


平成 30 年度・入学試験問題

英 語 (前)

注 意 事 項

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1. 試験開始の合図があるまで、この問題冊子を開いてはいけません。
 2. この冊子は 15 ページあります。
 3. 試験開始後、落丁・乱丁・印刷不鮮明の箇所があれば申し出なさい。
 4. 解答はすべて解答用紙に、それぞれの問題の指示にしたがって記入しなさい。
 5. 解答は特に指示のない限り日本語で書きなさい。
 6. この冊子のどのページも切り離してはいけません。ただし、余白等は適宜利用してかまいません。
 7. 試験終了後、問題冊子は持ち帰りなさい。

問題 I 次の文章を読み、下の問いに答えなさい。

When I was very young, I had problems telling the difference between dinosaurs and dragons. However, there is a significant difference between dinosaurs and dragons. Dragons appear in Greek myths, legends about England's King Arthur, Chinese New Year parades, and in many dramas throughout human history. But even if their power is such that they still feature in stories created today, they were always the products of the human imagination. Dragons never existed.

Dinosaurs, however, did once live. They were here for a very long time, even if human beings never saw them. They thrived around _____ years ago, and we know about them because their bones have been preserved as fossils. The discovery of these bones in the early nineteenth century was an important step for science. First geologists*, and then ordinary people, began to realise that the earth is far older than people had assumed.

Fossils are the outlines of parts of animals and plants that were once alive, but have slowly turned (ア) stone (petrified) after they died, when the conditions are right. Fossils can be admired in many museums, and collecting them is fun. It is harder today, since a lot of the easy fossils have already been gathered for study and display. But in some places, like Lyme Regis on the south coast of England, the cliffs are still being eroded* by the waves of the sea, and here fossils often come (イ) light.

People have been coming (ウ) fossils for thousands of years. Originally, the word 'fossil' just meant 'anything dug up', so 'fossils' might be old coins, pieces of pottery, or a nice quartz* rock. But many of these objects buried in the earth looked like the shells, teeth or bones of animals, and gradually 'fossil' came to mean just these things that looked like bits of creatures. Shells of sea animals were sometimes found on mountain tops, far from the sea. Often the stony bones, teeth and shells didn't seem to be like

those of any known animal. In the 1600s, when naturalists* began to puzzle
about what had been found, they developed three sorts of explanation. ^(A) First,
some believed that these shapes had been produced by a special force within
nature, striving, but failing, to create new kinds of organisms*. They were
similar to living plants and animals, but hadn't quite made it. Secondly, others
argued that fossils were really the remains of species of animals or plants that
had simply not yet been discovered. So much of the earth itself remained
unexplored, that these creatures would eventually be found in remote parts of
the world, or in the oceans. ^(C) A third group of scholars dared to suggest these
organisms were creatures that had once been alive but were now extinct. If
that was true, then the earth must be much older than most people thought.

It was not until the eighteenth century that the word 'fossil' got its modern meaning, that of the petrified remains of a plant or animal that had once been alive. The scientist who convinced the world that some animals had become extinct was a Frenchman, Georges Cuvier (1769-1832). Cuvier was very good at anatomy*, especially comparing the anatomy of different kinds of animals. He had a special interest (工) fish but also a vast knowledge of the whole animal kingdom. He dissected* hundreds of different animals, then he compared the different parts of their bodies and explored what all their various organs did. He argued that animals are living machines in which every part has its proper purpose. He also noticed that everything in an animal's body worked together. For instance, animals that eat meat have canines (sharp teeth), which permit them to tear the flesh of their prey. They have the correct digestive* system, muscles, and all other characteristics they need to catch and live on meat. Those that graze on plants, like cows and sheep, have teeth ⁽³⁾ (才) flattened ends, which help in grinding* grass and hay. Their bone structure and muscles are for standing around rather than running and pouncing.

Cuvier's belief that animals are so beautifully constructed that the whole

fits together in harmony made it possible for him to say a lot about an animal's structure and mode of life just by looking at one part of it. Find a canine tooth and you have found a carnivore*, he said, and he would apply the same principles to fossils. He discovered that the fossils often resembled parts in living animals that could still be found in the area, but in many cases the teeth and bones had small, but significant, differences. By chance, the frozen remains of a large elephant were found in Siberia. Cuvier examined this 'woolly mammoth', as it was called, and argued that it was not only unlike any known living elephant, but that an animal of this size would surely have been noticed before, were it still roaming around somewhere. So it must have become extinct.

