明治大学
商学部

ま

英　語　問　題

はじめに，これを読むこと。

1. この問題用紙は，21 ページある。ただし，ページ番号のない**白紙**はページ数に含まない。
2. 解答用紙に印刷されている受験番号が正しいかどうか，受験票と照合し，確認すること。
3. 解答用紙の所定の欄に氏名を記入すること。
4. 解答は，すべて解答用紙の所定の欄にマークするか，または所定の欄に記入すること。
5. 解答は，必ず鉛筆またはシャープペンシル(いずれもHB・黒)で記入すること。
6. 解答の綴りは正しくはっきりと記すこと。薄い文字や小さな文字，判読の著しく困難な文字など，**あいまいな綴り方は不正解とする**。
7. 訂正は，消しゴムできれいに消し，消しくずを残さないこと。
8. 解答用紙は，絶対に汚したり，折り曲げたりしないこと。また所定のところ以外には，絶対に記入しないこと。
9. 問題に指定された数より多くマークしないこと。
10. **解答用紙は，持ち帰らないこと。**
11. この問題用紙は，必ず持ち帰ること。
12. 試験時間は，80 分である。
13. 解答をマークする場合の注意。

（マーク記入例）

良い例	悪　い　例
●	◉ ⊗ ○

〔Ⅰ〕 空欄に入る最も適切なものをそれぞれ１つ選び，その番号をマークしなさい。

(1) Although I returned from Europe five days ago, I am still feeling the (　　) of jet lag.

1 marks
2 impressions
3 symbols
4 effects

(2) Sara told me that she is really enjoying her new job. Her only (　　) is about the short lunch break. She has just thirty minutes to eat.

1 claim
2 complaint
3 praise
4 punch

(3) Tell me (　　) you know about the matter.

1 however
2 whatever
3 which
4 who

(4) I haven't been able to put this book down. It is so interesting that I have been reading it (　　) noon.

1 since
2 toward
3 until
4 past

(5) This watch belonged to my grandfather. It is old, but it still ( ) time well.

1 lasts

2 keeps

3 turns

4 makes

(6) Jason did his best to make Lucy ( ) the seriousness of the problem.

1 be understood

2 understanding

3 understand

4 understood

(7) Naturally, the new students are not ( ) the university's computer system, but they will learn how to use it during freshman orientation.

1 taking over

2 acquainted to

3 acted on

4 familiar with

(8) ( ) students study hard in preparation for these types of exams.

1 Most of

2 Almost

3 Almost all

4 Almost all of

(9) Katie tried to avoid ( ) by the teacher.

1 being scolded

2 scolding

3 to have scolded

4 having scolded

(10) Mr. Anderson was deeply concerned that ( ) of his students could pass the term-end exam last week.

1 few

2 scarce

3 little

4 part

〔Ⅱ〕 空欄に入る最も適切なものをそれぞれ１つ選び，その番号をマークしなさい。

(1) Teenager: Ma'am, are you all right?

Old woman: Yes, I think so.

Teenager: Let me help you up.

Old woman: Thank you. What happened?

Teenager: I saw the whole thing. There was a businessman in a hurry. It looked like he was running to catch his train. He wasn't even paying attention to the people around him. He was looking at his phone as he was running. He not only knocked you down, but he also ran into several other people.

Old woman: I hope he didn't hurt anyone else.

Teenager: You know, businessmen just aren't very considerate of others.

Old woman: But (　　).

1 he has no way to trust you

2 that certainly does not describe all of them

3 some people use a commuter pass

4 you do not need to watch where you are walking

(2) Henry: Did you have a good birthday, John?

John: I did, but there is just one thing.

Henry: What's that?

John: It's the gift my wife gave me. She does not share my taste in clothes. She bought a sweater for me that is, in my opinion, very ugly. And as usual when she buys clothes for me, it is one size too small. I know she means well, but I always end up returning or exchanging whatever clothing she gives me.

Henry: It's the thought that counts, you know.

John: I know, but maybe she should ( ). That would save us a lot of time and trouble.

1 let me be in charge of buying my own clothes
2 make me promise to never wear sweaters again
3 only buy clothes that are on sale
4 purchase clothes for the entire family

(3) Dr. Smith: The school year is almost finished. Have you graded your students' final English reports yet?

