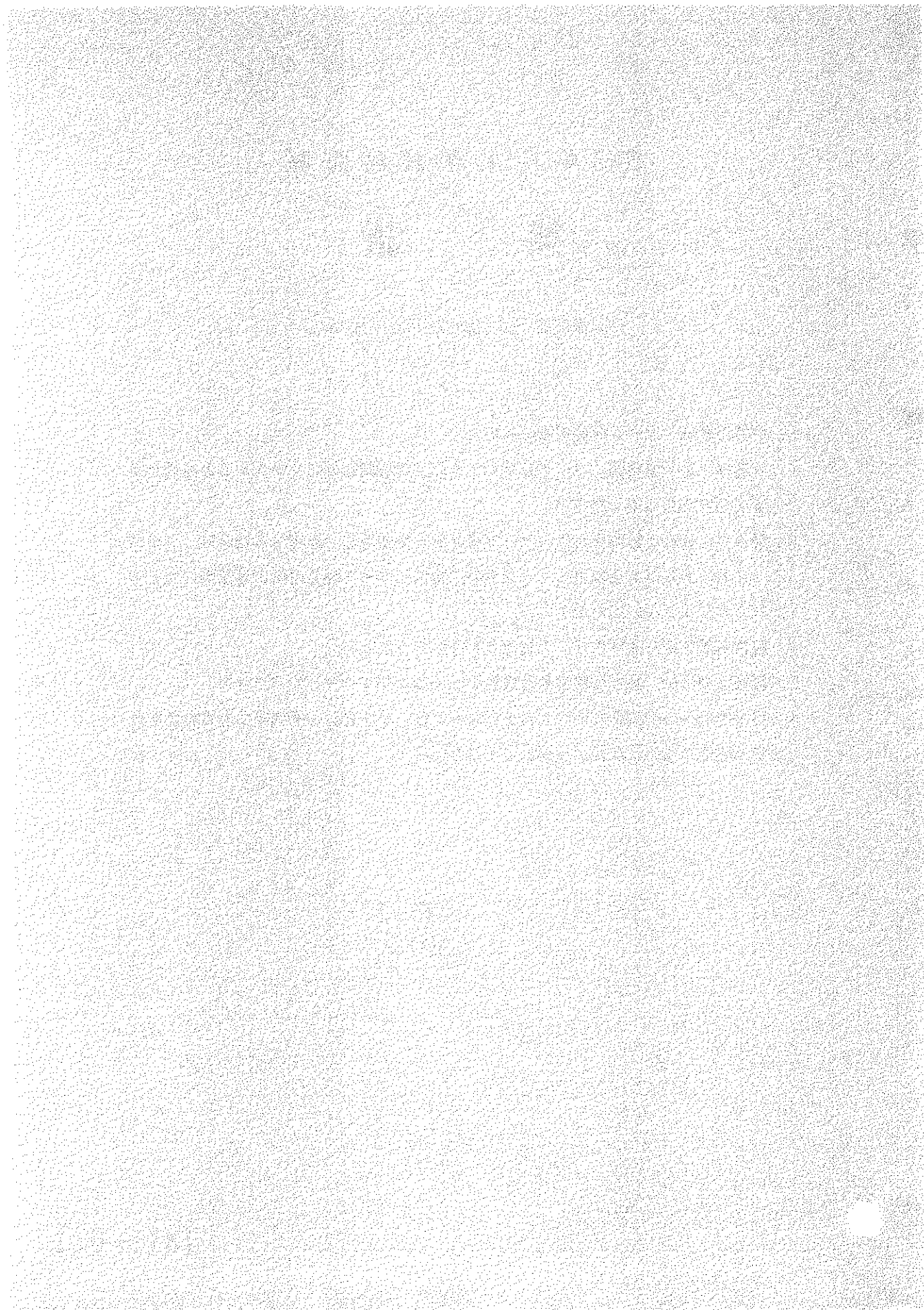


2018 年度 入学 試験 問題

英 語

(試験時間 10:30~11:50 80分)

1. 解答用紙は、マーク解答用紙のみです。
2. 解答は、必ず解答欄にマークしてください。解答欄以外にマークすると無効となりますので注意してください。
3. 解答は、HBの鉛筆またはシャープペンシルを使用し、訂正する場合は、プラスチック製の消しゴムを使用してください。特に、マーク解答用紙には鉛筆のあとや消しくずを残さないでください。
4. 解答用紙を折り曲げたり、汚したりしないでください。
5. 解答用紙には、必ず受験番号と氏名を記入およびマークしてください。
6. 解答用紙への受験番号の記入およびマークは、コンピュータ処理上非常に重要なので、誤記のないよう特に注意してください。



