

平成 25 年度入学者選抜学力検査問題

英 語

注 意 事 項

1. この冊子は、監督者から解答を始めるよう合図があるまで開いてはいけません。
2. 解答は解答用紙に書きなさい。解答用紙は 3 枚です。監督者から指示があったら、3 枚とも、解答用紙の上部の所定欄に受験番号と座席番号を、また、下部の所定欄には座席番号をそれぞれ必ず記入しなさい。
3. この冊子は全部で 11 頁からなります。落丁、乱丁または印刷の不備なものがあつたら申し出てください。
4. 解答用紙は、記入の有無にかかわらず、持ち帰ってはいけません。
5. この冊子は持ち帰ってかまいません。

I 次の英文を読み、問1から問8の設問に答えなさい。*が付いている表現には、本文の下に注がある。

British scientist Stephen Hawking has decoded* some of the most puzzling mysteries of the universe but he has left one mystery unsolved: How he has managed to survive so long with such a crippling* disease.

The physicist and cosmologist was diagnosed* with Lou Gehrig's disease* when he was a 21-year-old student at Cambridge University. Most people die within a few years of a diagnosis of what is also called motor neurone disease or amyotrophic lateral sclerosis* (ALS). On January 8, 2012, Hawking turned 70.

"I don't know of anyone who's survived this long," said Ammar Al-Chalabi, director of the Motor Neurone Disease Care and Research Center at King's College London. He does not treat Hawking and described his longevity as (1) "extraordinary."

"It is unusual for patients to survive for decades but not unheard of," said Dr. Rup Tandan, a neurology professor at the University of Vermont College of Medicine. Still, Tandan said many longtime survivors had ventilators* to breathe for them — which Hawking does not.

Hawking first gained attention with his 1988 book, *A Brief History of Time*, a simplified overview of the universe. It sold more than 10 million copies worldwide. His subsequent theories have revolutionized modern understanding of concepts like black holes and the big-bang theory of how the universe began.

To mark his birthday, Cambridge University held a public symposium on "The State of the Universe," featuring talks from 27 leading scientists, although Hawking was absent, having been discharged from hospital two days earlier after being unwell.

In a pre-recorded message, the physicist urged participants to focus on his glittering career, rather than his struggles against illness.

“We must also continue to go into space for the future of humanity,” he said. “I don’t think we will survive another thousand years without escaping beyond our fragile planet.”

For 30 years, he held a mathematics post at the university previously occupied by Sir Isaac Newton. Hawking retired from that position in 2009 and is now research director at the university’s Center for Theoretical Cosmology.

Hawking achieved all that despite being nearly entirely paralyzed and in a wheelchair since 1970. He now communicates only by twitching* his right cheek. Since catching pneumonia* in 1985, Hawking has needed constant care, and relies on a computer and voice synthesizer to speak.

A tiny infrared* sensor sits on his glasses, hooked up to a computer. The sensor detects Hawking’s cheek pulses, which select words displayed on a computer screen. The chosen words are then spoken by the voice synthesizer. It can take up to 10 minutes for Hawking to formulate a single sentence.

“The only trouble is that the voice synthesizer gives me an American accent,” the Briton wrote.

(2)

It took Hawking four years to write his last book, *The Grand Design*.

His personal assistant, Judith Croasdell, said: “The way he communicates can seem frustratingly slow to most people, but he doesn’t let that impede* his thinking.”

(3)

Hawking’s rooftop university office is crammed full of memorabilia*: family photos, a miniature NASA shuttle, and a signed picture of himself with U.S. President Barack Obama and his wife, Michelle. On top of physics books sits a disability access guide for the university.

Hawking’s fame has led to guest appearances on some of his favorite television shows, including *The Simpsons* and *Star Trek*. His animated likeness from *The Simpsons* has even been turned into an action figure, one of which sits proudly on his office desk.

“He’s a big ham*, he loves the spotlight,” said Kitty Ferguson, who’s written two biographies of the physicist.

She said he has a good sense of humor and has programmed his computer to respond to random encounters with people who ask if he’s Stephen Hawking. “No, but I’m often mistaken for that man,” his voice synthesizer deadpans*.

Lou Gehrig’s disease attacks cells that control the muscles. For some reason, the disease has progressed less rapidly in Hawking than in most. Al-Chalabi and colleagues are analyzing a DNA sample from Hawking, along with those of other patients, to see if there is anything rare about his disease or any genetic mutations that could explain his long survival.

Some experts said the type of care Hawking has — about a dozen health workers, 24 hours a day — may have extended his life expectancy.

“The disease can sometimes stabilize and then the kind of care delivered may be a factor in survival,” said Virginia Lee, a brain disease expert at the University of Pennsylvania School of Medicine. “Remaining mentally alert is also extremely important.”

Hawking says he tries not to think about his limitations.

