2017年度

E 英語問題

注 意

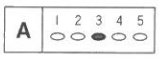
1．試験開始の指示があるまでこの問題冊子を開いてはいけません。
2．解答用紙はすべて**ＨＢの黒鉛筆またはＨＢの黒のシャープペンシル**で記入することになっています。ＨＢの黒鉛筆・消しゴムを忘れた人は監督に申し出てください。(万年筆・ボールペン・サインペンなどを使用してはいけません。)
3．この問題冊子は**16ページ**までとなっています。試験開始後，ただちにページ数を確認してください。なお，問題番号はⅠ～Ⅴとなっています。
4．解答用紙にはすでに受験番号が記入されていますので，出席票の受験番号が，あなたの受験票の番号であるかどうかを確認し，出席票の氏名欄に**氏名**のみを記入してください。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：



（３と解答する場合）

I．次の文を読み，下記の１～10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。

To the human eye, a city looks like unpromising habitat for wildlife: a sprawl of buildings, asphalt roads and parking lots, chain link fences, weeds—hardly fit even for a sparrow. But animal species often have a more complex view of our homes than we do. Cities "have more diversity than people think," says Seth Magle, director of the Urban Wildlife Institute at Chicago's Lincoln Park Zoo and one of a small but growing band of ecologists studying the animals that have made homes in the concrete jungle. "The closer we look, the more species we find in cities," he adds.

Ecologists are starting to sit up and take notice of urban wildlife, and this alertness comes not a moment too soon. Cities are, after all, one of the world's fastest growing types of habitat—and some of the most rapidly expanding cities are located near biodiversity hotspots. "If we're going to conserve all these species that we want to conserve, we're going to have to work in the cities too," Magle says.

More and more species are beginning to migrate to cities as habitat outside urban areas shrinks, or they simply learn how to get along in closer proximity to humans. Coyotes, for example, were rarely spotted in Chicago before the 1990s, but now an estimated 2,000 make their home in the city and its environs. The animals have become savvy and street-smart—literally. Some have been observed looking both ways before crossing the street. Coyotes living in Chicago's urban core "may cross over a hundred roads in a 24-hour period," says Stan Gehrt, a professor of environmental science at Ohio State University, who has been studying Chicago's urban coyotes since 2000.

It's no surprise that cars are by far the major danger to these animals. Even so, Gehrt has found that survival and reproductive rates are higher among coyotes in urban than in rural areas, largely because of the lack of hunting and trapping in the city. Urban coyotes are almost completely nocturnal, resting during the day and keeping to out-of-the-way patches of green in places like cemeteries, parks, and vacant lots. "A coyote in an urban setting is trying to hide and escape people, while still living among them," Gehrt says.

Researchers are documenting changes in animal behavior brought about by

city life. Compared to their rural cousins, for example, squirrels in urban areas are more aggressive with one another—and bolder. "They've gotten to the point where they don't even see humans as a threat anymore," says urban ecology researcher Tommy Parker. In parks, for example, squirrels are frequently exposed to humans and tend to lose their fear of them over time. Humans may also feed the squirrels, resulting in higher squirrel density in the park, but higher density in turn results in greater competition and aggressiveness among squirrels for the limited resources available. Similar patterns have been observed across a variety of species and have been named "urban wildlife syndrome."

Another factor that profoundly shapes the behavior of urban wildlife is sound. "Basically, cities generate a lot of noise," says Madhusudan Katti, professor of biology at California State University at Fresno. And so, for example, city squirrels rely more on movements of the tail to communicate with one another and less on vocal warning calls, compared to rural populations of their species.

"A lot of the noise in cities tends to be low-pitch, low-frequency," Katti adds—think, for example, of the roar of big trucks over asphalt. He and other scientists have found that many bird species sing louder in cities and also shift to high notes that are more likely to be heard over city noises.

Cities can also change the structure of birdsong. The white-crowned sparrow, common throughout much of North America, has a song consisting of a whistle, a buzz, and a trill at the end. Katti wondered whether these "vocal gymnastics" would be heard in a noisy urban environment. So he and his assistants recorded sparrow songs across a rural-urban spectrum. "We were predicting that song components might become simpler" in cities, he says.

That's exactly the case: song structure is closely correlated with background noise levels, they found. "What seems to be happening is, all these high-frequency components are tending toward more of a whistle," Katti says.

