2017年度

N 英 語 問 題

注 意

1．試験開始の指示があるまでこの問題冊子を開いてはいけません。
2．解答用紙はすべて**ＨＢの黒鉛筆またはＨＢの黒のシャープペンシル**で記入することになっています。ＨＢの黒鉛筆・消しゴムを忘れた人は監督に申し出てください。（万年筆・ボールペン・サインペンなどを使用してはいけません。）
3．この問題冊子は**16ページ**までとなっています。試験開始後，ただちにページ数を確認してください。なお，問題番号はⅠ～Ⅵとなっています。
4．解答用紙にはすでに受験番号が記入されていますので，出席票の受験番号が，あなたの受験票の番号であるかどうかを確認し，出席票の氏名欄に**氏名**のみを記入してください。なお，出席票は切り離さないでください。
5．解答は解答用紙の指定された解答欄に記入し，その他の部分には何も書いてはいけません。
6．解答用紙を折り曲げたり，破ったり，傷つけたりしないように注意してください。
7．この問題冊子は持ち帰ってください。

マーク・センス法についての注意

マーク・センス法とは，鉛筆でマークした部分を機械が直接よみとって採点する方法です。

1．マークは，下記の記入例のようにＨＢの黒鉛筆で枠の中をぬり残さず濃くぬりつぶしてください。
2．１つのマーク欄には１つしかマークしてはいけません。
3．訂正する場合は消しゴムでよく消し，消しくずはきれいに取り除いてください。

マーク記入例：

A	1	2	3	4	5
	○	○	●	○	○

（３と解答する場合）

I 。次の文を読み，下記の１～９それぞれに続くものとして，本文の内容ともっともよく合致するものを，各イ～ニから１つずつ選び，その記号を解答用紙の所定欄にマークせよ。

When Adrian Black met his Italian partner 10 years ago, he was determined to learn her home language. Having successively picked up French a decade earlier when he lived in France, he felt the challenge was attainable.

"I was blown away by how hard it was to learn French, but I came back speaking it pretty well," says Black, who is now 50. But getting to grips with Italian has been a much tougher process, he explains: "I feel like French is deep down in my head somewhere, but with Italian it will take a lot more effort for me to get to that level. I've noticed that my brain isn't as good as it was, and I'm pretty sure I don't retain stuff as well as I used to. It just doesn't all click as easily as it used to."

It's often said that you can't teach an old dog new tricks. Actually this proverb is, for the most part, not true. For much of the history of modern neuroscience, the adult brain was believed to be a fixed structure that, once damaged, could not be repaired. But research published since the 1960s has challenged this assumption, showing that it is a highly dynamic structure, which changes itself in response to new experiences, and adapts to injuries—a phenomenon referred to as neuroplasticity.

Collectively, this body of research suggests that one can never be too old to learn something new, but that the older they are, the harder it is for them to do so. This is because neuroplasticity generally decreases as a person gets older, meaning the brain becomes less able to change itself in response to experiences.

Some aspects of language learning become progressively more difficult with age, others may get easier. "Older people have larger vocabularies than younger ones, so the chances are their second language vocabulary may be as large as a native," says Albert Costa, a professor of neuroscience who studies bilingualism at the Universitat Pompeu Fabra in Barcelona. Picking up a new language's vocabulary is much easier for adults than learning the rules that govern its grammar. This is because new words can be easily mapped on to a learner's pre-existing knowledge. But older learners are less likely to have good pronunciation or accent,

since the sounds of a language are picked up naturally by children.

Learning a new language may not always be easy for adults, but there is research to suggest that doing so is beneficial for brain health. As we get older, most of us experience an age-related decline in mental functions such as attention and memory, and in some people the acceleration of this process leads to the development of Alzheimer's disease or some other form of dementia. A number of recent studies suggest that learning a foreign language can slow this inevitable age-related cognitive decline or perhaps even delay the onset of dementia.

In the largest study of its kind to date, researchers at Edinburgh University examined the medical records of 648 Alzheimer's patients in the Indian city of Hyderabad. They found that the bilinguals developed dementia later than monolinguals, by an average of four-and-a-half years.