I 次の英文を読み、設問に答えなさい。(20点)

The first step in any scientific investigation is to ask a question about the physical world. A scientist can ask, for example, whether a particular painting was completed in the seventeenth century. Various physical and chemical tests can be used to find the age of the paint, study the canvas, X-ray the painting, and so on. The question of whether the painting is old or a modern fake can indeed be investigated by the scientific method. But the methods of science cannot answer other equally valid questions. No physical or chemical test will tell us whether the painting is beautiful or how we are to respond to it. These questions are simply outside the realm of science. (あ)

The scientific method is not the only way to answer questions that matter in our lives. Science provides us with a powerful way of tackling questions about the physical world — how it works and how we can shape it to our needs. But many questions lie beyond the scope of science and scientific methods. Some of these questions are deeply philosophical: What is the meaning of life? Why does the world hold so much suffering? Is there a God? Other important personal questions also lie outside of science: What career should I choose? Whom should I marry? Should I have children? Scientific information might influence some of our personal choices, but we cannot answer these questions fully by the cycle of observation, hypothesis, and testing. For answers, we turn instead to religion, philosophy, and the arts. (イ)

Symphonies, poems, and paintings are created to be enjoyed and are not, in the end, experiences that need to be analyzed scientifically. This is not a criticism. These art forms address different human needs than science, and they use different methods. The same can be said about religious faith. Strictly speaking, there should be no conflict between the questions asked by science and religion, because they cover different aspects of life. Conflicts arise only when people attempt to apply their methods to questions where those methods aren't applicable. (エ)

設 問

1. 下線部(あ)の These questions に含まれるものを A～D より 1 つ選び, その記号をマークしなさい。
 - A. whether a painting was completed centuries ago
 - B. whether a painting is old
 - C. whether a painting is a modern fake
 - D. whether a painting is beautiful

2. 下線部(い)の the cycle of observation, hypothesis, and testing の意味に最も近いものを A～D より 1 つ選び, その記号をマークしなさい。
 - A. scientific investigation B. the physical world C. religious belief
 - D. personal questions

3. 下線部(う)の we turn instead to religion, philosophy, and the arts の意味に最も近いものを A～D より 1 つ選び, その記号をマークしなさい。
 - A. we have to turn to science instead of religion, philosophy, and the arts
 - B. we don't necessarily turn to religion, philosophy, and the arts
 - C. we look to religion, philosophy, and the arts instead of science
 - D. we offer science as our alternative rather than religion, philosophy, and the arts

4. 下線部(え)の address の意味に最も近いものを A～D より 1 つ選び, その記号をマークしなさい。
 - A. make up for B. search for C. take advantage of
 - D. deal with

5. 下線部(お)の they の具体的な内容として最も適当なものをA～Dより1つ選び、その記号をマークしなさい。

- A. symphonies, poems, and paintings B. experiences
C. different human needs D. different methods

6. 本文の内容と一致するように、次の英文の空所(ア)～(オ)に入る最も適当なものをA～Gよりそれぞれ1つ選び、その記号をマークしなさい。

According to the author, scientific investigation (ア) us to discover a painting's age but not to decide whether it is beautiful or not, because the (イ) can actually be proven through the cycle of observation, hypothesis and testing while the (ウ) cannot because it simply (エ) beyond the (オ) of science.

- A. deprives B. later C. boundaries D. latter E. lies
F. allows G. first

II 次の英文を読み、設問に答えなさい（*印の語は〔注〕を参照しなさい）。(20点)

Most Americans of a certain age are familiar with the story of Mary Poppins, a spirited British lady with supernatural powers. She could fly with just an umbrella, for example. Although the book didn't include any songs, the film version was a musical, and even now those tunes are lodged in my brain, especially the one about a spoonful of sugar helping the medicine go down.

Sugar has been getting a bad reputation these days all around the world. My Japanese husband was opposed to letting our children have sweets when they were small. I, however, had grown up in a household where dessert was served after every lunch and dinner — mostly cookies and pies baked by my mother. He did give in when our kids had colds. I recall one humid afternoon when we melted chocolate and sprinkled bitter powder into *molds to get our children to take their medicine.