As our awareness of the variety of species that can thrive in urban areas expands, some ecologists are beginning to wonder whether cities could serve as a refuge for endangered species. In fact, in some cases cities are already doing so. Gray-headed flying foxes, a threatened bat species, established a permanent camp near the Royal Botanic Gardens of Melbourne, Australia, in 1986. By 2003, the

colony had grown to nearly 30,000 individuals.

Scientists at the Australian Research Centre for Urban Ecology determined that the bats have been able to survive in the city because of a surge in interest in native plants over recent decades. More than 87 tree species that provide food for flying foxes are found in Melbourne—far more than were present before the founding of the city—and provide abundant year-round nourishment for them.

Birds are drawn to cities for similar reasons. "It's almost a general pattern emerging in studies across cities that the abundance of many bird species or whole bird communities is higher in cities than in surrounding natural habitats, which is an indication of higher levels of food availability," says Katti.

Katti and others have also found that within urban areas, bird diversity is directly related to water use. Especially in dry landscapes such as the western United States, our profligate use of water to create thick green lawns, orange groves, and golf courses can be a good thing for bird species. Abert's towhee, a small songbird restricted to a narrow range in the Sonoran Desert of the southwestern United States, is rarely glimpsed in Tucson—where water is expensive and landscaping emphasizes native, low-water plants. But in green Phoenix, where water is cheaper and used more freely, the bird is so common as to be unremarkable.

"So you have a native species whose rural habitat has been harmed to the point where we're worried about it, and it loves urban habitats where water is used excessively," says Katti. "What are you going to do?"

Sharing our cities with threatened and sensitive species is likely to bring up other dilemmas and paradoxes. For example, while birds and bats are highly mobile and can easily exploit the new resources humans create, other wildlife might need help getting to suitable patches of urban habitat. We may find ourselves assisting mice, salamanders, and snakes—as well as bats. Still, these stories suggest that it's time to take the question seriously: Can we conserve by cohabiting?

1. One idea of the first paragraph is that

イ. animals are smarter than people.

ロ. cities have a diversity of people.

ハ. animals prefer urban to rural areas.

ニ. cities have a diversity of living spaces.

2. According to the passage, ecologists have started to think about how to

イ. transform cities into natural environments.

ロ. understand and support wildlife living in cities.

ハ. prevent cities from expanding too rapidly.

ニ. preserve the natural habitat of threatened species.

3. The underlined word "savvy" (paragraph 3) is closest in meaning to

イ. clever.

ロ. frightened.

ハ. hungry.

ニ. lazy.

4. Research suggests that coyotes in the city can

イ. become friends with people.

ロ. get by without green spaces.

ハ. recognize cars and avoid them.

ニ. communicate with other urban species.

5. The passage suggests that "urban wildlife syndrome" (paragraph 5) occurs because animals in the city

イ. tend to imitate the behavior of people.

ロ. need to be more aggressive to survive.

ハ. have learned how to cooperate with other urban species.

ニ. are isolated from each other and don't learn proper behavior.

6. Compared to the song of white-crowned sparrows living in the country, the song of white-crowned sparrows living in the city is

イ. high-pitched and simple in structure.

ロ. low-pitched and simple in structure.

ハ. high-pitched and complex in structure.

ニ. low-pitched and complex in structure.

7. The underlined word "profligate" (paragraph 13) is closest in meaning to

イ. educated.

ロ. limited.

ハ. realistic.

ニ. wasteful.

8. The author gives the examples of the gray-headed flying fox and Abert's towhee to show

イ. how human behavior influences the rural environment.

ロ. that humans are ignorant of the needs of wildlife.

ハ. how cities can provide a refuge for threatened species.

ニ. that bats and birds can no longer adapt to rural habitats.

9. The passage considers all the following EXCEPT

イ. dangers to humans posed by urban wildlife.

ロ. adaptive challenges faced by urban wildlife.

ハ. behavioral changes among urban wildlife.

ニ. conditions affecting the diversity of urban wildlife.

10. The most appropriate title for this passage is

イ. Endangered Species: How Can We Protect Them?

ロ. Tasks of Survival Among Urban and Rural Wildlife.

ハ. Wildlife in Our Cities: Should We Be More Welcoming?

ニ. The Decline of Animal Habitats in the United States.