"Learning a language later on in life might be more beneficial than learning it earlier, because it takes more effort," says lead researcher, Thomas Bak. "It has parallels with physical exercise—taking a walk is good for your health, but not as beneficial as going for a run."

Learning and using a foreign language seems to improve what psychologists and neuroscientists call executive function, which refers to a hypothetical set of mental processes that enable us to vary our thoughts and behaviors from one moment to the next, depending on the task at hand.

"Using two languages seems to have consequences not only for executive functions, but also for other processes," says Costa. "It's like learning to juggle, the idea being that you have to juggle two balls every time you speak. Some of the work is controversial, so we need more data to have a definite answer."

Despite the difficulties, Black regards learning foreign languages as fun, and treats the endeavour like a puzzle that has to be solved. "I'm doing it partly to keep my brain active," he says. "When you have some success and can express yourself, it feels like you're using different parts of your brain that you weren't using before."

Indeed, research shows that bilingual children use the same brain regions for both languages if they are learned during childhood, whereas learning a second language later on in life recruits different regions from those involved in using one's mother tongue. And learning a foreign language, much like learning to play a

musical instrument, does indeed appear to be a good way of exercising one's brain, and keeping it healthy, throughout life.

1. The author gives the example of Adrian Black to illustrate
   イ. the benefits of learning two or more foreign languages.
   ロ. the common view that learning gets harder with age.
   ハ. the difficulty of learning two or more foreign languages.
   ニ. the importance of having a goal and striving to achieve it.

2. The underlined word "click" (paragraph 2) is closest in meaning to
   イ. become clear.
   ロ. break down.
   ハ. come up.
   ニ. sound true.

3. The main purpose of paragraph 3 is
   イ. to state the goals of modern neuroscience.
   ロ. to explain changing scientific views of the human brain.
   ハ. to question the idea that the human brain is flexible.
   ニ. to show how science supports the wisdom of proverbs.

4. The underlined word "chances" (paragraph 5) is closest in meaning to
   イ. challenges.
   ロ. hopes.
   ハ. opportunities.
   ニ. probabilities.

5. The passage suggests that, compared to older people, children have more difficulty learning the vocabulary of a foreign language because they

イ. focus on the pronunciation rather than the meaning of new words.

ロ. lack the study skills needed for learning new words.

ハ. don't need a big vocabulary in their day-to-day lives.

ニ. lack knowledge of similar words in their own language.

6. In their study, researchers at Edinburgh University

イ. examined the records of Alzheimer's patients and healthy patients.

ロ. observed monolingual and bilingual Alzheimer's patients for six years.

ハ. examined the records of monolingual and bilingual Alzheimer's patients.

ニ. observed the effects of learning a foreign language on Alzheimer's patients.

7. The author uses the example of "learning to juggle" (paragraph 10) to suggest that, for a bilingual person, the act of speaking

イ. involves more executive functions than it does for a monolingual person.

ロ. is less likely to continue for a long time than it is for a monolingual person.

ハ. leads to more personal satisfaction than it does for a monolingual person.

ニ. is less demanding of mental abilities than it is for a monolingual person.

8. Compared to learning a second language in childhood, learning a second language later on in life has all the following characteristics EXCEPT that it

イ. has more health benefits.

ロ. takes more mental effort.

ハ. leads to a decrease in neuroplasticity.

ニ. involves a different region of the brain.

9. The most appropriate title for this passage is

イ. The Brain Processes of Bilingual People.

ロ. How to Master a Foreign Language in Adulthood.

ハ. Recent Research on Learning and Neuroplasticity.

ニ. The Benefits of Foreign Language Learning in Adulthood.

II．次の文を読み，下記の１～９それぞれに続くものとして，本文の内容ともっともよく合致するものを，各イ～ニから１つずつ選び，その記号を解答用紙の所定欄にマークせよ。

Car enthusiasts, after hearing industry executives discussing the self-driving technology being built into their vehicles, might be forgiven for thinking robotic cars will soon drive themselves out of auto showrooms. Carlos Ghosn, the chairman and chief executive of the Renault-Nissan Alliance, announced during a news media event on January 7 at the company's research laboratory in Silicon Valley that Nissan would introduce 10 new autonomous vehicles in the next four years.