In Japan, I've found that desserts do exist, and they are often attractive and delicious, but they are mostly shared on special occasions or when diplomacy is required. For example, a few years ago, our next-door neighbor came to the door with a white carton with the name of a popular bakery on the side.

"We are going to have some construction done on our house," she said. "It will be noisy for a while. I apologize in advance." She handed over the box, with a bow. Later, when I looked inside, I found the box full of cream puffs. Although, as our neighbor said, the next few weeks were noisy, each hammer pound reminded me of the sweets filled with custard. I could hardly be annoyed.

More recently, I answered the door to find another neighbor bearing a big box of cookies. "Sorry about the disturbance earlier," he said. I hadn't really noticed that anything out of the ordinary was going on, but I appreciated his consideration, and my family and I enjoyed the cookies.

These days, when I take a trip out of town, I bring back something sweet as a souvenir for my neighbors. Also, when the farmers who live around here bring us

vegetables from their fields, I usually return the favor by baking carrot cake for them.

In my own country, people sometimes have noisy parties, which lead to complaints and phone calls from irritated others. As a person who likes to sleep in on weekends, I have been annoyed by neighbors who operate their lawnmowers at the break of dawn. A little bit of sugar, however, can go a long way in keeping the peace and smoothing out relations.

〔注〕 *molds 菓子の流し型

設 問

1. 下線部(あ)～(え)の意味に最も近いものをA～Dよりそれぞれ1つ選び、その記号をマークしなさい。

(あ) helping the medicine go down

- A. helping the medicine work on your body
- B. helping the medicine be effective for a long time
- C. helping you swallow the medicine
- D. helping you reduce the medicine

(い) give in

- A. worry
- B. yield
- C. regret
- D. oppose

(う) in advance

- A. beforehand
- B. immediately
- C. without fail
- D. in gratitude

(え) out of the ordinary

- A. unforgettable
- B. unusual
- C. illegal
- D. exclusive

2. 本文の第3段落以降の内容と一致するように、次の英文の空所に入る最も適当なものをA～Dより1つ選び、その記号をマークしなさい。

The author experienced the importance of diplomacy through sweets
_____.

- A. when a popular bakery arrived at her home
- B. when a neighbor thanked her for a box of sweets
- C. when she was offered a white box with carrot cakes
- D. when a neighbor came to her home with a box of sweets

3. 本文の内容と一致するものを(アイ)のA～Dよりそれぞれ1つ選び、その記号をマークしなさい。

- (ア) A. The author was against having sweets when she was a child.
B. The author's husband allowed her to mix chocolate with the medicine for their children.
C. The author's husband took the medicine on a humid afternoon.
D. The author used to bake cookies and pies every day for dessert.
- (イ) A. Every time the author heard the pounding of a hammer, she felt irritated.
B. The author could not hear the annoying construction noise because a hammer was not being used.
C. The author appreciated receiving carrot cake from the local farmers.
D. Whenever the author heard the pounding of a hammer, she remembered the sweets from her neighbor.

4. 本文の内容と一致するように、次の英文の空所（ア）～（ウ）に入る最も適当なものをA～Dよりそれぞれ1つ選び、その記号をマークしなさい。

Having grown up in a home in which dessert was (ア) served after lunch and dinner, the author found, after coming to Japan, that in Japan sweets served after meals are not as (イ) as where she used to live, but sweets can (ウ) to keep the peace and smooth out relations among neighbors.

ア. A. regularly B. hardly C. occasionally D. sweetly

イ. A. rare B. common C. sweet D. delicious

ウ. A. be used effectively B. be an expensive way
C. be of little service D. be far from useful

Ⅲ 次の英文を読み、設問に答えなさい（*印の語は〔注〕を参照しなさい）。（23点）

Because land that can be used for dumps near big cities is growing ever more scarce, and because the environmental cost of using materials once and then throwing them away is growing steadily, governments have recently begun to pay more attention to recycling. Every recycled plastic milk jug or sheet of paper means less material in dumps, as well as less petroleum taken from the ground or ^(a) less energy used to convert wood pulp to paper.