Ⅱ．次の文を読み，下記の１～10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。

On December 8, 1903, Samuel Langley, head of the Smithsonian Institution and America's foremost expert on flight, was ready to make his most important attempt at manned flight. Since 1891 he'd been flying unmanned models powered by internal combustion engines; the United States government considered his experiments so promising that they'd given him $50,000 to continue. Now he planned to fly his gasoline-powered, manned plane off a houseboat in the Potomac River. The press was on hand, waiting expectantly.

But it didn't happen. Unfortunately, the launching device, which was supposed to throw the plane into the air, snagged the plane at the last second, and it dropped into the water "like a handful of cement."

The New York Times, scornful of attempts at powered flight anyway, criticized Langley: "The ridiculous failure was not unexpected. The flying machine might be evolved by the combined and continuous efforts of mathematicians and mechanics in one thousand to ten million years."

It didn't take that long. Only nine days later, on December 17, two bicycle makers from Dayton, Ohio—Wilbur and Orville Wright—achieved the goal of all the world's would-be aviators: powered flight. It was a revolutionary development in the history of humankind, but few people even noticed. Only a few papers carried the Associated Press story about the flight. Most editors doubted the story's truthfulness. When the Wrights set up the world's first airplane runway outside Dayton in 1904 and flew daily all summer, only a few reporters came to see.

In fact, the first published eyewitness account of flight appeared, amazingly enough, in a bee-keeping journal called *Gleamings in Bee Culture*, almost a year after they started flying. The editor, A. I. Root, watched the Wrights perform a flight on September 20, 1904, and was so amazed that he wrote an article comparing the feat to a fable from *The Arabian Nights*.

One would think that the United States government would leap to purchase one of these new flying machines, but that's not what happened. In 1904, after making flights of five minutes, the Wrights wrote their congressman, Robert Nevin,

offering to license their device to the government for military purposes. Their letter said they'd made 105 flights up to 3 miles long at 35 miles per hour. The flying machine, they said, "lands without being wrecked" and "can be made of great practical use in making surveys and carrying messages in times of war." (Interestingly enough, for many years the only use the Wrights could imagine for their creation was war.)

The War Department, under future president William Howard Taft, responded that they weren't interested. They'd gotten many requests for "financial assistance in the development of designs for flying machines" and would only consider a device that had been "brought to the stage of practical operation without expense to the United States government." But, they added, do get in touch "as soon as it shall have been perfected."

In October 1905, the Wrights wrote that they'd built a better plane and made flights of up to 39 minutes and over 20 miles. The War Department again declined in a letter with almost the same wording—a form letter! Obviously, either no one was reading their letters, or no one understood what they were saying.

In 1907, a young balloon racer named Frank Lahm got a job with the United States Army in Washington, D.C. He knew all the early flight pioneers and had heard from them about the miracle achieved by the Wrights. Lahm's presence in the Washington office led to the Wrights' big break. As Fred Howard wrote in *Wilbur and Orville*:

> Lahm wrote a letter to the Army Signal Division urging that the brothers' proposal for the sale of a Flyer receive favorable action. It would be unfortunate, he said, if the United States should not be the first to take advantage of the unquestioned military value of the Wright Flyer. Lahm's letter had the desired effect.
>
> Wilbur decided a fair price for the Flyer would be $25,000, but the Army Signal Division had only $10,000. When Wilbur went to Washington to attend a board meeting of the Division, his frankness of manner and self-confidence worked their usual magic and the board members assured him the entire $25,000 would be forthcoming by drawing on an emergency fund left over from the Spanish-American War.

Apparently nothing much has changed. Even though the Wrights were the only ones in the world making practical airplanes, the United States government still had to put the matter out for bids from the public. So in December 1907, it issued an "Advertisement and Specification for a Heavier-Than-Air Flying Machine," capable of carrying two men at 40 miles per hour and staying up for at least an hour, then landing without serious damage. Critics howled. The *American Magazine of Aeronautics* wrote, "There is not a known flying machine in the world which could fulfill these specifications." Amazingly, the Signal Division got 41 bids, with price tags ranging from $850 to $1 million. One was from a federal prisoner who would build a plane for his freedom. Another had plans written on wrapping paper, and a third bidder offered to build planes entirely of wood. The Wrights, of course, got the contract.