Dr. Jones: I am nearly finished, but some of my students forgot to put their names on their reports. That means that in some cases I have no idea which student wrote which report.

Dr. Smith: Wow. That certainly is a problem.

Dr. Jones: It is. A few years ago whenever this happened I could just match students' handwriting on the reports with the handwriting from their past homework assignments. It was then fairly easy to determine who wrote what, but I can't do that any more because now all of my students type their reports on their computers and then print them out.

Dr. Smith: So what are you going to do?

Dr. Jones: I'm not sure. I suppose I will have to contact those remaining students individually and ask them to ( ).

1 hand in their reports immediately
2 indicate which report is theirs
3 return to writing reports by hand
4 write their names more clearly

(4) Mother: I am really worried about Harry. All he does all day is read books.

Father: But surely that's a good thing. He needs to expand his mind, to realize his intellectual potential, to . . .

Mother: Wait a minute. Do you know what kind of books he is reading?

Father: Actually, I can't tell because he always uses a book cover. But I assumed (　　).

Mother: You assumed wrong. He is reading manga. I found a box with over one hundred under his bed.

Father: Oh, no! I thought he had lost interest in manga. He really needs to study or else he won't get into a good university. Let's go talk to him!

1 everyone knew the truth from the beginning
2 he was avoiding his schoolwork
3 it was time for him to go to bed
4 they must have some connection to his studies

(5) In the late 1940s the famous Albert Einstein was once traveling by train when the train conductor came down the aisle, punching the ticket of every passenger. When he came to Einstein, who often rode the train when traveling to visit nearby universities, Einstein reached into his vest pocket to show him his ticket but it was not there. He checked his pants pockets and then his briefcase, but there was still no ticket.

The conductor looked at the worried Einstein and said, "Dr. Einstein, I know who you are. I recognize you. In fact, everyone on this train knows who you are. I'm sure you bought a ticket. Don't worry about it." Einstein nodded appreciatively.

The conductor then continued down the aisle, punching more passenger tickets. Before moving to the next car, he turned around and saw the great physicist down on his hands and knees looking around the floor under his seat. The conductor rushed back and said, "Dr. Einstein, don't worry. I know who you are. You don't have to look for your ticket. You don't need to show it to me. I'm sure you bought one."

Einstein, still on his hands and knees, looked up at the conductor and said, "Young man, I, too, know who I am. What I don't know is ( ). That is why I am searching for my ticket."

1 how you can believe that I am a famous person
2 where I am supposed to get off the train today
3 whether or not you are really a train conductor
4 why I am getting myself dirty on this floor

〔Ⅲ〕 次の英文を読み，設問に答えなさい。

Do you remember seeing clouds from an airplane for the first time? Even if that first time was as an adult, you were probably struck by (1) the appearance of solidity. (A) from above, a cloudscape looks like a landscape — it looks like a place where things might live.

At school we learn that clouds aren't solid: they are just made of water vapor. And when the amount of water in a cloud (B) a certain point, it becomes too heavy to stay suspended in the air and falls down: it rains. The process, we are told, is a physical one. Condensation, cooling, saturation, precipitation.

How thrilling, then, to learn that the world is a more complicated place. To a whole range of organisms, clouds *are* places to live. To microbes[1], clouds are not just landscapes: they are ecosystems. Even more than that, precipitation — the act of rain and snow falling out of the sky — seems to be biological. Rain, you could say, is bacteria's way of getting out of the sky.

Kim Prather at the University of California, San Diego, studies these aerial ecosystems (2). She and her team fly in special research planes over the Pacific Ocean off the west coast of the United States. You may have seen biologists chasing butterflies and dragonflies with insect nets; what Prather is doing is the equivalent in a cloud. Her team takes samples of clouds and analyzes the content.

"We're seeing lots of biological components such as bacteria and molecules associated with microbial life," she says.

It's not the first time microbes have been found to be present in the atmosphere. A few years ago I interviewed Brent Christner of Louisiana State University, Baton Rouge. He had collected fresh snow from diverse locations in the United States, France, and Antarctica, and in all samples he found evidence that bacteria were not only present, but that they had also been influential in actually causing the snow to fall in the first place.

(3) How (　　) can that be?

