平成26年度　　〔試験時間　60分〕

K 6　英　語

この冊子は，英語の問題で1ページより10ページまであります。

〔注　意〕

(1) 試験開始の指示があるまで，この冊子を開いてはいけません。

(2) 監督者から受験番号等記入の指示があったら，解答用マークシートに受験番号と氏名を記入し，さらに受験番号と志望学科をマークしてください。

(3) 解答は，所定の解答用マークシートにマークしたものだけが採点されます。

(4) 解答用マークシートについて

① 解答用マークシートは，絶対に折り曲げてはいけません。

② マークには黒鉛筆(ＨＢまたはB)を使用してください。指定の黒鉛筆以外でマークした場合，採点できないことがあります。

③ 誤ってマークした場合は，消しゴムで丁寧に消し，消しくずを完全に取り除いたうえ，新たにマークしてください。

④ 解答欄のマークは，横1行について1箇所に限ります。2箇所以上マークすると採点されません。あいまいなマークは無効となるので，はっきりマークしてください。

⑤ 解答用マークシート上部に記載されている解答上の注意事項を，必ず読んでから解答してください。

(5) 試験開始の指示があったら，初めに問題冊子のページ数を確認してください。ページの落丁・乱丁，印刷不鮮明等に気づいた場合は，手を挙げて監督者に知らせてください。

(6) 問題冊子は，試験終了後，持ち帰ってください。

1 Read the passage and answer the questions below. (64 points)

〔1〕 "DON'T be shy!" It's an oft-heard phrase in modern western cultures where go-getters and extroverts appear to have an edge and where raising confident, assertive children sits high on the priority list for many parents. Such attitudes are understandable. Timidity really does hold individuals back. (1) "Shy people start dating later, get married later, and get promoted later," says Bernardo Carducci, director of the Shyness Research Institute at Indiana University Southeast in New Albany. In extreme cases shyness can even be pathological*, resulting in anxiety attacks and social phobia.

〔2〕 In recent years it has emerged that we are not the only creatures to experience shyness. In fact, it is one of the most obvious character traits in the animal world, found in a wide variety of species from sea anemones and spiders to birds and sheep. But it is also becoming clear that in the natural world fortune doesn't always favour the bold. Sometimes the shy, cautious individuals are luckier in love and lifespan. The inescapable conclusion is that there is no one "best" personality — each has benefits in different situations — so evolution favours both. (2)

〔3〕 Should we take a lesson from these findings and re-evaluate what it means to be a shy human? Does shyness have survival value for us, too? Some researchers think so and are starting to find that people who are shy, sensitive and even anxious have some surprising advantages over more go-getting types. Perhaps it is time to ditch (3) our negative attitude to shyness and accept that it is as valuable as extroversion. Carducci certainly thinks so. "Think about what it would be like if everybody was very bold," he says. "What would your daily life be like if everybody you encountered was like Lady Gaga*?"

〔4〕 One of the first steps in the rehabilitation of shyness came in the 1990s, from work on salamanders. An interest in optimality — the idea that

animals are as efficient as possible in their quest for food, mates and resources — led Andrew Sih at the University of California, Davis, to study the behaviour of sunfish and their prey*, larval* salamanders. In his experiments, he couldn't help noticing differences between individual salamanders. Some were bolder and more active than others. They ate more and grew faster than their shyer counterparts, but there was a downside. When sunfish were around, the bold salamanders were just "blundering out there (4) and not actually doing the sort of smart anti-predator behaviour that simple optimality theory predicted they would do," says Sih. As a result, they were more likely to be gobbled up than their shy counterparts.

〔5〕 Until then, the idea that animals have personalities — consistent differences in behaviour between individuals — was considered controversial. Sih's research forced a rethink. It also spurred further studies, to the extent that today the so-called "shy-bold continuum" has been identified in more than 100 species. In each of these, individuals range from highly "reactive" to highly "proactive": reactive types being shy, timid, risk-averse (5) and slow to explore novel environments, whereas proactive types are bold, aggressive, exploratory and risk-prone.

〔6〕 Why would these two personality types exist in nature? Sih's study holds the key. Bold salamander larvas may risk being eaten, but their fast (6) growth is a distinct advantage in the small streams they normally inhabit, which may dry up before more cautious individuals can reach maturity. In other words, each personality has advantages and disadvantages depending on the circumstances. Since natural environments are complex and constantly changing, natural selection may favour first one and then the other or even both simultaneously.

