北海道大学　医学部　歯学部　一般前期　H—24　Ⓐ

英　語

12：30～14：00

解　答　上　の　注　意

1. 試験開始の合図があるまで，この問題紙を開いてはならない。
2. 問題紙は 14 ページある。
3. 解答用紙は［解答用紙番号 英語 0—1］と［解答用紙番号 英語 0—2］の 2 枚である。
4. 解答用紙は 2 枚とも必ず提出せよ。
5. **受験番号および座席番号（上下 2 箇所）は，監督員の指示に従って，すべての解答用紙の指定された箇所に必ず記入せよ。**
6. 解答はすべて解答用紙の指定された欄に記入せよ。
7. 必要以外のことを解答用紙に書いてはならない。
8. 問題紙の余白は下書きに使用してもさしつかえない。

1 次の英文を読んで，設問に答えなさい。

In many parts of the world — Western Europe, North America and Japan — there have recently been massive losses in the honeybee population. In Britain, for example, 30% of the honeybee population died in the winter of 2007. That's nearly 80, 000 colonies: in one colony, there will be at least 20, 000 bees, so we're talking about a large number. As a result of these deaths, there will be less honey available for us to buy, and honey will become more expensive. But why should you care? You might not even like honey, and you might not be bothered if there were no bees in the world. However, expensive honey is not the only problem that results from the decline in the honeybee population.

At root, all land mammals — and a large proportion of birds — depend on plants for food. Humans eat plants, but they also eat animals that eat the plants. If you eat chicken, you are also indirectly eating the corn and other grains that the chicken ate. If there are no plants, we have only fish to eat, and it is a widely known fact that fish stocks are diminishing rapidly across the world. Plants such as blueberries, for instance, depend on pollination to reproduce. Because of pollination, insects help grow one third of everything that humans eat: nuts, vegetables and fruit. Humans use honeybees to do most of this work (1), placing hives in areas where plants are flowering. 90% of the food we consume comes from 100 crop species. 71 of these species are pollinated by bees. The scale of the work done by these creatures is breathtaking: according to recent estimates, pollination by bees is worth $14 billion to the US economy each year; that's just over ¥1 trillion. Honeybees don't get rewarded for their work; (a), humans make it increasingly difficult for them to live.

Due to Colony Collapse Disorder (CCD), there is less pollination by honeybees, therefore fewer crops, so there will be more frequent and severe

food shortages. When a country cannot produce enough food itself, it can import food from abroad. But in this situation, importing food is no solution, because CCD is a worldwide problem. Famine is a real concern, especially when we consider that the world human population may be as high as 8 or 9 billion by the year 2050.

What exactly is causing the number of honeybees to decline? The problem is that scientists don't know for certain. Possible causes are changing climate conditions (especially more wet weather), air pollution (which interferes with the honeybees' sense of smell), and a parasite that kills worker bees. Because bees fly, the parasite is carried on their body, so it is able to travel around the world. One certain cause of CCD is the increased use of pesticides in farming.(2) Pesticides make the honeybees forgetful, and they also affect the ways in which they communicate, so either they cannot remember where nectar-producing plants are, or they are unable to inform other bees where to find them. But banning pesticides is very difficult, since they assist in the successful growth of other crops. Banning pesticides might create more food shortages, and we cannot simply revert to a world without agricultural chemicals. Furthermore, reducing air pollution is not easy, especially in quickly developing countries, where the emphasis is on economic rather than environmental welfare.(3) It seems that a lot of research is needed on this issue in order to create pesticides that are not harmful to honeybees. We simply cannot afford to lose the honeybee and all the hard work it does for us. We must investigate all possible causes of this problem and formulate creative solutions, otherwise in the next half-century, a large part of the world will become very hungry indeed.

問 1 下線部(1)は文中のどの単語を指しているのか，最も適切な英語1語を記しなさい。

問 2　空欄(a)に入る最も適切な 1 語を次の(A)～(D)から選び，記号で答えなさい。

(A) so　　(B) otherwise　　(C) however　　(D) rather

問 3　下線部(2)が honeybees に与える影響を，具体例 2 点に触れながら簡潔に日本語で説明しなさい。

問 4　下線部(3)を日本語に訳しなさい。

問 5　本文の内容と合致するものを次の(A)～(H)から 3 つ選び，記号で答えなさい。

(A) Banning pesticides is the only way to stop CCD.