Elon Musk, the chief executive of Tesla in a conference call with reporters last week, asserted that the so-called Autopilot feature in the latest Tesla model introduced last fall was "probably better than a person right now." Musk also said that within a year or two, it would be technically feasible to have a driverless Tesla arrive from the opposite side of the country.

But there is a growing gap between what these executives are saying and what most people think of when they hear executives or scientists describing autonomous or driverless cars. What Musk and Ghosn are envisioning is cars with advanced capabilities that can help drive or even take over in tricky situations like parallel parking on a busy street. "Truly autonomous cars that do all the work, like the bubble-shaped vehicles Google has been testing near its Silicon Valley campus, are still at least a decade away from transporting people around town," said Xavier Mosquet, a senior partner at the Boston Consulting Group and managing director of the firm's Detroit office. "This is going to be a journey, and a reasonably long one," he said.

It is increasingly a journey with significant financial implications. Last year the company Uber announced plans to open an autonomous vehicle research center near Carnegie Mellon University. General Motors recently invested $500 million in Uber's top competitor, Lyft. And rumors continue that Google and Ford are entering into a partnership to build autonomous cars. The White House also joined the discussion. The proposed budget for the 2017 fiscal year included $4 billion to be spent over 10 years for related research.

Cars are beginning to drive on their own in certain situations, and in the

coming years they will do increasingly more under computer control. They will follow curving roads, change lanes, pass through intersections and stop and start. But they will require human supervision. Significantly, on many occasions, the cars will in effect still tell their human drivers, "here, you take the wheel," when they encounter complex driving situations or emergencies.

In the automotive industry this is referred to as the hand-off problem, and automotive engineers acknowledge that there is no easy solution. Automotive designers have not yet found a way to make a driver who may be distracted by texting, reading email, or watching a movie retake control of the car in the fraction of a second that is required in an emergency. The danger is that by allowing human drivers to pay even less attention to driving, the safety technology may be creating new hazards.

"The whole issue of interacting with people inside and outside the car exposes real issues in artificial intelligence," said John Leonard, a professor of mechanical engineering at the Massachusetts Institute of Technology. "The ability to know if the driver is ready, and is being given enough notice to hand off, is a really tricky question."

The limitations of Autopilot, which Tesla describes as offering the ability to "automatically steer down the highway, change lanes and adjust speed in response to traffic," were clearly visible in a recent test drive with Sebastian Thrun, a roboticist and artificial intelligence expert who led the Stanford University team that won the Pentagon's autonomous vehicle Grand Challenge in 2005 and later founded Google's self-driving effort.

Although Thrun left Google several years ago, he is still involved in the field of artificial intelligence. He describes himself as an enthusiastic Tesla owner. On a recent test drive, he cataloged a series of the car's limitations and errors, including those he described as "critical interventions" in which the driver is required to override the car's behavior.

The Tesla Autopilot system permits drivers to remove their hands from the wheel, but it prompts them to regain control after a brief period. It will also warn a driver to retake control in certain situations. The Tesla performed well in freeway driving, and the company recently fixed a bug that had caused the car to

unexpectedly veer off onto freeway exits. However, on city streets and country roads, Autopilot's performance could be described as hair-raising. The car, which uses only a camera to track the roadway by identifying lane markers, did not follow the curves smoothly. It also did not slow down when approaching turns.

On a recent 220-mile drive to Lake Tahoe from Palo Alto, California, Thrun said he was forced to intervene more than a dozen times. The company said that on January 9 it introduced a new version of the Autopilot software that offered both restrictions and improvements in handling. Like the Tesla, the new autonomous Nissan models will still require human oversight and will not drive autonomously in all conditions. Nissan's engineers acknowledged that even their most advanced models would not be autonomous in every situation, including snow, heavy rain and even some kinds of nighttime driving.

"There are certain limitations depending on the condition of the weather. For example, if you are in heavy snow or rain, it is impossible to have autonomous driving," said Tsuyoshi Yamaguchi, Renault-Nissan's executive vice president for technology development. "We should make sure the vehicle recognizes it and gives a caution to the driver."