But recycling is not as easy as it sounds. A great deal of science and engineering has to be done before even the simplest materials can be reused. ^(A) In addition, the processes that have to take place to recover one kind of material are, in general, different from those needed to recover another. ^(B) The recycling of different kinds of plastics, for example, requires different kinds of chemical reactions, and processes that work for plastic soft-drink bottles will not necessarily work for ketchup containers. ^(C) Furthermore, when a company has excessive waste paper, the paper can be stored in basements and collected and burned later. ^(D) As a result, each kind of material that is to be recycled poses its own unique problems to an engineer. ^(E)

Take white paper, for example. The average office worker generates about 250 pounds (113 kg) of high-grade paper waste per year, and many offices around the country have paper recycling programs. The first step in this process is simple: the paper is sorted, shredded, and ground up into a pulp and added to water to make a *slurry. Ink particles from typewriters and pens rise to the surface of the slurry and can be skimmed off, leaving a material that can be added to fresh pulp to make new paper. However, copying machines and laser printers work by melting bits of carbon mixed with *resins onto the paper. That sort of ink makes heavier particles when the paper is ground up, and those particles sink to the bottom along with the paper fibers. Until quite recently, such paper could ^(v) be recycled only into products such as cardboard or tissue paper, for which color

quality is not important.

The new technology for dealing with this problem involves the addition of substances called *surfactants to the pulp. The molecules in these substances bind to the heavier ink particles on one end and to bubbles of gas on the other. Once the molecules are attached to the ink, various gases are bubbled through the slurry. The surfactants and their load of ink rise to the surface with the bubbles and are skimmed off, leaving clean paper fibers for reuse.

A national recycling effort will involve hundreds of different processes such as this, each geared to a specific material, but each doing its part to make a coherent whole.

- [注] *slurry スラリー (泥状または、かゆ状の混合物)
*resins 樹脂, レジン *surfactants 界面活性剤

設 問

1. 下線部(あ)の less material の意味に最も近いものを A～D より 1 つ選び, その記号をマークしなさい。
A. not having enough material B. changing the type of material
C. lacking sufficient material D. reducing the amount of material
2. 第 2 段落の(A)～(E)の文には取り除いたほうがよい余計な一文が含まれている。その文を(A)～(E)より 1 つ選び, その記号をマークしなさい。
3. 下線部(い)の such paper の意味に最も近いものを A～D より 1 つ選び, その記号をマークしなさい。
A. paper that turned white
B. paper that came from cardboard
C. paper with the ink melted onto it
D. paper remaining in copying machines

4. 下線部(う)の geared to の意味に最も近いものを A～D より 1つ選び、その記号をマークしなさい。

- A. independent of B. made up of C. constructed by
D. designed for

5. 本文の内容と一致するように、次の英文の空所 (ア) ～ (キ) に入る最も適当なものを A～H よりそれぞれ 1つ選び、その記号をマークしなさい。

The author noted that (ア) for getting clean paper fibers from a slurry, depending on whether or not (イ) the paper. Laser printer ink and copying machine ink (ウ) that bind to the ink particles and to gas bubbles. If (エ) the paper, the process is simple: the ground-up paper is added to water and the ink particles (オ), where they are skimmed off. Before (カ) was introduced, the paper with ink melted onto it could only be recycled into products for which (キ).

- A. cardboard or tissue could not be used
B. ink has not been melted onto
C. color quality didn't matter
D. different methods are used
E. require the addition of substances
F. ink has been melted onto
G. naturally rise to the surface
H. the latest technology of adding surfactants

IV 次の英文を読み、設問に答えなさい（*印の語は〔注〕を参照しなさい）。(20点)

For centuries, farmers living near the ocean have been feeding their cows seaweed. Little did they realize that their animals' seaweed diet might be beneficial to the environment.

You might not be aware of what a huge impact domestic animals have on climate change. According to the United Nations Food and Agriculture Organization, livestock, like cows and sheep, emit nearly 15% of the greenhouse gases (ア) by human activity. That's more than the total production by all of the world's cars and airplanes (イ). Livestock digest their food with the help of stomach bacteria in a process called *enteric fermentation, the end result of which is *methane, a greenhouse gas that has, ton for ton, thirty times the disastrous impact of carbon dioxide. Of all types of livestock, cows produce the most of this damaging gas, with one single cow releasing as many as 500 liters each day.

Now, however, scientists believe they may have discovered a way to do something about it. Rob Kinley, of James Cook University in Australia, has been researching the effects of seaweed on the methane production of cows. By creating an artificial cow's stomach, he was able to conduct tests on more than 40 kinds of ocean plants before finding a red seaweed he calls "super seaweed."

"We started with 40 species and we very quickly (ウ) that down to one really remarkable species of red seaweed," Kinley said.