Still, it was the French and British who first acknowledged the Wright Brothers' feats publicly. Shortly after winning the government contract (but before they'd proved themselves by building the United States a plane), Wilbur went to France to demonstrate their machine. The French were enthusiastic aviators, and received him warmly at first. Then, as Wilbur rebuilt his plane (it had been damaged in shipping), working long hours and living simply in a nearby room, they became suspicious. Why wasn't he more flamboyant? Why didn't he attend the rounds of parties, like other celebrated French air pioneers?

Eventually, the French and British press decided Wilbur was a fraud. But on August 8, 1907, they changed their minds. "To make a long story short," recalled an American visitor, "he got into the machine that afternoon, got into the air and made a beautiful circular flight. You should have seen the crowd there. They threw hats and everything."

Finally, four years after the first flight, the Wright Brothers were heroes. But there was one final insult: The Smithsonian Institution insisted that the first manned flight had been Langley's slam-dunk into the Potomac. They didn't want the Wright Flyer, so it sat in a shed in Dayton until 1928, when Orville finally gave it to the London Museum of Science. Only in 1942 did the Smithsonian bow to common knowledge, reverse its position, and humbly ask for the plane. The Smithsonian restored it and dedicated it in 1948, on the 45th anniversary of flight.

1. The author uses the example of Samuel Langley mainly to show

イ. the social context of the Wright Brothers' achievement.

ロ. the technological challenges of unmanned flying machines.

ハ. the importance of competition in the making of new inventions.

ニ. the role of the press in the development of the flying machine.

2. All of the following are true about the Wright Brothers' flight on December 17, 1903 EXCEPT that

イ. very few newspapers published a story about the flight.

ロ. the flight occurred just nine days after Samuel Langley's failure.

ハ. some people did not believe that the flight really happened.

ニ. the flight was reported in a journal for bee-keepers.

3. The passage suggests that, in the several years following the Wright Brothers' first manned flight,

イ. the United States government did not have a strong need for airplanes.

ロ. the brothers made little effort to tell others about their success.

ハ. the United States government did not appreciate what the brothers had achieved.

ニ. the brothers made only small improvements in their flying machine.

4. The underlined word "break" (paragraph 9) is closest in meaning to

イ. challenge.

ロ. chance.

ハ. event.

ニ. strength.

5. According to Fred Howard in *Wilbur and Orville*, members of the Army Signal Division

イ. were impressed with Wilbur Wright's personality.

ロ. refused to pay more than $10,000 for the Wright Flyer.

ハ. doubted the military value of the Wright Flyer.

ニ. wanted to use the Wright Flyer for the Spanish-American War.

6. The underlined sentence "Apparently nothing much has changed" (paragraph 12) is describing a lack of change in the

イ. challenge of creativity.

ロ. behavior of inventors.

ハ. attitude of normal people.

ニ. action of government.

7. The passage suggests that one reason the Wright Brothers got the government contract for a "Heavier-Than-Air Flying Machine" was that

イ. the brothers had the support of their congressman, Robert Nevin.

ロ. the plans offered by the other bidders were not practical or convincing.

ハ. journalists wrote articles in support of the brothers' proposal.

ニ. the brothers had already built an airplane beyond the required specifications.

8. The underlined word "flamboyant" (paragraph 13) is closest in meaning to

イ. famous.

ロ. generous.

ハ. lively.

ニ. serious.

9. The author would most likely agree that

イ. the Wright Brothers could have achieved more if they'd worked harder.

ロ. designing a revolutionary invention depends mainly on luck.

ハ. how the Wright Brothers achieved the goal of manned flight is a mystery.

ニ. it's difficult for people to believe things that don't fit their expectations.

10. The most appropriate title for this passage is

イ. Who Were the True Inventors of the Airplane?

ロ. The Wright Brothers: A Long Path to Fame.

ハ. The History of Manned Flight in the United States.

ニ. Wilbur Wright and the United States Government.

Ⅲ．次の１～６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．A：Do you happen to know Stan's home address?

B：Sure, why?

A：I want to send his parents a thank-you note for having us over last weekend.

B：Why not just send an email?

A：（　　）

イ．I'm really not sure what to say to them.

ロ．I just wrote Stan an email recently.

ハ．I like writing by hand for this kind of thing.

ニ．Stan said his parents are good with computers.

