

平成 30 年度入学者選抜学力検査問題

(前期日程)

英 語

(注 意)

- 1 問題紙は指示があるまで開いてはいけません。
- 2 問題紙は本文 10 ページです。答案用紙は 3 枚あります。
- 3 答えはすべて答案用紙の指定のところに記入してください。
- 4 問題紙と下書き用紙は持ち帰ってください。

I Read the following passage and answer the questions in English.

The Urban Heat Island Effect

When it comes to coping with heatwaves, our own cities are working against us. Road surfaces, pavements, and buildings all contribute to keeping urban environments three to four degrees hotter than surrounding non-urban areas. With heatwaves predicted to increase in frequency and intensity, city governments are taking the urban heat island effect very seriously.

The urban heat island effect occurs because the dark surfaces of roads and buildings absorb and store heat during the day and then release it at night. "That's important, particularly during hot summer evenings; if the minimum temperatures are much warmer at night and not cooling down, then that can have health implications," says Dr. Melissa Hart of the University of New South Wales, Australia.

One of the simplest solutions to reducing the urban heat island effect is to provide more shade with trees. "On thermal images, you can see clearly the red hotspots of cities are streets, roads, car parks ... and you can see the contrast with parks, gardens, and trees," says Cathy Oke of Melbourne city government. Tree planting, however, has its limitations: trees can't be planted in the middle of roads, they can't necessarily be planted on private property, and there are also potential issues with having too many trees. Women can sometimes feel less safe walking around streets with many trees, more trees can mean more water use, and tree planting can also increase the risk of bushfires.

Another approach that can cut down on heat absorption is to consider different surface materials for roads and pavements. The city of Sydney has begun a trial of lighter-colored pavement on one inner-city street to see if this will reduce temperatures by reducing heat absorption. But lighter-colored pavement can be a problem in very sunny areas. "On a bright day ... the last thing you

want is to be driving on the road with the sun coming down and bouncing off the pavement," says Dr. Simon Toze of Australia's Commonwealth Scientific and Industrial Research Organization.

One alternative is "green roads" with a special surface that allows water to soak in and even grass to grow through, which cuts down the amount of heat absorbed by the road surface. Dr. Toze says it might be particularly useful for low-traffic areas that don't see heavy vehicles, although he admits the special surface can make walking more difficult.

A similar principle to green roads applies to green roofs and green walls, where a building is partly or fully covered by plants. This approach indirectly reduces urban heat by cooling the building itself and reducing its air-conditioning requirements, which in turn reduces the amount of waste heat released into the environment. But green roofs can also have unwanted side effects. Recent research shows that increasing the number of green roofs may reduce the temperature in a city, but could also increase the humidity. The end result can be an increase in heat stress because of the combination of temperature and humidity.

There is another contributor to urban heat that is less talked about, and that is us. Our vehicles, the machinery we use to make our days more comfortable, such as air conditioning and refrigeration, and even our own bodies produce significant amounts of heat. This heat is something Dr. Hart argues we need to understand and deal with: "Obviously you can't get rid of the people in a city, but there are ways we can mitigate that." For example, more public transport means fewer heat-producing cars on the roads.

Another issue is our dependence on air conditioning during hot periods. Dr. Hart explains that we need to construct buildings that can deal with hot conditions more effectively than they currently do. This will mean that we won't have to use air conditioning so much, which in turn will result in less energy consumption and less waste heat.

There are no simple solutions to the urban heat island effect, but ignoring the problem is definitely not an option, according to Cathy Oke, who says, "The reality is that the climate is changing, and that cities that are already hot will get hotter." Perhaps the key thing that cities need to understand is that the factors that contribute to the urban heat island effect can be very different from city to city. This means that the potential solutions to it can also be very different. What works in one city, like planting trees along the wide streets of the U.S. city of Portland, is not going to be practical or effective in the narrow streets of Hong Kong, for example. Cities must, therefore, find solutions that match their particular characteristics.

(Adapted from "Urban heat islands: cooling things down with trees, green roads and fewer cars," *The Guardian*, February 20th, 2017)

Question 1: Based on the passage, answer questions (A) to (D) in English.

- (A) If the urban heat island effect worsens, why will this be harmful for residents of cities?
- (B) What are the possible problems when we plant too many trees as a solution to the urban heat island effect?
- (C) What problems may occur if cities adopt new materials for roads and pavements to hold down rises in temperature?
- (D) Why does the writer of the article conclude that each city must find its own solution to the urban heat island effect?

Question 2: For statements (E) to (H), write TRUE if the statement matches the content of the passage. Write FALSE if the statement does not match the content of the passage.