Rain falls when something "seeds" the development of ice crystals in a cloud. Tiny particles cause ice to form and grow, and eventually it will fall. If it warms up enough as it falls, it will be rain. Sometimes ice crystals themselves are the catalyst for growth, and sometimes ice grows around tiny particles of dust.

Prather's group is directly (　C　) from the clouds over the Pacific to find out more details. Last week she presented her work at the American Chemical Society meeting in San Francisco.

Her starting point is the understanding that the atmosphere is full of dust and other particles, and that bacteria, algae[2], and fungi[3] live there too. Understanding the exact chemical makeup of the dust and the biological molecules on it helps scientists understand and predict how rain and snow fall from clouds. Knowing how, when, and how much is crucial for farmers, and for us all.

"The standard belief is the more ice you have in a cloud, the more likely you will get precipitation out of it," Prather says. "Our goal is to catch the first stages of ice forming and find out (4) what exactly the chemical constituents are that the ice is forming on."

What they have found is that the ice crystals have biological markers. They have proteins that can't be derived from dust particles in the air, but that are signatures of bacterial life in the atmosphere.

"We've learned that not all of the particles in the air at high altitudes have the same influence on clouds. We're starting to think that these differences contribute to how rain gets distributed," says Prather.

Most of the dust that Prather's team detected in clouds and precipitation originates in deserts in Asia. It gets swept westward by the jet stream, where it (　D　) with other airborne particles, including smoke and spray from the sea. Prather says that each of these types of particles — collectively known as aerosols — has its own distinctive impact on clouds.

But living on the particles are varieties of microbes.

The microbes make proteins, which connect water molecules together. The water forms a pattern similar to an ice crystal's lattice[4], which encourages ice to form. Ice crystals then grow in the normal way, and rain — or snow — falls.

A long-term goal of Prather's research is to improve cloud-seeding technology. This was most publicly used just before the Beijing Olympics in 2008 to ensure clear skies for the opening ceremony. But the techniques are not always reliable. "Mother Nature has developed very effective ways to seed clouds, so perhaps we could take some tips (5) from her," says Prather.

All organisms need to be able to disperse and find new areas to live. After staying alive and reproducing, dispersal is the third most important item on any organism's to-do list (6). It seems a range of organisms have found ways to manipulate weather systems to help them do that.

There are occasionally reports of masses of frogs raining out of the sky, or of fish falling in the desert. In Kerala, in southern India, there was an infamous occurrence of red rain, which had some people speculating that alien life forms had rained down from space when a meteor exploded in the atmosphere. It turned out to be red algae that had been swept into the air after a storm, just like when frogs and fish are swept up on freak air currents.

But the finding that there are organisms that live for at least part of their life cycle in the atmosphere is as wonderful as stories about magical creatures that live in the clouds, and it is all the more impressive for being true (7).

語注

1 microbes：微生物

2 algae：藻類

3 fungi：菌類

4 lattice：格子

問 1　空欄(　A　)～(　D　)には，以下の動詞のいずれかが入る。それぞれに最も適切なものを選び，必要な場合は文意が通るように語形を変えて，解答欄に 1 語で記しなさい。

mix　　reach　　sample　　see

問 2　下線部(1)～(7)について，最も適切なものをそれぞれ 1 つ選び，その番号をマークしなさい。

(1)　この struck by とは

1　impressed by

2　disturbed by

3　pleased by

4　beaten by

(2)　この these aerial ecosystems とは

1　the fuel efficiency of aircraft flying over the Pacific Ocean

2　the system of special research planes flying through clouds

3　the prevention and control of air pollution off the west coast of the United States

4　the biological community composed of the organisms found in clouds

(3)　(　　)内に入れて文意が通る語句は次のうちどれか

1　on earth

2　on the ground

3　on the star

4　on heaven

(4) この what exactly the chemical constituents are that the ice is forming on が示すものは

1 the very chemical reactions that occur at the earliest stage of ice formation

2 the precise chemical components which cause ice to form

3 the great contribution that chemists make to forming ice

4 the famous chemical institute which can develop ice crystals

(5) この tips と最も意味が近いのは

1 words of encouragement

2 grains of paradise

3 pieces of advice

4 drops of water

(6) If "dispersal is the third most important item on any organism's to-do list," what is something more important for any life form?

