

1 次は、高校生の洋子 (Yoko)、オーストラリアからの留学生のトム (Tom)、原先生 (Mr. Hara) の3人が交わした会話の一部です。会話文を読んで、あとの問いに答えなさい。

Yoko: Hi, Tom. Look at this picture. Do you know what kind of penguins they are?

Tom: They are emperor penguins, right?

Yoko: Yes, they are. 《 ㉔ 》

Tom: Well, I hear they live in the Antarctic. Is that right?

Yoko: Yes.

Tom: I think they are famous. There are some other kinds of penguins living in warmer places. In the past, I saw some penguins in Australia.

Mr. Hara: Hello, Yoko and Tom. What are you talking about?

Tom: Yoko is showing me a picture of emperor penguins.

Yoko: I'm reading some books about the Antarctic, and I found this picture in one of the books. Emperor penguins are the largest penguins. ㉕

Mr. Hara: What other things do you know about them, Yoko?

Yoko: Well, they can swim fast. And male emperor penguins take care of the eggs for two months during the winter. ㉖

Tom: Wow! That's great. I think it is very cold in the winter in the Antarctic. How cold is it there?

Yoko: The coldest temperature in the Antarctic is  $-93.2^{\circ}\text{C}$ .

Tom: Oh, really?

Mr. Hara: Some people think it's the coldest place on the earth. Do you know there are some Japanese research stations in such a cold place?

Yoko: Yes. The first Japanese research station in the Antarctic was built in 1957. It is called *Syowa Station*, and now there are four Japanese research stations there. ㉗

Mr. Hara: That's right.

Tom: What are the people at the Japanese research stations studying?

Mr. Hara: ㉘ For example, the ice in the Antarctic.

Tom: Really? Are they studying the ice?

Mr. Hara: Yes.

Tom: 《 ㉙ 》

Mr. Hara: They can learn many things about the past. The continent of the Antarctic is covered with very thick ice. The lower layers of ice are older than the upper layers of ice. In each layer of ice, air and many other things are trapped. They are as old as the ice.

Tom: I see. That's really interesting. How old are the lower layers of ice?

Mr. Hara: Well, in 2007, the people at the Japanese research stations drilled through the layers of ice and got very old ice. The oldest ice they got is about 720,000 years old. The ice and the things trapped in that ice can tell them about the climate of 720,000 years ago. ㉚

Yoko: Oh, I see. We can learn about the changes in the world's climate of the past by studying many different layers of ice.

Mr. Hara: Right. For example, about 140,000 years ago, the climate was colder than today. Then about 130,000 years ago, the climate became warmer.

Tom: I see. ㉛ I want to know other things about the Antarctic.

Yoko: Well, ㉜ I found an interesting thing about the Antarctic on the Internet. Some people say they can find some changes in the environment in the Antarctic now. For example, temperatures have become higher and ice has decreased on some parts of the continent. I think we may learn something about the world's climate of the future by studying the changes in the environment in the Antarctic.

Mr. Hara: Yoko and Tom, do you know there is a science contest for students who are interested in the Antarctic and the Arctic?

Yoko: No, but I think that's very interesting.

コウテイペンギンの  
写真

emperor penguins  
(コウテイペンギン)

昭和基地の写真

*Syowa Station*  
(昭和基地)

Mr. Hara: It's a contest for ideas about scientific tests you would like to do in the Antarctic and in the Arctic. If your idea is very interesting, a scientific test about the idea will be done by the people at the Japanese research stations in the Antarctic or in the Arctic. ㉝

Tom: Wow! Yoko, let's think about some good ideas together.

Yoko: Sure. To get great ideas, we need to read more books about the Antarctic. Tom, let's go to the library now.

Mr. Hara: Good idea!

(注) the Antarctic 南極 (圏)	past 過去	male オスの
temperature 気温	research station 研究施設	study 研究する
ice 氷	continent 大陸	
be covered with ~ ~で覆われている	thick 厚い	lower 下部の
layer 層	upper 上部の	air 空気
trap 閉じ込める	drill 穴をあけて掘る	climate 気候
change 変化	environment 環境	decrease 減少する
science contest 科学コンテスト	the Arctic 北極 (圏)	scientific test 科学実験

(1) 本文の内容から考えて、次のうち、本文中の《 ㉔ 》, 《 ㉖ 》に入れるのに最も適している英語はそれぞれどれですか。一つずつ選び、記号を書きなさい。

- |                                |                                |
|--------------------------------|--------------------------------|
| ア Do you know where they live? | イ How can they live there?     |
| ウ When did they learn from it? | エ Do you know what they like?  |
| オ What do they call it?        | カ What can they learn from it? |

(2) 本文中には次の英文が入ります。本文中の ㉕ ~ ㉗ から、入る場所として最も適しているものを一つ選び、ア~エの記号を書きなさい。

They are like messages from the past.

(3) 本文中の ㉖ が、「最も寒い季節に、それらは約4か月の間食べ物を食べないで生きることができます。」という内容になるように、英語で書きなさい。

(4) 本文中の ㉙ が、「彼らは南極でしか見つけることができないものを研究しています。」という内容になるように、次の〔 〕内の語を並べかえて解答欄の ㉙ に英語を書き入れ、英文を完成しなさい。ただし、〔 〕内の語には不要な1語が含まれています。

They are [ that found things can studying not be the ] only in the Antarctic.

(5) 本文中の ㉚ が、「南極は、地球について多くのことを私たちに教えてくれるとても大切な場所だと私は思います。」という内容になるように、英語で書きなさい。

(6) 本文中に ㉜ I found an interesting thing about the Antarctic on the Internet とありますが、洋子がインターネットで知ったことに基づいて、自分が考えたことを述べたところが本文中にあります。その内容を日本語で書きなさい。

(7) 次のうち、本文で述べられている内容と合うものはどれですか。一つ選び、記号を書きなさい。

- ア Tom knows many things about emperor penguins because he has seen them in Australia, and he says some other kinds of penguins live in very cold places like the Antarctic.
- イ Yoko knows the first Japanese research station in the Antarctic was built in 1957, but she doesn't know there are four Japanese research stations there now.
- ウ The continent of the Antarctic is covered with very thick ice, and the upper layers of ice are newer than the lower layers of ice.
- エ By studying many different layers of ice, the people at the Japanese research stations know that the climate has never been colder than today.