“I have had Lou Gehrig’s disease for practically all my adult life,” he says on his Web site. “Yet it has not prevented me from having a very attractive family and being successful in my work,” he writes. “(私はできるだけ普通の生活を送るようにしている) and not think about my condition or regret the things it prevents me from doing, which are not that many.”

Hawking has also been married twice, and has three children and three grandchildren. With his daughter Lucy, he has written several children’s books on physics.

Al-Chalabi said most patients with Lou Gehrig’s disease succumb* after their breathing muscles stop working. He had no predictions for what the biggest health risks to Hawking’s future might be.

“He is truly remarkable,” Al-Chalabi said. “This is someone who’s managed to find ways around every single problem the disease has thrown at him.”

出典 M. Chengap, “‘Remarkable’ Hawking turns 70, defying disease,” *The Japan Times Weekly* (January 14, 2012) より一部改変

(注)

decoded < decode 解読する

crippling 体を不自由にさせる

diagnosed < diagnose 診断する

Lou Gehrig’s disease ルー・ゲーリッグ病(筋萎縮性側索硬化症, Lou Gehrig
がこの病気で亡くなったことからこう呼ばれる)

amyotrophic lateral sclerosis 筋萎縮性側索硬化症

ventilators < ventilator 人工呼吸器

twitching < twitch ぴくぴく動かす

pneumonia 肺炎

infrared 赤外線の

impede 妨げる

memorabilia 思い出の品

ham 役者

deadpan < deadpan さりげない態度で言う

succumb 死ぬ

問 1 下線部(1)は、どういう点が“extraordinary”なのか日本語で説明しなさい。

問 2 下線部(2)の the Briton とは誰のことか。具体的な名前を英語で書きなさい。

問 3 下線部(3)の that が示す内容を日本語で答えなさい。

問 4 下線部(4)を日本語に訳しなさい。

問 5 下線部(5)の those は具体的に何のことか。英語で答えなさい。

問 6 it の指すものを明らかにした上で、下線部(6)を日本語に訳しなさい。

問 7 下線部(7)が、「私はできるだけ普通の生活を送るようにしている」という意味になるように、次の単語を並べ替えて正しい英文にしなさい。

a as as I lead life normal possible to try

問 8 下線部(8)を日本語に訳しなさい。

II 次の英文を読み、問1から問8の設問に答えなさい。*が付いている表現には、本文の下に注がある。

The science writer Jonah Lehrer sometimes reminds his readers of Karl Popper's distinctions (1) clocks and clouds. Clocks are neat, orderly systems that can be defined and evaluated using reductive methodologies. You can take apart a clock, measure the pieces, and see how they fit together. Clouds are irregular, dynamic, and idiosyncratic*. It's hard to study a cloud because they change from second to second. They can best be described through narrative, not numbers.

As Lehrer has noted, one of the great temptations of modern research is that it tries to pretend that every phenomenon is a clock, which can be (2) evaluated using mechanical tools and regular techniques. This is surely true of the study of intelligence. Researchers have spent a great deal of time studying IQ, which is relatively stable and quantifiable, and relatively little time studying mental character, which is cloudlike.

Raw intelligence is useful for helping you solve well-defined problems. Mental character helps you figure out what kind of problem you have in front of you and what sort of rules you should use (3) to address it. As Keith E. Stanovich notes, if you give people the rules they need to follow in order to solve a thinking problem, then people with higher IQs do better than people with low IQs. But if you don't give them the rules, people with high IQs do no better, because coming up with the rules to solve a problem and honestly evaluating one's performance afterward are mental activities barely related to IQ.

Mental force and mental character are only lightly correlated*. As Stanovich puts it, "Many different studies involving thousands of subjects have

indicated that measures of intelligence display only moderate to weak correlations with some thinking dispositions* (for example, actively open-minded thinking, need for cognition*) and near zero correlation with others (such as conscientiousness*, curiosity, diligence*.)”

Many investors, for example, are quite intelligent, but behave self-destructively because of their excessive faith in their intelligence. Between 1998 and 2001, the Firsthand Technology Value mutual fund* produced an annualized* total return of 16 percent. The average individual investor in this fund, however, lost 31.6 percent of his or her money over this time. Why? Because the geniuses thought they could get in and out of the market at the right moments. They missed the important up days and caught the devastating* down ones. These people, who are quite smart, performed worse⁽⁴⁾ than if they had been stupid.

Other people score well on IQ tests but can't hold down a job. James J. Heckman of the University of Chicago and others compared the workplace performance of high-school graduates with those who dropped out of high school but took the GED* exams. The GED recipients are as smart as high-school grads* who do not go on to college, but they earn less than these high-school grads. In fact, they have lower hourly wages than do high-school dropouts, because they possess fewer of the so-called noncognitive traits* like motivation and self-discipline. GED recipients are much more likely to switch jobs. Their labor-force participation rates are lower than those of high-school grads.