〔7〕 The idea is illustrated even more convincingly by studies of a small European bird, the great tit. The research, led by John Quinn at University

College Cork in Ireland, involved capturing wild birds and putting each separately into a novel environment to assess how proactive or reactive it was. Some (7) hunkered down in the fake tree provided and stayed there for the entire 8-minute trial; others immediately began exploring every part of the experimental room. The birds were then released back into the wild, to carry on with the business of surviving and breeding. "If you catch those same individuals a year later, they tend to do more or less the same thing," says Quinn. In other words, exploration is a consistent personality trait. What's more, by continuously monitoring the birds, a team led by Niels Dingemanse at the Max Planck Institute for Ornithology in Germany, observed that in certain years the environment favours bold individuals — more survive and they produce more young than other birds — whereas in other years the shy types do best.

〔8〕 A great tit's propensity to explore is usually similar to that of its parents and a genetic component of risk-taking behaviour has been found in this and other species. Even so, nurture seems to play a part in forming animal personalities, too. Quinn's team has also identified correlations between exploring and key survival behaviours: the more a bird likes to explore, the more willing it is to disperse, take risks and act aggressively. In contrast, (8) (1 at 2 better 3 exploratory 4 individuals 5 less 6 were) solving problems to find food.

(Adapted from "Survival of the Shyest: Timidity's Surprising Benefits")

(**Notes**)

pathological : involving a physical or mental disease

Lady Gaga : American singer known for her unique, controversial sense of fashion and performance

prey : an animal that is hunted or killed by another for food

larval < **larva** : the active immature form of an insect, especially one that differs greatly from the adult

(1) Which of the items below is the closest in meaning to the underlined part (1) in the passage? Choose one from the choices and mark the number on your **answer sheet**.

1 change people's personality
2 delay one's progress
3 support one's friendship
4 prevent violence between people

(2) The following part of a sentence expresses the meaning of the underlined part (2) in the passage. Which of the items below correctly fill in the blanks? Choose one for each blank from the choices and mark the number on your **answer sheet**.

that is why neither the bold nor the ((a)) have been ((b)) through natural selection

(a)

1 best
2 lucky
3 obvious
4 shy

(b)

1 appreciated
2 eliminated
3 improved
4 related

(3) Which of the items below is the closest in meaning to the underlined part (3) in the passage? Choose one from the choices and mark the number on your **answer sheet.**

1 build up
2 go along with
3 point out
4 say good-bye to

(4) Which of the items below is the closest in meaning to the underlined part (4) in the passage? Choose one from the choices and mark the number on your **answer sheet.**

1 bravely chasing off the sunfish
2 cleverly hiding from the sunfish
3 moving carelessly despite the sunfish
4 swimming quickly away from the sunfish

(5) The following sentence expresses the meaning of the underlined part (5) in the passage. Which of the items below correctly fills in the blank? Choose one from the choices and mark the number on your **answer sheet.**

If you say that you are averse to something, you mean that you do not ( ) it.

1 ignore
2 judge
3 like
4 regret

(6) The following part of a sentence is close in meaning to the underlined part (6) in the passage. Which of the items below correctly fills in the blank? Choose one from the choices and mark the number on your **answer sheet.**

bolder and more active salamander young do better than the shy in environments where resources, such as food and water,.are ( ).

1 delicious
2 limited
3 optimal
4 sufficient

(7) Put the words in the brackets below into the correct order so that the following part of a sentence expresses the meaning of the underlined part (7) in the passage. Mark the numbers correctly, from top to bottom, on your **answer sheet**.

avoided doing things that (1 make 2 noticeable 3 or 4 put 5 them 6 would) them in danger

(8) Put the words in brackets (8) in the passage into the correct order. Mark the numbers correctly, from top to bottom, on your **answer sheet**.

(9) The following sentences restate some of the points of the specified paragraphs. Which of the items below correctly fills in each blank? Choose one from the choices and mark the number on your **answer sheet**.

[Paragraph 1]

Many parents in western cultures find it ((a)) to bring up confident and assertive children. They believe that individuals with these personalities ((b)).

(a)

1 boring 2 easy

3 difficult 4 important

(b)

1 are nervous 2 are rare

3 have a limit 4 have an advantage

[Paragraph 2]

In the past, shyness was generally considered ((c)).

