

令和8年度
一般選抜（後期）

11時30分～13時00分

英 語

問 題 冊 子 1 ～ 11 頁
解 答 用 紙 1 ～ 2 頁

注 意 事 項

1. 試験開始の合図〔チャイム〕があるまで、この注意をよく読むこと。
2. 試験開始の合図〔チャイム〕があるまで、問題冊子は表紙を上、解答用紙は裏面を上にして置き、問題冊子は開かないこと。
3. 試験開始の合図〔チャイム〕の後に問題冊子の表紙ならびに解答用紙の全ページの所定の欄に受験番号と氏名を記入すること。
4. 解答は定められた解答用紙を用い、はっきり読みやすく記入すること。
また解答欄以外には何も書かないこと。
5. 試験開始60分以内および試験終了前10分間は、途中退場を認めない。
6. 途中退場、質問、トイレ、体調不良等で用件がある場合は、挙手のうえ監督者の指示に従うこと。
7. 問題冊子に、落丁や乱丁があるときは、挙手のうえ交換を求めること。
8. 試験終了の合図〔チャイム〕があったときは、ただちに筆記用具を置くこと。
9. 試験終了の合図〔チャイム〕の後は、解答用紙は裏返しにして、通路側に置くこと。
なお、途中退場の場合は解答用紙を裏返しにして、問題冊子の上に置くこと。
10. 問題冊子は持ち帰ること。ただし、途中退場する場合は問題冊子を持ち帰ることはできない。
11. その他、監督者の指示に従うこと。

受験番号		氏 名	
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Verbal communication is one of the many reasons why humans have become so successful as a species. From warning each other of danger to communicating complex information, our ability to speak has been essential. [あ] However, it's not just humans and other animals who developed sophisticated communication. A lot of people think of plants as passive, but they have their own way of interacting with each other. The idea has been around for a while, even inspiring Hollywood movies like Avatar. But recent science is showing plant communication systems may be more complex than we imagined.

These communication networks are sensitive and balanced. [い] Imagine if global systems suddenly broke down. The recent CrowdStrike IT outages, where a cybersecurity company's software update caused worldwide computer failures, are just one example of how delicate these systems are and how important communication is—and that's the case for plants, too.

To grasp how organisms who can't speak pass on information to each other, it's important to understand humans also have a non-verbal communication system. [う] For example, natural gas companies add a chemical called mercaptan to natural gas, giving it that distinctive “bad or old egg” smell to warn us of leaks. Think also of how we have developed sign language, and that many people are skilled lip readers. In addition to these senses, we also have equilibrioception (the ability to maintain balance and body posture), proprioception (the sense of the relative position and strength of our body parts), thermoception (sense of temperature changes), and nociception (ability to sense pain). [え] All these abilities have enabled humans to become highly sophisticated in communication and engagement with the natural world. Other species, particularly plants, use their senses to spread information in their own way—they might think, “What are the neighbors up to?”

Most of us are familiar with the smell of freshly cut grass. The volatile organic compounds (hereafter “volatiles”) released by grass, which are the chemical substances responsible for that smell, are a way for the plants to communicate to others nearby that

danger is present. This warning causes other plants to adjust their defenses. Rather than using sound signals, plants use chemical-induced communication. However, plant communication doesn't end with volatiles. Recently, scientists discovered just how well-connected plants are and how efficiently they can send messages to their fellow plants via their roots, electrical signals, and a network of underground fungi* and soil microbes. This is as if plants have their own neighborhood watches.

(A)This discovery has led to the use of electrophysiology, the study of electrical activity in living organisms. With advances in this field, scientists could be close to making remarkable discoveries by applying electrophysiological techniques in modern greenhouses to monitor watering plants and detect nutritional deficiencies. Soon, we may be able to fully translate the language of our crops.

They achieve this by inserting tiny electrical needles to test how changes in electrical signals relate to plant performance, such as transporting water and nutrients, and converting light into important sugars. Researchers have even made plants change their behavior by sending electrical signals from mobile phones, making them perform basic responses like opening or closing leaves in a Venus flytrap.**

A great deal of plant-to-plant communication happens below ground, facilitated by large fungal networks known as the “(B)wood wide web.” This network of fungi connects trees and plants underground, allowing them to share resources like water, nutrients and information. Through this system, older trees can help younger ones grow, and trees can warn each other about dangers such as harmful insects. It's like an underground internet for trees and plants. The network spreads widely, with over 80% of plants believed to be connected, making it one of the oldest communication systems in the world. Just as the internet enables us to connect and share ideas, knowledge and information that can influence decision-making, it allows plants to use fungi to help them prepare for environmental changes.

However, damaging the soil through chemicals, deforestation, or climate change can disrupt the communication paths by affecting water and nutrient cycles in these networks,

making plants less informed and connected. Not much research has yet been carried out into the effects of (c)damaging these communication networks. But we know that plants' responsive behavior, such as defense responses and gene regulation, can be altered by their fungal network if they are connected to one.