1 manipulating weather systems

2 finding new areas to live in

3 staying alive

4 ranging

(7) この it is all the more impressive for being true とは

1 even though it is true we are hardly surprised

2 because it is true it is really incredible

3 it would be surprising if it were true

4 all things that are true are amazing

問 3　以下の各群について，本文の内容と一致するものを 1 つ選び，その番号をマークしなさい。

A群

1　Prather and her colleagues have been trying to locate butterflies in clouds.

2　Particles found in the air, such as smoke and spray, are no longer called aerosols.

3　A researcher named Christner found that snow from Antarctica is free of bacteria.

4　The results of Prather's research might benefit farmers in the future.

B群

1　Particles found high in the air can affect clouds differently.

2　Prather and her colleagues are working to increase their protein content.

3　Making clear and clean skies requires microbes that are linked together.

4　Alien creatures cause animals such as fish and frogs to fall from the sky.

〔Ⅳ〕 次の英文を読み，設問に答えなさい。

Humans are far（ あ ）the only species that uses technology. One example is the Asian elephant, which repels flies by waving a branch in its trunk. The elephant does not wave（ い ）branch it finds. It modifies the branch by removing side branches or shortening the stem. Sometimes it strips bark from a vine and uses that instead.

This is the essential difference between tools and, say, rabbit warrens[1] or spider webs. Elephants make their tools by manipulating (or handling) things they（ う ）out specifically. They do not only use things they happen to find, or only dig holes, or only restrict themselves to bodily secretions[2].

Branch breaking by elephants is simple compared to the technology used by birds. Birds don't just break branches. They fashion(ア) homes out of twigs, grass, and other materials. These homes can be very sophisticated. There is a species of thorn bird that builds nests up to two meters long with several separate chambers that can survive a fall of many meters with its eggs intact. These nests are also（ A ）with thorns to deter predators and have concealed(イ) viewing holes so the birds inside can see danger approaching.

The technology used by beavers is perhaps the greatest non-human technology of all. Beavers build homes called "lodges," create dams, and construct canals to transport food and building materials(1).

All this technology has the same purpose: survival, or more specifically, adaptation for survival. Species use tools to help them adapt to challenging environments without having to wait for evolution to change their bodies. Thorn birds, for example, are a type of bird called a passerine. Passerine nests are more complex than those of other birds and can be constructed wherever the bird（ B ）. This helps passerines multiply in changing environments, most notably in the new world after the mass extinction of dinosaurs and most other species 65 million years ago. The nests contributed to the passerines' rapid sub-

division into many different species and, even though the passerines emerged (ウ) much later than other birds, about half of all bird species alive today are passerines. Why can't other birds build nests like passerines? Because passerine feet have an independently mobile rear toe, somewhat similar to a human thumb, which enables the bird to grasp small branches and so build nests.

Which came first? Toe or nest? The two developed together, with a small change in one (C) to a small change in the other until all the changes added up to a large difference in both the birds' feet and nests.

Because humans are the most radical tool users, our bodies have undergone the most radical changes because of our tools. The prime (2) example is the hand axe: a perfectly symmetrical teardrop of flaked shaped rock called flint that early humans, predecessors of *homo sapiens*, used as an all-purpose tool for five or more million years.

The hand axe looks like a big tooth. It was used for fighting, feeding, and fabricating more hand axes. The skeletons of hand axe-using humans show something interesting: over long evolutionary time scales, they evolved smaller teeth and weaker jaws, relative (え) other primates[3] and earlier humans. The hand axe removed the need for big teeth and was superior to them. It could be replaced if lost or broken, sharpened when dull, and you could fight with it without (D) your head and neck within biting range of your opponent. Smaller teeth and weaker jaws brought about big biological benefits: they left space in the skull for more brain cells, and changed the weight and balance of the head so that it became easier to stand erect. Hand axes changed our bodies, and also the course of human evolution. They are the reason we were transformed into brainy animals that walk on two legs.

What followed was a rapid growth of technology that led to us exploring, and dominating, the entire planet. If you hear someone talking about "technology" being "bad," ask them to try this thought experiment:

Imagine you are cast away, naked and without property on a wild island, and you are not capable of creating tools. Unless you can find natural shelter, drinkable water, and food you can chew and digest with your teeth and jaw alone, you will die within days.

Next, imagine having children as well. You will need enough of all of the above (3) to keep your children alive from pregnancy through puberty[4].