1 a characteristic unique to human beings

2 an obvious characteristic of animals

3 to have a wide-range of effects on animals

4 to have positive effects on human beings

[Paragraph 3]

The author invites the reader to imagine a world ((d)) extroverts and the ((e)) it might have.

(d)

1 friendly to
2 full of
3 unkind to
4 without

(e)

1 benefits
2 fun
3 memory
4 problems

[Paragraph 4]

Andrew Sih's research on the behaviour of larval salamanders shows how boldness could be as ((f)) as shyness for their survival. Boldness could endanger them when ((g)) are around.

(f)

1 bad
2 good
3 important
4 unimportant

(g)

1 salamanders
2 sunfish
3 their even bolder counterparts
4 their shy counterparts

[Paragraph 6]

The author argues that the diversity of personality types ((h)) the complex and changing nature of the natural world.

1 arises from
2 is threatened by
3 is unrelated to
4 results in

[Paragraph 7]

John Quinn's study illustrated the personality traits of great tits by showing how their behaviour in a new, experimental environment was generally ((i)) their behaviour in the natural world a year later.

1 bolder than
2 consistent with
3 contrary to
4 more efficient than

[Paragraph 8]

A great tit's tendency to explore is usually similar to that of its parents although ((j)).

1 it may decrease a little after it reaches maturity unlike individuals of other species
2 it may not be so obvious to an observer uninformed about the behavioural traits of the species
3 it seems also influenced by the wider environment within which it was brought up
4 it seems likely to explore more in the familiar environment it inhabits

2 Read the passage and answer the questions below. (36 points)

Living and working in zero gravity plays havoc on all parts of your body, including your muscular, skeletal and balance systems. On top of that, NASA has identified 442 medical conditions ((a)) during long-term missions.

One of the most common — and unpleasant — effects of microgravity is space motion sickness, caused when the brain and inner ear receive mixed signals. Between 40 to 50% of astronauts experience this. On Earth, we can tell which way is up and which way is down because ((b)). Sensors in the inner ear feel this gravitational pull and send information to the brain about our body's orientation. In space there is no gravitational force telling the inner ear which way is "up" and "down". So while our eyes can certainly see a ceiling and floor in the spacecraft, ((c)). This causes nausea and dizziness. Some astronauts experience headaches and vertigo. Fortunately, symptoms subside within the first few days of travel and common motion sickness medicine is just as effective in space.

Two thirds of ((d)) fluids. On Earth, gravity pulls most of this towards our legs. In zero gravity, fluids naturally travel upwards into our face and head, causing them to look swollen. This gives astronauts "puffy face syndrome". The extra fluid in the head may lead to blocked noses but once ((e)), they return to their normal appearance. This fluid shift can result in the loss of about a litre of fluid in each leg, creating what some call "Bird Legs".

In zero gravity, muscles do not have to do as much to move around. If ((f)) to counter this, they will face severe muscle loss. It's exactly the same as lying in bed for months on end — if you tried to get up and move around afterwards, you'd find that your legs were very weak. The same applies to bones. Bones demineralise, losing calcium and strength in space. Astronauts risk losing 2% of their bone mass for ((g) 1 every 2 gravity

3 in 4 month 5 spent 6 zero). To reduce muscle and bone loss, astronauts have to exercise for two or more hours every day. It's not just a matter of running on a treadmill or doing some sit ups — odd looking equipment has been designed to make exercising in zero gravity effective.

The (h) (1 astronauts 2 don't 3 end 4 once 5 problems 6 return) home. In fact, most astronauts have more trouble re-adapting to Earth's gravity than adapting to microgravity in orbit. Their muscles and bones have weakened, making it difficult to walk. The heart has to recondition itself to pump blood harder to overcome gravity. In April 2004, astronauts on the Russian *Soyuz* mission had (i) (1 be 2 helped 3 of 4 out 5 the spacecraft 6 to) by Russian space rescue service staff and carried away into waiting helicopters after landing. Astronauts Michael Foale and Alexander Kalery had been in orbit for six months.

Space travel is certainly an adventure, but not an easy one.

(1) Which of the items below correctly fill in the blanks ((a)) to ((f)) in the passage? Choose one for each blank from the choices and mark the number on your answer sheet.

1 astronauts are back on Earth
2 astronauts don't work hard
3 gravity tells us so
4 our bodies are made up of
5 our brains cannot register this
6 that could require emergency attention

(2) Put the words in brackets ((g)) to ((i)) in the passage into the correct order. Mark the numbers correctly, from top to bottom, on your **answer sheet.**