- (E) In Sydney, tests with different materials have begun on several streets in order to understand the effects of heat absorption.
- (F) Buildings in urban cities covered with greenery will make the humidity level more comfortable for city dwellers.
- (G) The presence of humans itself is one cause of the urban heat island effect.
- (H) Changing the way buildings are constructed could help lessen the urban heat island problem.

Question 3: The urban heat island effect is also a big issue in Japan. What do you think Japanese cities should do about the urban heat island effect? Explain one possible approach and why this approach may be good for Japanese cities in 20 to 30 English words.

II Read the following passage and answer the questions in English.

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(Adapted from "The 4 Stages of Culture Shock," *Global Perspectives*, February 20th, 2016)

Question 1: Based on the passage, answer questions (A) to (E) in complete English sentences.

- (A) What are three benefits of living abroad?
- (B) Why is a "lack of mobility" not usually a problem for Arne Plum in his homeland?
- (C) What are three examples of things that may cause frustration?
- (D) When Katie Riley wasn't sure if her actions were acceptable according to Turkish customs, what did she sometimes do?
- (E) Over time, what do people who live abroad stop doing that leads to a true understanding of cultural differences?

Question 2: Read the following comments by four people staying in Japan.

Keith from the U.S.: "I think of myself as a really friendly person, but to be honest, I don't like it when total strangers talk to me in English. The other day I was in a supermarket and a young woman said to me, 'Hello, where are you from?' Maybe she just wanted to practice her English, but she has no right to bother me when I am shopping."

Pierre from France: "I am not Japanese, but I work for an international company based in Osaka. Over time, I stopped really thinking about how different the business culture is here, compared with France. There're still some things that I don't fully understand about the way things are done here, but I don't usually feel any stress from any cultural factors."

Natalie from Poland: "It's great to be living in Japan and I'm so happy to have a chance to be working here. Just walking around can be really awesome and I can see so many cool things. For example, the school uniforms that students wear are really cute! I have difficulty communicating in Japanese, but it's still fun to try."

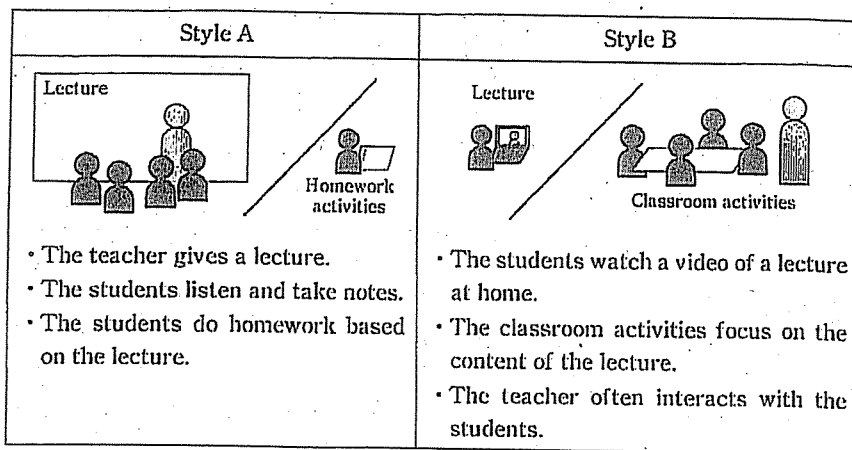
Sarah from the U.K.: "Going to restaurants by myself used to be frustrating. I couldn't read Japanese so well, so I only went to places that had an English menu. But after a few months, with help from Japanese friends, I learned enough to get by and order some things in Japanese. Or I can ask staff for help."

Answer the following questions by writing the correct name in the box.

- (F) Who is in the frustration stage?
- (G) Who is in the adjustment stage?
- (H) Who is in the acceptance stage?

Question 3: A honeymoon is a holiday taken by a newly married couple after their wedding. Why do you think the first stage of culture shock is called the honeymoon stage? Write your answer in 20 to 30 English words.

- III • Look at the diagram below, which shows two different teaching styles, and answer the question.



(Adapted from <http://www.washington.edu/teaching/teaching-resources/engaging-students-in-learning/flipping-the-classroom/>)

Compare the advantages and disadvantages of the two styles. In your opinion, which style is better? Explain your opinion and give three reasons for it. Write 80 to 120 words in English.

出典に関する補遺

平成 30 年度金沢大学個別学力検査(前期日程)「英語」の入学試験問題で引用した文章の出典は次のとおりです。

設問Ⅰ (出典)

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設問Ⅲ (出典)

University of Washington - Center for Teaching and Learning and Office of the Provost.