(B) Air pollution is one of the factors that affect the honeybee population.

(C) Eating more fish is one solution to the CCD problem.

(D) CCD affects only less developed countries.

(E) We will be facing the prospect of famine unless we do something about CCD.

(F) We could have anticipated the problem if we had been more concerned about climate change.

(G) Scientists are not sure what is killing the honeybees.

(H) Farmers should grow more crops to counter the effects of CCD.

問題は次ページに続く

2 次の英文を読んで，設問に答えなさい。

We often hear about the need to find alternative(1) energy sources in order to protect our planet from the harmful effects of climate change. Wind, wave and solar energy are all possible sources, but most of the electricity produced from non-fossil fuel sources comes from nuclear power. Nuclear energy may be 'clean', that is, it does not produce as much carbon dioxide or other greenhouse gases as fossil fuel energy plants, but it is not a permanent energy solution. Like coal and oil, the amount of uranium on earth is limited, and nuclear energy may only be a viable source of energy for the next 100 years. The effects of nuclear energy production, however, are more long-lasting, and potentially more problematic, than any damage that has resulted or could result from fossil fuel-induced climate change: even though building design and technology have improved, nuclear power plants are still susceptible to accidents that can damage whole regions, even countries; they also produce waste that remains harmful to the biosphere for centuries.

In its 57-year history, the nuclear energy industry has so far generated a minimum of 300, 000 tons of high-level nuclear waste. In order to be safe, this waste must be kept away from living creatures for at least 100, 000 years. How do we dispose of this material safely? An example from Finland demonstrates some of the problems we face. The Finnish government is currently building a deep geological repository, a 5km-long tunnel that winds its way down 400m into the bedrock to a network of storage vaults. The location is called 'Onkalo'. It will be ready to store waste in 2020, and then sealed in 2120. The Finnish government intends that Onkalo will remain closed for 100, 000 years.

That's a difficult prospect for architects. How do you design something that's meant to last for such a long time? In 100, 000 years, there will be little or no trace of our present civilization. Some of the oldest buildings on earth,

the Egyptian pyramids, have been around only for about 3, 000 years. Onkalo presents a difficult conceptual problem for humans: anatomically modern humans have been in existence for around 200, 000 years, but think how different the first humans would have been. How would you communicate with them? How could you make them understand the world in which you live? What will humans be like in 100, 000 years?

Since the material to be stored is so dangerous, the designers of Onkalo — and all nuclear nations that must build these structures, at great expense — have to think about these issues. How can we prevent humans from trying to excavate the site in the future, causing massive damage to their species and their environment? The designers could leave a warning sign, something like 'This is a very dangerous place. Stay away. Do not try to enter.' But how can we communicate with humans so far in the future? Which language would we use? English? Chinese? It's probable that neither of these languages will exist in the year 102012. Language itself might have become obsolete (ア) by that time. How about using a picture? If so, what would it be?

Alternatively, should we not leave any markers about the site's dangers, and simply hope that Onkalo remains undiscovered? We must consider whether leaving a marker, even a warning, would make humans less or more curious to find out what's there. We can think about the pyramids again. It's clear that these were designed as burial structures, houses for the dead. They were not intended to be opened and explored, but humans did so (2) anyway. But even after around 200 years of excavation, our knowledge of the pyramids' purpose is still incomplete, as is our understanding of the Egyptian hieroglyphic system of writing. Humans are by nature inquisitive (イ): if we see something we don't understand, we have a need to find out, even if our investigations are damaging towards ourselves and the environment. But the (3) destruction that could result if Onkalo were excavated in the future is much more extreme than simply rejecting the wishes of the dead or disrespecting

their beliefs. In fact, if we don't think of the right ways to manage the problem, there may not be any humans in the future to judge whether what we did was right or wrong.

問 1　下線部(1)は何に対する alternative を指していますか。文中から英語 2 語からなるフレーズを抜き出して答えなさい。

問 2　原子力発電の問題点を第一段落から 3 つ抜き出し，簡潔な日本語で述べなさい。

問 3　下線部(2)は具体的にどのような内容を指しているのか，以下の英文を完成させて答えなさい。

Humans _____.