出典 William Bynum, *A Little History of Science*, Yale University Press,
2013 より一部修正

*注

geologists : 地質学者

erode : 侵食する

quartz : 石英, 水晶

naturalist : 博物学者

organisms : 有機体, (微)生物

anatomy : 解剖学

dissect : (...を)切り裂く, 解剖する

digestive : 消化の, 消化を助ける

grind : 細かく砕く, すり砕く

carnivore : 肉食獣

問 1 下線部(1)に「2 億」を意味する英語を書きなさい。

問 2 空欄(ア)~(オ)に入るもっとも適切な単語を下の[]の中から選びなさい。同じ単語を複数回使用してもよい。

[at in of upon to with from off within]

問 3 下線部(2)の 1600 年代に naturalists が考えた 3 つの説明について結果的に正しかった説明を、下線部(A)~(C)の中からすべて選んで記号で答えなさい。

問 4 下線部(3)の live on meat を内容に即して日本語に訳しなさい。

問 5 “fossil” という単語の元々の意味の例として、最も適切なものを一つ選び記号で答えなさい。

- (a) a piece of china on a table
- (b) an old copper coin in a drawer
- (c) a clay pot in the earth
- (d) a fish swimming in the water
- (e) a bird in its nest

問 6 本文の内容と合っている文章に○を、合っていない文章に×をつけなさい。

- (a) Dinosaurs and dragons look alike and they are always the products of the human imagination.
- (b) Science advanced due to the discovery of dinosaur bones in the early 1800s.
- (c) Animals that graze on plants have canines.
- (d) Many museums and collectors have gathered fossils, so it is impossible to find them now.
- (e) Georges Cuvier discovered that the shapes and functions of the parts of an animal's body are adapted to its work based on the dissection of various animals.

問題Ⅱ

次の文章を読み、下の問いに答えなさい。

Brilliant technologies transform the magical into the banal. An idea that seems outlandish* to one generation becomes commonplace to the next. So it has been with electricity, space flight and the Internet. So it is likely to prove with driverless cars.

The past few weeks have seen a series of announcements. Singapore has launched the world's first public trial of a robo-taxi service. The companies Uber and Volvo announced that they would pioneer an autonomous* taxi fleet in Pittsburgh within weeks. The car company Ford said it would build its first mass-market driverless car by 2021.

To their supporters, autonomous cars (A). Conventional cars are inefficient, dangerous and dirty. They sit idle for 95 per cent of their lives, clogging up city streets and car parks. When moving, they smash into each other, killing 3,500 people every day around the world. Ninety per cent of accidents are caused by human error. Cars pollute the environment, accounting for 45 per cent of oil burnt.

The widespread adoption of fully autonomous and, still better, electric cars could therefore be a massive benefit to mankind. It could lead to a far more efficient use of resources, save many lives and reduce congestion and pollution. Futurologists* envision small fleets of shareable, connected cars constantly whizzing around our cities picking up passengers on demand. The consulting company McKinsey forecasts that 15 per cent of new cars could be fully autonomous by 2030.

But two obstacles block their widespread adoption. The first remains ⁽¹⁾technological. For all the astonishing advances made in recent years, it is phenomenally difficult to replicate humans as sensory beings.

How does a car distinguish (ア) a plastic bag blowing across a road and a runaway dog? How does a car push through a crowd of people outside a

football stadium?

Engineers argue that the genius of self-driving cars is their connectedness. “When human drivers make a mistake the individual learns from it,” says one Silicon Valley pioneer. “When a self-driving car makes a mistake then every other car will learn (イ) that mistake once an engineer has fixed it. It is just a matter of time (ウ) our technology surpasses human capacity.”

[hard / proves / no / perfect / how / to / technology / matter / the], it⁽²⁾ may be the easier part of the puzzle. A stiffer challenge remains the human. Even when manufacturers and software engineers develop fully autonomous cars in which they have total trust, it will still take many years, if not decades, for them to be freely embraced by governments and consumers.

First, there is the instinctive human resistance to handing over control to a robot, especially given fears of cyber-hacking. Second, for many drivers cars are an extension of their identity, a mechanical symbol of independence, control and freedom. They will not abandon them lightly.

Third, robots will always be held to far higher safety standards (エ) humans. They will inevitably cause accidents. They will also have to be⁽³⁾ programmed to make a calculation that could kill their own passengers or bystanders* in order to minimise overall loss of life. “Many of us are afraid that one reckless act will cause an accident that causes a backlash and shuts down the industry (オ) a decade,” says the Silicon Valley engineer. “That would be tragic if you could have saved tens of thousands of lives a year.”