Then, imagine doing all these things in competition with other people and species. How long could you survive? How long could the human race survive?

The answer is easy: most of us would die within a few days, and the few that remain would last only weeks or months. Without tools, the human race would become extinct within a year.

This (4) may come as a shock to those people who see themselves as "all natural" or "anti-technology." Typically, their first objection to the thought experiment is that, if any of this were true, then we would not be here, because our ancestors would have died. If they could survive without tools, why can't we? The answer to that is simple (お) surprising: our pre-technology ancestors were from a different species. They had big teeth, strong jaws, small brains, moved mainly on four limbs, and were covered in fur. After them came our more recent ancestors, humans but not *homo sapiens*, that used primitive tools that eventually changed their bodies. Those ancestors gradually evolved into us.

Our bodies are not designed to survive without the aid of technology. Without technology, we are birds without nests, beavers without dams. We cannot live without tools. We never have.

Once we became *homo sapiens sapiens* — not just tool-using humans but creative humans — we started developing and sharing tools and ideas as well as genes, and the relationship between surviving and creating intensified quickly. We started adapting our technology in our lifetime rather than waiting for our

bodies to adapt in evolutionary time. We became the species that responds to environmental pressures with new tools, not new bodies. For example, when we overpopulated land near drinkable water, we invented bottles to transport water from distant springs, then pumps and dams, then we learned how to treat waste water and irrigate deserts. We did not reproduce less, change our bodies to need less water, or evolve humps.

Our tools and our bodies are one. We do not evolve, we create. And, because we cannot adapt without creation, if we stop creating, we stop existing.

語注

1 rabbit warrens：ウサギの巣
2 secretions：分泌物
3 primates：霊長目の動物
4 puberty：思春期

問 1 空欄(　あ　)～(　お　)に入る最も適切なものを 1 つずつ選び，その番号をマークしなさい。

(あ)	1	by	2	to	3	from	4	away
(い)	1	single	2	any	3	all	4	no
(う)	1	call	2	give	3	leave	4	seek
(え)	1	against	2	with	3	to	4	from
(お)	1	despite	2	if	3	since	4	besides

問 2 空欄(　A　)～(　D　)には，以下の動詞のいずれかが入る。それぞれに最も適切なものを選び，必要な場合は文意が通るように語形を変えて，解答欄に 1 語で記しなさい。

choose　　lead　　line　　put

問 3　下線部(ア)～(ウ)の本文中で使われている意味に最も近いものをそれぞれ１つ選び，その番号をマークしなさい。

(ア)　1　upgrade　　2　construct
　　3　represent　　4　interpret

(イ)　1　secured　　2　hidden
　　3　brilliant　　4　identical

(ウ)　1　came about　　2　pushed forward
　　3　turned on　　4　moved out

問 4　下線部(1)～(4)について，最も適切なものをそれぞれ１つ選び，その番号をマークしなさい。

(1)　Overall, the examples of the greatness of beaver technology illustrate how such technology _____.

1　automatically supports the peaceful passage of other wildlife through beaver territory

2　successfully makes homes with several separate chambers unnecessary

3　purposefully helps other animals transport their own food and building materials

4　fundamentally transforms the natural environment where beavers live

(2) この prime とは

1 particular　2 pure　3 principal　4 precise

(3) この all of the above とは

1 chewing ability good enough to keep you alive
2 each child you have, from the youngest to the oldest
3 everything that comes from the sky
4 food, water, and housing readily usable by humans

(4) この This とは

1 the idea that humans would not last long if they lost access to technology
2 the statement that indicates that human lifespans cannot be accurately calculated
3 the conclusion that states technology will keep only a few humans alive
4 the belief that most humans will be dead one year from today's date

問 5　以下の各群について，本文の内容と一致するものを 1 つ選び，その番号をマークしなさい。

A群

1　A hand axe could be made by using another hand axe that had already been made.

2　Hand axes that were used by early humans came in various shapes and sizes.

3　Hand axes made by early humans were used only once before being thrown away.

4　The hand axe was a tool used by early humans to remove big teeth that were no longer needed.

B群

1　Human mastery of the planet ended with the creation of bottle technology.

2　Thought experiments show why living naked on wild islands is a good idea.

3　Early humans covered in fur eventually developed stronger jaws.

4　Early humans with big teeth and strong jaws nevertheless developed human technology.