問 4　下線部(ア)と(イ)の英単語を置き換えるのに適切と考えられる別の英単語をそれぞれの選択肢(A)～(D)の中から 1 つずつ選び，記号で答えなさい。

(ア) obsolete:

(A) disused　(B) diversified　(C) standardized　(D) visualized

(イ) inquisitive:

(A) cautious　(B) curious　(C) destructive　(D) diligent

問 5　下線部(3)を日本語に訳しなさい。

問 6　この文章のタイトルとしてふさわしいものを次の(A)～(F)の中から2つ選び，記号で答えなさい。

(A) How We Can Prevent a Nuclear Plant Accident

(B) Learning from a Finnish Failure

(C) Managing the Nuclear Legacy

(D) Prospects of Post-Nuclear Energy Sources

(E) Will Nuclear Waste Outlive Us?

(F) The World in the Year 102012

3 Read the following passage:

What is noise? Noise is unwanted or unpleasant sound. When noise becomes irritating or harmful, it is considered pollution. Two prominent sources of noise pollution are construction and transportation. Heavy equipment such as cranes and trucks used to build roads, houses, and skyscrapers can be very loud. Likewise, passing cars, trains, and airplanes generate a lot of sound.

Noise pollution is an unfortunate byproduct of civilization. While people may become accustomed to the troublesome sounds of modern life, they should not ignore their harmful effects. Noise pollution is hazardous to health in general. Loud noise can disrupt sleep, increase stress, and raise blood pressure. Noise pollution can also inflict psychological damage: people exposed to loud sounds can become irritable and aggressive.

These problems seem likely to worsen. The World Health Organization estimates that 20% of Europeans experience noise levels at night potentially harmful to health. The United Nations reported that in 2008, more than half the world lived in urban areas, and the number has continued to rise. This demographic trend is cause for concern because city residents will encounter increasing noise pollution as transportation systems expand and construction increases.

At present, noise pollution may not seem as serious a problem as global warming or air and water pollution. Nevertheless, if the situation remains unchanged, noise pollution will continue to disrupt society, damage human health and make our daily lives less comfortable.

Answer questions A through C in English. You may use words and ideas from the text, but you must not copy complete sentences.

Question A

In your own words, define in one sentence what noise pollution is.

Question B

Complete the following sentence about how noise pollution affects our health.

Because of noise pollution, people _____

_____.

Question C

Noise is an unavoidable part of modern life and cannot be reduced. Do you agree? State your opinion in 70 to 100 words. Include examples or reasons to support your opinion.

4 以下の英文〔Ⅰ〕は二人の友人による対話で，英文〔Ⅱ〕はその内容要約です。

英文〔Ⅰ〕との内容が合致するように，英文〔Ⅱ〕の(1)～(12)の空欄に入る最も適切な語を下の枠の中からそれぞれ１つずつ選び，記号で答えなさい。

〔Ⅰ〕

Masanori(M): I hate election time. I was woken up this morning by one of those election cars with political slogans blasting out of its loudspeakers. I would not mind so much if politicians always kept their promises, but they offer so much and so loudly, yet they deliver so little.

Naoko(N): I find it best not to expect too much from politicians, then you won't be disappointed. Nevertheless, I always vote. My great-grandmother is still alive. She's 95 years old now, and when I was very little she told me how happy she was on the day when she was first allowed to vote. Women only got the vote in 1947, you know. When she was my age she was not allowed to vote, so you see, my great-grandmother would not forgive me if I did not vote.

M: I can see that. My opinion is not backed up by a similarly interesting story. I just believe all citizens should take responsibility for the direction their country goes in, so we should all vote. Do you know who you'll vote for?

N: Yes, but it's a secret! How about you?

M: I haven't had a chance to read all the manifestos properly yet. Only then will I make a final decision. However, I am interested by the proposal to make abstention illegal in some of the parties' manifestos.

N: No, I disagree with that completely. You can't force people to vote.

M: They do in Australia. Why not in Japan? I think it would work really well here. When you are registered as a voter you get a letter saying: "People who fail to vote will be required to pay ¥10, 000." Then many more people would vote.

N: No, that's not a good idea. Why should people be forced to vote if there is nobody whose policies they like? Abstention is a perfectly legitimate way to express your political opinions. I'm not worried about low voter turnout. If 40% of people don't want to vote, then that's their democratic right.

M: Well, I think people ought to vote. With political rights come political responsibilities, and voting is one of the responsibilities.