At the very top of intellectual accomplishment, intelligence is nearly (5) in separating outstanding geniuses from everybody else. The greatest thinkers seem to possess mental abilities that go beyond rational thinking narrowly defined. Their abilities are fluid and thoroughly cloudlike.

Albert Einstein, for example, would seem to be an exemplar of scientific or mathematical intelligence. But he addressed problems by playing with imaginative, visual, and physical sensations. “The words of the language, as they are written or spoken, do not seem to play any role in my mechanism of thought,” he told Jacques Hadamard. Instead, he said that his intuitions* proceed through “certain signs and more or less clear images” that he could manipulate and combine. “The above mentioned elements are, in my case, of visual and some of muscular type,” Einstein observed.

“I can only think in pictures,” the physicist and chemist Peter Debye declared. “It’s all visual.” He said that when working on a problem he saw fuzzy images, which he tried to progressively clarify in his mind and then eventually, after the problem was largely solved, he would clarify the pictures in the form of (6). Others proceed acoustically, rehearsing certain sounds associated with certain ideas. Others do so emotionally: “You had to use your feelings,” Debye explained, “What does the carbon atom *want* to do?”

Wisdom doesn’t consist of knowing specific facts or possessing knowledge
(7) of a field. It consists of knowing how to treat knowledge: being confident but not too confident; adventurous but grounded. It is a willingness to confront counterevidence and to have a feel for the vast spaces beyond what’s known.

出典 D. Brooks, *The Social Animal* (New York: Random House Trade Paperback, 2011), pp. 166–169 より一部改変

(注)

idiosyncratic 独特な

correlated 相互に関連のある

dispositions < disposition 気質

cognition 知的な活動

conscientiousness 誠実

diligence 勤勉

mutual fund 投資信託

annualized 年率に換算した

devastating 壊滅的な

GED General Educational Development の略。高等学校を修了した者と同
等以上の学力を有することを証明するための米国における試験

grads < graduates の略

traits < trait 特性

intuitions < intuition 直観

問 1 に入る最も適切な前置詞を書きなさい。

問 2 下線部(2)を、it がわかるように日本語に訳しなさい。

問 3 下線部(3)にある it は何をさすか日本語で答えなさい。

問 4 下線部(4)を日本語に訳しなさい。

問 5 に入る最も適切な単語を次から選び、記号で答えなさい。

(a) meaningful (b) sufficient (c) inevitable

(d) useless (e) doubtless

問 6 (6) に入る最も適切な単語を次から選び、記号で答えなさい。

- (a) images (b) colors (c) mathematics
(d) sounds (e) knowledge

問 7 下線部(7)を訳しなさい。

問 8 次の英文は本文の一部を要約したものである。①～⑥に入る最も適切な単語を下の a)～l)から選び解答欄に記号を書きなさい。囲みの中の単語は1回しか使わないこと。

According to Karl Popper, clocks and clouds can be distinguished as follows: Clocks are orderly systems that are easy to understand whereas clouds are more (①) because they change very (②). We cannot easily describe clouds (③). Some researchers (④) that intelligence is like a clock and easy to (⑤). Although this may be true of IQ, mental character is quite a different matter. Raw intelligence is useful for solving well-defined problems, but mental character helps people to come up with the rules for solving problems independently. Mental force and mental character are quite different. There is only a slight (⑥) between them.

a) artificially	b) claim	c) complicated
d) compose	e) connection	f) desperate
g) difference	h) mathematically	i) measure
j) prove	k) quickly	l) reference

III 下線部分の日本語を英語に直しなさい。*が付いている表現には、本文の下に注がある。

Kumiko was a Japanese woman who made a plan to visit Turkey but wasn't sure exactly where it was. One summer, she decided to go there by train after visiting London first.

In London, Kumiko asked in broken English how to get from London to Turkey. Because of the way she pronounced it, (人々は彼女がどこに行きたいのかを誤解した)⁽¹⁾ and put her on a train to Torquay, which is a small town by the sea in southwest England. (彼女は自分が誤りを犯したとは思っていなかった)⁽²⁾ because when she asked the other passengers, "Does this train go to Turkey?" they always said "Yes."

When Kumiko arrived at her destination, she was very surprised to find that there were no bazaars or minarets*. Instead she could only see (彼女がロンドンで見たような店や教会を)⁽³⁾. However, Kumiko still believed that she had reached the correct destination. Finally, (彼女は、自分が実際はどこにいるのかしらと思いはじめた)⁽⁴⁾. After she had been walking around Torquay for a while, she asked a policeman and was very surprised by his reply. He told her that she was not in Turkey, but was still in England.

The next day she took a plane to her true destination and had a good time. Now she is back in Japan, and (彼女は以前よりさらに一生懸命に英語の発音を練習している)⁽⁵⁾.

注

minarets < minaret イスラム教寺院の高い塔