The situation is further complicated by laws and regulations that require cars to be controlled by humans. In Europe, the 1968 Vienna Convention required that "every moving vehicle or combination of vehicles shall have a driver," and "every driver shall at all times be able to control his vehicle." Although an amendment has been proposed, no new legislation is yet in place.

In the United States, Google began an extensive campaign with individual states in 2011 to block potential legislation. But the company acknowledged a setback this year when the California Department of Motor Vehicles issued draft regulations that required a human driver capable of controlling the car to be in the vehicle. None of that has discouraged some enthusiastic Tesla owners. Doug Carmean, a Microsoft computer designer who commutes daily between Seattle and Redmond, Washington, said he had encountered problems with the Tesla Autopilot program that he found "scary."

Yet as much as 45 minutes of his commute each day is in slow, stop-and-go traffic, and his car will effortlessly and predictably follow the car ahead, permitting

him to surf the web on the Tesla's giant display. "Even though it has these frightening movements, I've come to enjoy it," he said. "It's a sense of wonder and pleasure."

1. The author introduces Carlos Ghosn and Elon Musk to show that car industry executives
   イ. are optimistic about the potential of self-driving cars.
   ロ. lack understanding of the technology of self-driving cars.
   ハ. have spent too much money on self-driving car research.
   ニ. feel that the public is ready for the self-driving car.

2. The passage suggests that, in the next few years,
   イ. self-driving cars will have conversations with the drivers.
   ロ. Google will become the world leader in self-driving cars.
   ハ. self-driving cars will no longer require people to drive them.
   ニ. more and more driving tasks will be under computer control.

3. The "hand-off problem" (paragraph 6) is a difficult problem because people in self-driving cars
   イ. prefer texting to driving.
   ロ. tend to stop concentrating on the road.
   ハ. are not familiar with voice commands.
   ニ. easily forget how to operate the car's computer.

4. All of the following are true about Sebastian Thrun EXCEPT that he
   イ. invented the Tesla Autopilot system.
   ロ. owns a self-driving car.
   ハ. participated in a contest sponsored by the Pentagon.
   ニ. understands the computer software of self-driving cars.

5. The underlined word "hair-raising" (paragraph 10) is closest in meaning to

イ. complicated.

ロ. fashionable.

ハ. frightening.

ニ. remarkable.

6. The underlined word "it" (paragraph 12) refers to

イ. difficult driving conditions.

ロ. the abilities of the driver.

ハ. words of caution.

ニ. the technique of autonomous driving.

7. Laws requiring cars to be controlled by humans

イ. have discouraged many Tesla owners.

ロ. are supported by the California Department of Motor Vehicles.

ハ. do not exist in Europe.

ニ. are supported by Google.

8. The author would probably agree that

イ. the U.S. government has shown little interest in self-driving car research.

ロ. fully self-driving cars are beyond the capacity of artificial intelligence.

ハ. Nissan is far ahead of Tesla in the development of self-driving cars.

ニ. fully self-driving cars will take a long time to develop.

9. The most appropriate title for this passage is

イ. Nissan and Tesla: Car Companies of the Future.

ロ. Driver Behavior in the Age of Autopilot.

ハ. Self-Driving Cars: Challenges and Prospects.

ニ. Artificial Intelligence and Future Transportation.

Ⅲ．次の１～７それぞれの空所を補うのにもっとも適当なものを，各イ～ニから１つずつ選び，その記号を解答用紙の所定欄にマークせよ。

1．Strengthening measures (　　) exposure to secondhand smoke is a global trend.

イ．against　　ロ．in

ハ．through　　ニ．to

2．It is important for the younger generation to develop well-regulated dietary habits and acquire knowledge about eating, (　　) that they might raise children in the future.

イ．depending　　ロ．given

ハ．granted　　ニ．taken

3．Some local governments have developed their own English language learning materials, with the aim (　　) the English proficiency of all officials in time for the 2020 Tokyo Olympics and Paralympics.

イ．at improving　　ロ．for improvement

ハ．of improvement　　ニ．of improving

4．How to use the (　　) number of closed school buildings has become a challenge in many parts of Japan.

イ．developing　　ロ．eroding

ハ．extending　　ニ．increasing

5．The man is said to (　　) the crime before his arrest, but during his trial he claimed his innocence.