N: I, like you, would like to see higher turnout, but people should be encouraged, not forced. If you were going to encourage people to vote, how would you do it?

M: How about this then? Everyone who votes gets a lottery ticket, and after polling stations have closed and while the votes are being counted they have an election night lottery.

N: Get real! That would just devalue election day. I can just imagine the newspaper headlines: "Politician loses seat, wins ¥100,000 in the lottery!" It's crazy.

M: Why? People on election day would be thinking, "I can vote and have the chance of winning the jackpot, or I can do nothing and have no voice and no chance of winning some money." It makes voting an easy choice.

N: Mm, I can see what you are getting at.

M: And if election day became sort of like New Year's Eve, when everyone sits around the table with their End of Year Jumbo lottery tickets, we could generate family pressure to vote, too.

N: I can see how it might encourage more people to vote, but I am still not completely convinced that we want to turn an event like an election into a national lottery.

〔Ⅱ〕

The conversation is between two young voters in Japan, Masanori and Naoko. Both are (1) about politicians but have plans to vote in the next election. They say that despite the frequent promises made and then (2) by politicians, it is their duty to have their say on the future of the nation. However, while Naoko has (3) made up her mind on who to vote for, Masanori is still (4). Furthermore, their opinions (5) on the key issue of compulsory voting. Masanori thinks that maximum turnout would be ensured by giving fines to people who do not (6) on election day. Naoko responds by saying that people should not be (7) to vote for a candidate if there is no person whose manifesto they support. But in an era when young people feel detached from politics, they discuss what could be done to (8) more people to vote. Masanori raises the idea of running a national lottery on election day, when going out to vote (9) you a lottery ticket. While the election results are being calculated, he says, there could be a live draw on television. Initially, Naoko (10) the suggestion, but the more she thinks about it the more she (11) Masanori's point. Nevertheless she remains skeptical, although she concedes that such (12) might increase the voting rate.

(A)	undecided	(B)	force	(C)	earns	(D)	register
(E)	complimentary	(F)	critical	(G)	vote	(H)	persuade
(I)	recommends	(J)	not	(K)	broken	(L)	object
(M)	dismiss	(N)	already	(O)	incentives	(P)	considered
(Q)	made	(R)	encouraged	(S)	differ	(T)	sees
(U)	receives	(V)	torn	(W)	rejects	(X)	ticket

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H—24 Ⓐ

受験番号	A							

解答用紙番号
英語0—1

11—0—1

採点記入欄

英語解答用紙

座席番号			

（下の座席番号欄にも記入すること。）

注意
※採点記入欄には何も記入しないこと。

解答用紙は，全部で2枚である。

1

問 1 _____　　問 2 [　　]

問 3 _____

_____

問 4 _____

_____

問 5 [　　][　　][　　]（順不同）

1 [　　]
2 [　　]
3 [　　]
4 [　　]
5 [　　]

※採点欄 [　　]

2

問 1 _____

問 2 (1) _____

(2) _____

(3) _____

問 3 Humans _____

問 4 (ア) [　　]　(イ) [　　]

問 5 _____

_____

_____

問 6 [　　][　　]（順不同）

1 [　　]
2 [　　]
3 [　　]
4 [　　]
5 [　　]
6 [　　]

※採点欄 [　　]

H—24 Ⓐ

選抜区分
A

注意
1. この欄の座席番号も必ず記入すること。
2. ※採点表には何も記入しないこと。

解答用紙番号
英語0—1

11—0—1

座席番号		

10　11　12

※採点表	
問題1	問題2
0	0

13　14　15　16　17　18

H—24 Ⓐ

受験番号	A							

解答用紙番号
英語 0 — 2

11—0—2

採点記入欄

英語解答用紙

座席番号			

（下の座席番号欄にも記入すること。）

注意
※採点記入欄には何も記入しないこと。

3

A _____

_____

A ☐

B Because of noise pollution, people _____

_____

B ☐

C _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

C ☐

※採点欄

4

1	2	3	4	5	6
7	8	9	10	11	12

1～6 ☐

7～12 ☐

※採点欄

選抜区分 A

H—24 Ⓐ

注意
1. この欄の座席番号も必ず記入すること。
2. ※採点表には何も記入しないこと。

解答用紙番号
英語 0 — 2

11—0—2

座席番号		

10 11 12

※採点表	
問題 3	問題 4
0	0

13 14 15 16 17 18