Fourth, the deployment of autonomous vehicles could destroy millions of jobs. Their rapid introduction is certain to provoke resistance. There are 3.5 million professional lorry* drivers in the US.

Fifth, the insurance industry and legal community have to wrap their heads around* some tricky liability issues. In what circumstances is the owner, car manufacturer or software developer responsible for damage?

Some governments, such as those of Singapore, China and the UK, as well

as several states in the US are creating permissive regulatory and legal environments. Regulators can certainly speed adoption by approving⁽⁴⁾designated lanes for autonomous cars, for example, and devising international safety rules and standards.

出典 John Thornhill, "Humans are the main obstacle to the driverless revolution" *Financial Times*, August 2016 より一部修正

*注

outlandish : 異様な, 奇妙な

autonomous : 自律的な

futurologists : 未来学者

bystanders : 傍観者

lorry : 大型トラック

wrap their heads around : 理解する, 納得する

問 1 空欄(A)に入る, 文脈上もっとも適切な語句を下記の選択肢から選んで, 記号で答えなさい。

- (a) are not very practical.
- (b) should not be rushed.
- (c) are not a priority.
- (d) cannot arrive quickly enough.
- (e) will not improve our lives

問 2 下線部(1)の意味する具体的な内容を 10 字以内の日本語で説明しなさい。

問 3 下線部(2)の[]内の単語を文意に合うように適切な語順に並べ替えなさい。ただし, 文頭の文字は大文字に書き換えること。

問 4 空欄(ア)~(オ)に入るもっとも適切な単語を下の[]の中から選びなさい。同じ単語を複数回使用してもよい。

[for from to than with since before into between during]

問 5 下線部(3)の具体的な事例として最も適切な文章を下記の選択肢から選んで、記号で答えなさい。

(a) In order to prevent terrorist attacks made through cyber-hacking, the car control system will not be connected to the Internet.

(b) In order to avoid hitting a school bus filled with many children, the car control system chooses to crash into a wall, killing the two passengers on board.

(c) The car control system shifts into manual driving mode when parking in difficult locations. The human driver controls the car to improve safety.

(d) The car control system will improve health by adjusting the engine to minimize pollution.

(e) Using advanced sensors, the car control system will be able to see around corners and prevent fatal accidents.

問 6 下線部(4)を 80 字以内の日本語に訳しなさい。

問題Ⅲ

次の文章を読み、下の問いに答えなさい。

A recent experiment at the University of Pennsylvania illustrates well how easily we can feel overwhelmed by the magnitude of a problem. Researchers gave students \$5 to fill out a short survey. They then showed them a flyer and asked them to make a donation to Save the Children, one of the world's leading charities. There were two different flyers. Some (randomly selected) students were shown this:

Food shortages in Malawi are affecting more than 3 million children; In Zambia, severe rainfall deficits have resulted in a 42% drop in maize* production from 2000. As a result, an estimated 3 million Zambians face hunger; Four million Angolans — one third of the population — have been forced to flee their homes; More than 11 million people in Ethiopia need immediate food assistance.

Other students were shown a flyer featuring a picture of a young girl and these words:

Rokia, a 7-year-old girl from Mali, Africa, is desperately poor and faces a threat of severe hunger or even starvation. Her life will be changed for the better as a result of your financial gift. With your support, and the support of other caring sponsors, Save the Children will work with Rokia's family and other members of the community to help feed her, provide her with education, as well as basic medical care and hygiene education.

The first flyer raised an average of \$1.16 from each student. The second flyer, in which the plight* of millions became the plight of one, raised (ア). The students, it seems, were willing to take some responsibility for helping Rokia, but when faced with the scale of the global problem, they felt discouraged.

Some other students, also chosen at random, were shown the same two

flyers after being told that people are more likely to donate money to an identifiable victim than when presented with general information. Those shown the first flyer, for Zambia, Angola, and Mali, gave more or less what that flyer had raised without the warning — (1). Those shown the second flyer, for Rokia, after this warning gave only \$1.36, less than half of what their colleagues had committed without it. Encouraging students to think again prompted them to be less generous to Rokia, but not more generous to everyone else in Mali.

The students' reaction is typical of how most of us feel when we are confronted with problems like poverty. Our first instinct is to be generous, especially when facing an imperiled* seven-year-old girl. But, like the students, our second thought is often that there is really no point: Our contribution would be a drop in the bucket, and the bucket probably leaks. This book is an invitation to think again, *again*: to turn away from the feeling that the fight against poverty is too overwhelming, and to start to think of the challenge as a set of concrete problems that, once properly identified and understood, can be solved one at a time.