2．A：Hey, watch where you're going!

B：Sorry, I was checking my Facebook account.

A：While crossing a busy intersection in New York City?（　　）

B：Okay, I'll try to be more careful.

イ．The Internet connection isn't good here!

ロ．It's amazing that you can focus so well!

ハ．The drivers can't tell what you're looking at!

ニ．You could get run over!

3．A：I'd like to go on a big adventure someday—maybe climb Mount Everest.

B：I thought you were afraid of heights.

A：You have a point there.（　　）

イ．High places give me a feeling of excitement.

ロ．Maybe I'll go on an African safari instead.

ハ．It's best to climb when the weather is clear.

ニ．I've already climbed Everest three times.

4. A: These are the best tomatoes I've ever tasted. Where did you buy them?

B: I didn't—I picked them in my garden.

A: You're kidding me.

B: (　　)

イ. No—I grow all my own vegetables.

ロ. Yes—I also grow strawberries and blueberries.

ハ. No—tomatoes grow better in the summertime.

ニ. Yes—vegetables are a good source of vitamins.

5. A: Have you ever wondered why roller coasters go so fast?

B: Actually, I haven't. Roller coasters scare me. I avoid them as much as possible. So do you know the answer to your question?

A: It's really quite simple—*gravity* is what makes them go so fast.

B: (　　)

イ. You seem to like roller coasters too.

ロ. We take gravity for granted.

ハ. I could have told you that.

ニ. Roller coasters are not scientific.

6. A: Could you lend me some money for a hamburger? I'll pay you back on Tuesday.

B: Sure, but what about the hamburger I bought you last week?

A: It was delicious. That's why I want another one today.

B: (　　)

イ. Okay, so now you owe me for two hamburgers.

ロ. I'm ordering a ham-and-cheese on rye from the deli.

ハ. First you should loan me some money for a cheese pizza.

ニ. Hamburgers cost about the same as they always have.

Ⅳ．次の１～８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．The movie *Jurassic Park* was a spectacular success, in (　　) part because the dinosaurs looked so real.

イ．all　　ロ．large　　ハ．main　　ニ．most

2．Aunt Martha's cookie recipe (　　) flour, milk, eggs, yeast, sugar, and butter.

イ．calls for　　ロ．prepares for　　ハ．provides for　　ニ．wishes for

3．By the end of this four-year program, students are expected to have mastered the skills (　　) to their chosen field.

イ．attached　　ロ．available　　ハ．pointing　　ニ．specific

4．When you deprive yourself (　　) a good breakfast, your brain may lack the energy it needs to function well during the day.

イ．about　　ロ．from　　ハ．of　　ニ．without

5．Clara is planning to enter the Tokyo Marathon this year, so she tries to (　　) a run every morning.

イ．get on　　ロ．go for　　ハ．make with　　ニ．set out

6．Sam follows the same (　　) every day of the week, except Sunday: wake up, walk the dog, go to work, go to the gym, come home, sleep.

イ．course　　ロ．cycle　　ハ．routine　　ニ．style

7．The "V" formation used by military aircraft is (　　) to that used by a flock of geese flying home for the winter.

イ．approaching　　ロ．comparable　　ハ．essential　　ニ．near

8．(　　) the advice of his teachers, Mike decided not to go to graduate school.

イ．Against　　ロ．Besides　　ハ．Except　　ニ．Over

V. 次の空所(1)～(6)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。

Orson: Do you (1) in aliens?

Hiromi: Are you asking me if I think aliens exist somewhere in the universe? Or are you asking me if I think aliens have visited the Earth?

Orson: I'm interested in (2) questions.

Hiromi: There are billions of stars in our galaxy that are (3) to the sun, and it's possible that many of them have Earth-like planets. So chances are good that life evolved on at least some of those planets.

Orson: Do you think there could be aliens as smart as us?

Hiromi: Maybe even (4). Unfortunately, though, I doubt if we'll ever meet them.

Orson: Why not?

Hiromi: The distances are too vast. Even if we had a spaceship that could travel close to the speed of light, which we don't have yet, a trip to a planet (5) our solar system would take hundreds or thousands of years.

Orson: Maybe we should rely on radio signals to make contact, (6) of spaceships.

Hiromi: We've been trying to pick up radio signals from outer space for quite a while now, but no luck so far.

【以下余白】