The results of his experiments suggested that cows eating the plant would release 99% less methane than other cows, providing a huge punch to emissions from agriculture. Kinley says red seaweed only needs to make up 2% of a cow's diet for it to work. Unfortunately, however, seaweed isn't a quick solution for our methane problem. We simply don't make enough. Scientists have (エ) that it would take some 6,000 hectares of seaweed farms to supply a mere 10 percent of Australia's 29 million cattle; to supply America's 92 million would take over 30

times more.

The farming industry is eager to get started, but Kinley says more testing is (オ) to determine the full range of benefits seaweed might offer. "The complete elimination of methane without negative impacts on the production of milk and beef," he says, "that's the best you can ever get."

[注] *enteric fermentation 腸内発酵 *methane メタン

設問

1. 本文の空所 (ア) ~ (オ) に入る最も適当なものをA~Gよりそれぞれ1つ選び、その記号をマークしなさい。
A. damaged B. caused C. estimated D. participated
E. combined F. narrowed G. needed
2. 下線部(あ)の文の意味に最も近いものをA~Dより1つ選び、その記号をマークしなさい。
A. Quite a few farmers near the ocean believed that feeding their cows seaweed could help the environment.
B. Farmers near the ocean were hardly aware that feeding their cows seaweed could be good for the environment.
C. Farmers near the ocean were afraid that feeding their cows seaweed could be harmful to the environment.
D. Farmers near the ocean noticed that feeding their cows seaweed could be a little helpful for the environment.

3. 下線部(い)と(う)の語が指すものをA～Dよりそれぞれ1つ選び、その記号をマークしなさい。

(い) which

- A. food given to livestock
- B. removing stomach bacteria
- C. a process called enteric fermentation
- D. a greenhouse gas

(う) it

- A. the problem of methane production by cows
- B. the problem of carbon dioxide emissions
- C. the harmful effects of methane compared to carbon dioxide
- D. the amount of food digested by cows

4. 下線部(え)の意味に最も近いものをA～Dより1つ選び、その記号をマークしなさい。

- A. having a damaging effect on agricultural productivity
- B. dramatically reducing agriculture's impact on climate change
- C. massively increasing profits for agriculture
- D. giving a great boost to food supply for cows

5. 本文の内容と一致するものをA～Dより1つ選び、その記号をマークしなさい。

- A. One cow can produce up to 500 liters of carbon dioxide a day, which is more than any other kind of livestock.
- B. Rob Kinley of James Cook University fed cows with 40 different kinds of ocean plants before he discovered the effects of red seaweed.
- C. According to Kinley, even if only a small proportion of a cow's diet is red seaweed, this can greatly reduce its methane production.
- D. At the moment, the farming industry is not interested in growing red seaweed because it isn't a quick solution for the methane problem.

V 次の1～5の英文の空所に入る最も適当なものをA～Dより1つ選び、その記号をマークしなさい。(5点)

1. In order to relax, he used to listen to music with his eyes _____.
A. to close B. closed C. have closed D. close

2. _____ you need any help with filling in the form, please do not hesitate to call me.
A. Must B. May C. Should D. Can

3. My mother asked me _____ I wanted to go shopping with her or not.
A. what B. when C. why D. whether

4. You were the last person _____ would be late for the concert.
A. I thought B. with who C. why you D. so that

5. He tries to avoid _____ his skin to the sun, following his doctor's advice.
A. expose B. to expose C. exposing D. being exposed

VI 次の1～3の英文が日本文の意味になるようにA～Fの語のうち5つを使って空所を補い、最も適当な文を完成させなさい。ただし、同じ語を繰り返して使用することはできない。答えは、空所（ア）（イ）に入る語の記号のみをマークしなさい。（12点）

1. 彼は正当な理由があるにもかかわらずその報酬を受け取ることは良心に反すると思っている。

He thinks it () (ア) his conscience to accept the () (イ) () there being a good reason.

- A. prohibits B. reward C. regardless D. goes E. of
F. against

2. その会社は優秀な人材を確保するためには労力も費用も惜しまないだろう。

The company will (ア) neither () (イ) expense () () top-rate talent.

- A. trouble B. spare C. acquire D. nor E. to F. value

3. 彼の父の要請により、我々はそこで起こったことを徹底的に調査した。

At the () of his father, we conducted a (ア) () () (イ) happened there.

- A. every B. what C. inquiry D. request E. into
F. thorough