Unfortunately, this is not how the debates on poverty are usually framed. Instead of discussing how best to fight diarrhea* or dengue*, many of the most vocal experts tend to be fixated on* the “big questions”: What is the ultimate cause of poverty? How much faith should we place in free markets? Is democracy good for the poor? Does foreign aid have a role to play? And so on.

One such expert, Jeffrey Sachs, has an answer to all these questions: Poor countries are poor because they are hot, infertile*, malaria infested*, often landlocked*; this makes it hard for them to be productive without an initial large investment to help them deal with these endemic* problems. But they cannot pay for the investments precisely because they are poor — they are in what economists call a “poverty trap.” Until something is done about these

(3)

problems, neither free markets nor democracy will do very much for them. This is why foreign aid is key: It can kick-start a virtuous cycle by helping poor countries invest in these critical areas and make them more productive. The resulting higher incomes will generate further investments; the beneficial spiral will continue. In his best-selling 2005 book, Sachs argues that if the rich world had committed \$195 billion in foreign aid per year between 2005 and 2025, poverty could have been entirely eliminated by the end of this period.

But then there are others, equally vocal, who believe that all of Sachs's answers are wrong. The economists William Easterly and Dambisa Moyo both argue that aid does more bad than good: It prevents people from searching for their own solutions, while corrupting and undermining local institutions. The best bet for poor countries is to rely on one simple idea: When markets are free and the incentives are right, people can find ways to solve their problems. They do not need handouts, from foreigners or from their own governments. In this sense, the aid pessimists are actually quite optimistic about the way the world works.⁽⁴⁾ According to Easterly, there are no such things as poverty traps.

Whom should we believe? Those who tell us that aid can solve the problem? Or those who say that it makes things worse? The debate cannot be solved in the abstract: We need evidence. But unfortunately, the kind of data usually used to answer the big questions does not inspire confidence. There is never a shortage of compelling anecdotes, and it is always possible to find at least one to support any position.

出典 Abhijit V. Banerjee and Esther Duflo, *Poor economics: A radical rethinking of the way to fight global poverty*, PublicAffairs, 2011 より一部修正

*注

maize : トウモロコシ

plight : 窮状

imperiled : 危機にさらされた

diarrhea : 下痢

dengue : デング熱

be fixated on : ~に執着した

infertile : 土地が不毛な

malaria infested : マラリア多発の

landlocked : 内陸の

endemic : 風土性の

問 1 下線部(1)を 15 字以内の日本語で説明しなさい。

問 2 空欄(ア), (イ)に入るもっとも適切な金額を下記の選択肢から選んで, 記号で答えなさい。

(a) \$0.65

(b) \$1.26

(c) \$1.67

(d) \$2.71

(e) \$2.83

問 3 下線部(2)を 60 字以内の日本語に訳しなさい。

問 4 下線部(3)を 35 字以内の日本語で説明しなさい。

問 5 下線部(4)を具体的に説明している箇所を, 本文の中から 20 語以内の英語で抜き出しなさい。

問 6 以下の各文章について、「Sachs 氏が主張していることにはア」,
「Easterly 氏が主張していることにはイ」, 「両者とも主張していることにはウ」,
「両者とも主張していないことにはエ」をそれぞれ記入しなさい。

- (a) Poverty traps are a myth.
- (b) A large amount of foreign aid given over a 20-year period could have been enough to overcome poverty.
- (c) Foreign aid is a key factor in the prevention of global warming.
- (d) Creating a stable democracy is the first step in eliminating poverty.
- (e) Foreign aid stops people from finding ways to solve their own problems.

問題IV

You write an advice column called Advisor Aoki for the local newspaper. People send you letters describing problems in their lives and you publish replies advising them. Today you've received the letter below.

Write your reply in English in 100 to 130 words. Then, in the box on the answer sheet, write the total number of words that you have written in your reply.

Dear Advisor Aoki,

I don't know what to do. I'm a student finishing my second year of high school in Nagoya. I love dancing and have been a dancer for most of my life. I've just been accepted to a prestigious dance academy overseas. Going there would mean quitting school, moving to a foreign country, and dancing full-time. It would be a step towards a career as a professional dancer.

The problem is that my parents are against my quitting school. They want me to stay in school in Japan and prepare for university entrance exams. They tell me, "You could have a nice stable career as a civil servant."

My parents only want what's best for me, but I'm not sure that they understand what is best for me now. I don't want to miss this great opportunity to dance.

Advisor Aoki, what should I do? Please advise me!

Yours sincerely,
Dynamic Dancer

