positive consequences of conversational flow show some similarities with the effects of 'processing fluency'. Research has shown that processing fluency – the ease with which people process information – influences peoples' judgments across a broad range of social dimensions. For instance, people feel that when something is easily processed, it is more true or accurate. Moreover, they have more confidence in their judgments regarding information that came to them fluently, and they like things that are easy to process more than things that are difficult to process. Research indicates that a speaker is judged to be more knowledgeable when they answer questions instantly; responding with disfluent speech markers such as 'uh' or 'urn or simply remaining silent for a moment too long can destroy that positive image.

One of the social needs addressed by conversational flow is the human need for 'synchrony' – to be 'in sync' or in harmony with one another. Many studies have shown how people attempt to synchronize with their partners, by coordinating their behavior. This interpersonal coordination underlies a wide array of human activities, ranging from more complicated ones like ballroom dancing to simply walking or talking with friends.

In conversations, interpersonal coordination is found when people adjust the duration of their utterances and their speech rate to one another so that they

can enable turn-taking to occur, without talking over each other or experiencing awkward silences. Since people are very welltrained in having conversations, they are often able to take turns within milliseconds, resulting in a conversational flow of smoothly meshed behaviors. A lack of flow is characterized by interruptions, simultaneous speech or mutual silences. Avoiding these features is important for defining and maintaining interpersonal relationships.

The need to belong has been identified as one of the most basic of human motivations and plays a role in many human behaviors. That conversational flow is related to belonging may be most easily illustrated by the consequences of flow disruptions. What happens when the positive experience of flow is disrupted by, for instance, a brief silence? We all know that silences can be pretty awkward, and research shows that even short disruptions in conversational flow can lead to a sharp rise in distress levels. In movies, silences are often used to signal noncompliance or confrontation (Piazza, 2006). Some researchers even argue that 'silencing someone' is one of the most serious forms of exclusion. Group membership is of elementary importance to our wellbeing and because humans are very sensitive to signals of exclusion, a silence is generally taken as a sign of rejection. In this way, a lack of flow in a conversation may signal that our relationship is not as solid as we thought it was.

Another aspect of synchrony is that people often try to validate their opinions to those of others. That is, people like to see others as having similar ideas or worldviews as they have themselves, because this informs people that they are correct and their worldviews are justified. One way in which people can justify their worldviews is by assuming that, as long as their conversations run smoothly, their interaction partners probably agree with them. This idea was tested by researchers using video observations. Participants imagined being

one out of three people in a video clip who had either a fluent conversation or a conversation in which flow was disrupted by a brief silence. Except for the silence, the videos were identical. After watching the video, participants were asked to what extent the people in the video agreed with each other. Participants who watched the fluent conversation rated agreement to be higher than participants watching the conversation that was disrupted by a silence, even though participants were not consciously aware of the disruption. It appears that the subjective feeling of being out of sync informs people of possible disagreements, regardless of the content of the conversation. Because people are generally so well- trained in having smooth conversations, any disruption of this flow indicates that something is wrong, either interpersonally or within the group as a whole. Consequently, people who do not talk very easily may be incorrectly understood as being less agreeable than those who have no difficulty keeping up a conversation. On a societal level, one could even imagine that a lack of conversational flow may hamper the integration of immigrants who have not completely mastered the language of their new country yet. In a similar sense, the ever- increasing number of online conversations may be disrupted by misinterpretations and anxiety that are produced by insuperable delays in the Internet connection. Keeping in mind the effects of conversational flow for feelings of belonging and validation may help one to be prepared to avoid such misunderstandings in future conversations.

Questions 27-32

Do the following statements agree with the claims of the writer in the text? In boxes 27-32 on your answer sheet, write:

YES if the statement agrees with the claims of the writer

NO if the statement contradicts the claims of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

27. Conversation occupies much of our time.
28. People assess information according to how readily they can understand it.
29. A quick response to a question is thought to show a lack of knowledge.
30. Video observations have often been used to assess conversational flow.
31. People who talk less often have clearer ideas than those who talk a lot.
32. Delays in online chat fail to have the same negative effect as disruptions that occur in natural conversation.

Questions 33-40

Complete the summary below. Choose NO MORE THAN TWO WORDS from the text for each answer. Write your answers in boxes 33-40 on your answer sheet.

Synchrony

There is a human desire to co-ordinate (33)… …….in an effort to be 'in harmony'. This co-ordination can be seen in conversations when speakers alter the speed and extent of their speech in order to facilitate (34)… ……. This is often achieved within milliseconds: only tiny pauses take place when a conversation flows; when it doesn't, there are (35)…….. and silences, or people talk at the same time.

Our desire to (36) ……. is also an important element of conversation flow. According to research, our (37) …….. increase even if silences are brief. Humans have a basic need to be part of a group, and they experience a sense

of (38) ……. if silences exclude them. People also attempt to co-ordinate their opinions in conversation. In an experiment, participants' judgement of the overall (39)……. among speakers was tested using videos of a fluent and a slightly disrupted conversation. The results showed that the (40)…….. of the speakers' discussion was less important than the perceived synchrony of the speakers.

37. Bài 37

LEFT OR RIGHT?

An overview of some research into lateralization: the dominance of one side of the body over the other.

A. Creatures across the animal kingdom have a preference for one foot, eye or even antenna. The cause of this trait, called lateralisation, is fairly simple: one side of the brain, which generally controls the opposite side of the body, is more dominant than the other when processing certain tasks. This does, on some occasions, let the animal down, such as when a toad fails to escape from a snake approaching from the right, just because it's right eye is worse at spotting danger than its left. So why would animals evolve a characteristic that seems to endanger them?