イ．confess to　　ロ．had confessed over

ハ．have confessed to　　ニ．having confessed over

6. The new technology is expected to enhance people's well-being and happiness, (　　) it also has the potential of being used for unethical purposes.

イ. because　　ロ. or

ハ. so　　ニ. yet

7. The government report on science and technology released last month describes how technological progress (　　) people's lives by 2035.

イ. changes　　ロ. is changing

ハ. will be changed　　ニ. will have changed

Ⅳ．次の１～６のそれぞれにおいて，下線部イ～ニのうち，英語表現上正しくないものを１つずつ選び，その記号を解答用紙の所定欄にマークせよ。

1．The experience crossing (イ) cultural and national boundaries has enriched (ロ) my life beyond (ハ) the possibilities offered within (ニ) the geographic and social confines of my native country.

2．The nation's younger citizens, including those (イ) who are now able to vote legally, should be aware of (ロ) the consequences of not to bother (ハ) to make their voices heard. (ニ)

3．Japan is a rather (イ) unusual case in today's world where (ロ) geographic and political boundaries have been (ハ) firmly maintained since (ニ) only recently.

4．Although (イ) more and more foreign migrants are entering and settling in (ロ) rural parts of Japan, its (ハ) cultural landscape has not drastic (ニ) changed beyond a very superficial level.

5．A recent study shows that 7 for (イ) 10 Americans classified as (ロ) political independents were not very concerned that (ハ) climate change would (ニ) hurt them.

6．Yale University researchers recently found (イ) that 40 percent of adults worldwide (ロ) have never even heard (ハ) climate change, and in some developing countries that figure climbs up to (ニ) 65 percent.

V．次の空所(1)～(5)を補うのにもっとも適当なものを，それぞれ対応する各イ～ニから1つずつ選び，その記号を解答用紙の所定欄にマークせよ。

Phil: I can't make heads or tails of this physics problem.

Noriko: "Heads or tails?" (1)

Phil: It means the problem is too difficult to solve.

Noriko: (2)

Phil: It's just an expression. That's all you need to know.

Noriko: (3) How am I ever going to learn your language unless you help me?

Phil: Well "heads" is the top or one side of a coin, and "tails" is the bottom or the other side of a coin. They're opposites.

Noriko: (4) The words themselves are not that difficult.

Phil: If you "can't make heads or tails" of a problem it's like not being able to tell which is the head and which is the tail of an animal or a coin.

Noriko: Ah, in Japanese we have a similar expression: *chinpun kanpun*.

Phil: (5)

Noriko: It's just an expression.

Phil: Isn't that what I just said about "heads and tails" a minute ago?

Noriko: Hmm. Hey, isn't it time for that television show you enjoy?

Phil: Please don't change the topic!

(1) イ. What are you trying to say?
ロ. Physics is hard to understand.
ハ. I often use that expression also.
ニ. Speak easier English.

(2) イ. I need to know this for my TOEFL test.
ロ. I see. Very interesting.
ハ. What is it in Japanese?
ニ. But why do you say "heads or tails"?

(3) イ. Ah. I can do that!

ロ. I guess you're right.

ハ. You're no help.

ニ. Teach me another expression.

(4) イ. I know that much.

ロ. Now I know.

ハ. I know what "opposites" means.

ニ. I should know that.

(5) イ. How do you write that?

ロ. Why is it interesting?

ハ. Is it really similar?

ニ. Why do you say *chinpun kanpun*?

Ⅵ. 次の空所(1)～(5)それぞれにもっとも適当な1語を補い，英文を完成せよ。解答は解答用紙の所定欄にしるせ。

In Japanese, (　1　) the polite way to address a person is by their last name plus the suffix *san*, there is a peculiar tendency to address foreign people in Japanese by first name plus *san*, or even just by their first name only. Referring to (　2　) by name without *san* is known as *yobisute*. The practice of omitting *san*—or using the more casual *kun* or *chan*—is usually (　3　) to family members, close friends or those quite junior to yourself, and would normally be considered inappropriate in a professional setting, especially (　4　) a person you don't know well. One major factor in the (　5　) of first names for foreign nationals is the widely held view that non-Japanese prefer a more casual approach to names, i.e., first name—with or without *san*.