B. For many years it was assumed that lateralisation was a uniquely human trait, but this notion rapidly fell apart as researchers started uncovering evidence of lateralisation in all sorts of animals. For example, In the 1970s. Lesley Rogers, now at the University of New England in Australia, was studying memory and learning in chicks. She had been injecting a chemical into chicks' brains to stop them learning how to spot grains of food among distracting pebbles, and was surprised to observe that the chemical only worked when applied to the left hemisphere of the brain. That strongly suggested that the right side of the chicks brain played little or no role in the learning of such behaviours. Similar evidence appeared in songbirds and rats around same time, and since then, researchers have built up an impressive catalogue of animal lateralisation.

C. In some animals, lateralisation is simply a preference for a single paw or foot, while in others it appears in more general patterns of behaviour. The left side of most vertebrate brains, for example, seems to process and control feeding.

Since the left hemisphere processes input from the right side of the body, that means animals as diverse as fish, toads and birds are more likely to attack prey or food items viewed with their right eye. Even humpback whales prefer to use the right side of their jaws to scrape sand eels from the ocean floor.

D. Genetics plays a part in determining lateralisation, but environmental factors have an impact too. Rogers found that a chick's lateralisation depends on whether it is exposed to light before hatching from its egg – if it is kept in the dark during this period, neither hemisphere becomes dominant. In 2004, Rogers used this observation to test the advantages of brain bias in chicks faced with the challenge of multitasking. She hatched chicks with either strong or weak lateralisation, then presented the two groups with food hidden among small pebbles and the threatening shape of a fake predator flying overhead. As predicted, the birds incubated in the light looked for food mainly with their right eye, while using the other to check out the predator The weakly-lateralized chicks, meanwhile, had difficulty performing these two activities simultaneously.

E. Similar results probably hold true for many other animals. In 2006, Angelo Bisazza at the University of Padua set out to observe the differences in feeding behaviour between strongly- lateralized and weakly-lateralized fish. He found that strongly-lateralized individuals were able to feed twice as fast as weakly-lateralized ones when there was a threat of a predator looming above them. Assigning different jobs to different brain halves may be especially advantageous for animals such as birds or fish, whose eyes are placed on the sides of their heads. This enables them to process input from each side separately, with different tasks in mind.

F. And what of those animals who favour a specific side for almost all tasks? In2009,MariaMagat and Culum Brown at Macquarie University in Australia wanted to see if there was general cognitive advantage in lateralisation. To

investigate, they turned to parrots, which can be either strongly right- or left-footed, or ambidextrous (without dominance). The parrots were given the intellectually demanding task of pulling a snack on a string up to their beaks, using a coordinated combination of claws and beak. The results showed that the parrots with the strongest foot preferences worked out the puzzle far more quickly than their ambidextrous peers.

G. A further puzzle is why are there always a few exceptions, like left-handed humans, who are wired differently from the majority of the population? Giorgio Vallortigora and Stefano Ghirlanda of Stockholm University seem to have found the answer via mathematical models. These have shown that a group of fish is likely to survive a shark attack with the fewest casualties if the majority turn together in one direction while a very small proportion of the group escape in the direction that the predator is not expecting.

H. This imbalance of lateralisation within populations may also have advantages for individuals. Whereas most co-operative interactions require participants to react similarly, there are some situations – such as aggressive interactions – where it can benefit an individual to launch an attack from an unexpected quarter. Perhaps this can portly explain the existence of left-handers in human societies. It has been suggested that when it comes to hand-to-hand fighting, left-handers may have the advantage over the right-handed majority. Where survival depends on the element of surprise, it may indeed pay to be different.

QUESTIONS 27-30

Complete each sentence with the correct ending, A-F, below. Write the correct letter, A-F, in boxes 27-30 on your answer sheet.

27. In the 1970s, Lesley Rogers discovered that
28. Angelo Bisazza's experiments revealed that
29. Magat and Brown's studies show that
30. Vallortigara and Ghirlanda's research findings suggest that

A. lateralisation is more common in some species than in others.

B. it benefits a population if some members have a different lateralisation than the majority.

C. lateralisation helps animals do two things at the same time.

D. lateralisation is not confined to human beings.

E. the greater an animal's lateralisation, the better it is at problem-solving.

F. strong lateralisation may sometimes put groups of animals in danger.

QUESTIONS 31-35

Complete the summary below. Choose ONE WORD ONLY from the passage for each answer. Write your answers in boxes 31-35 on your answer sheet.

Lesley Rogers' 2004 Experiment

Lateralisation is determined by both genetic and 31_____ influences. Rogers found that chicks whose eggs are given 32_____ during the incubation period tend to have a stronger lateralisation. Her 2004 experiment set out to prove that these chicks were better at 33_____ than weakly lateralized chicks. As expected, the strongly lateralized birds in the experiment were more able to locate 34 _____ using their right eye while using their left eye to monitor an imitation 35_____ located above them.

QUESTIONS 36-40

Reading Passage 3 has eight paragraphs, A-H.

Which paragraph contains the following information?

Write the correct letter, A-H, in boxes 36-40 on your answer sheet.

NB You may use any letter more than once.

36. description of a study which supports another scientist's findings.
37. the suggestion that a person could gain from having an opposing lateralisation to most of the population.
38. reference to the large amount of knowledge of animal lateralisation that has accumulated.
39. research findings that were among the first to contradict a previous belief.
40. a suggestion that lateralisation would seem to disadvantage animals.