So this communication disconnect might make them easily harmed and make it more difficult to protect and restore ecosystems around the world. Still, there is a lot scientists have to learn about these highly complex networks.

*underground fungi: the group of tiny organisms, such as mushrooms and molds (like ones that grow on old food), that live underground

**Venus flytrap: a plant that eats small insects like flies by closing its leaves to trap them

[1] 下線部(A)が示すことは何か説明しなさい。

[2] 下線部(B)により可能になることを選択肢から選び記号で答えなさい。

- (a) It allows plants to make decisions about environmental threats like humans do with the internet.
- (b) It enables about 80% of plant communication and resource sharing to occur in underground ecosystems worldwide.
- (c) It gives plants the ability to detect and share environmental changes across wider areas.
- (d) It helps plants survive and adapt to their environment by sharing essential resources and information.

[3] 下線部(C)について、以下を答えなさい。

- a) 下線部(C)の原因を説明しなさい。
- b) 結果として起こり得ることは何か 50～65 字で説明しなさい。

[4] 以下の文が入る最も適切な箇所を空欄[あ]～[え]から選びなさい。

This includes our sense of sight, smell, hearing, taste and touch.

- [5] 上記の英文は内容に基づき 5 つのセクションに分けることができる。
その構成になるように、(a)～(e)の見出しを並びかえ、記号で答えなさい。

- (a) Complexity of communication system
- (b) Ecosystem impacts and conservation importance
- (c) Electrophysiological research
- (d) Explanation of fungal networks
- (e) Plant communication methods

In the following passage, a research team talks about the study they have been working on. Read the passage and answer the questions.

About 12,000 years ago, high up on a cliff in the desert of northern Arabia, an artist—or perhaps artists—was hard at work. Standing on a narrow ledge and with primitive tools, they engraved into the rock an image of a life-sized camel. This wasn't the first artwork of its kind. In fact, there was already an entire row of fresh camel engravings on the 39-meter-high cliff face, (A)below which a shallow lake sparkled in the sunshine.

Over thousands of years, (B)these engravings weathered the elements. They gradually eroded until they were almost invisible and had been forgotten. That is, until roughly two years ago, when our international team discovered them and more than 170 others while on a field trip to the region, which sits near the southern edge of the Nefud Desert in Saudi Arabia. As we explain in a new study, published today in *Nature Communications*, the engravings would have marked important desert water sources—and demonstrate the toughness and innovation of people who lived in such a severe, dry environment.

Our earlier research had shown that between 10,000 and 6,000 years ago Arabia was much wetter than it is today. Grasslands had spread into areas that are now desert, and cattle herders used these lands for their herds. The rock art they left behind is well known from two UNESCO World Heritage sites, designated in 2015. Yet, we could also see that there was older rock art at these UNESCO sites. It was much larger and more detailed, showing life-sized and naturalistic camels and wild donkeys. But its date remained a mystery. So in May 2023, we set out to find more of this ancient rock art in three previously unexplored areas—Jebel Arnaan, Jebel Mleiha, and Jebel Misma—in the hope of finding clues about (C).

We found (D)the first rock art panel via a long off-road track, which cut through a beautiful mountain landscape. The panel showed two large camels layered on each other, with a more stylized image drawn over a naturalistic one. The naturalistic camel looked as though it was about to stand up, and the other appeared to be actively walking across the rock surface.

We were excited to find undisturbed archaeological layers directly beneath the engraved camels. In one sealed layer, formed by the accumulation of soils and sediments over time, we even found an engraving tool that was once used to make rock art. Luminescence dating—a dating method that measures when sediment was last exposed to sunlight—revealed the layer in which the tool was found is about 12,000 years old. The same layer also contained artifacts that are typical for this time, including small arrowheads, stone beads and even a bead made from a seashell. These artifacts tell us the people who made the rock art were connected to distant communities, using similar items in the Levant,* 400 kilometers further north.

In total, we identified more than 60 rock art panels containing 176 engravings. The engravings include 130 images of large, life-sized animals—camels, ibex, wild donkeys, gazelles, and aurochs. Some are almost three meters long and more than two meters high.

Significantly, our team also discovered the rock art was placed near ancient seasonal lakes. At the end of the last ice age, during the Last Glacial Maximum, the climate was extremely dry. These lakes, dated at roughly 15,000 years, are the first evidence of surface water returning to Arabia following the extremely arid** period. And they move the timeline of the returning humid conditions back thousands of years, enlarging the opportunity window for humans to settle in these dry inland conditions.

Our results show 12,000 years ago, humans were able to use these seasonal lakes to survive in the desert. They marked these water sources, and the paths leading to them, with monumental rock art. We don't know why they did this. But even for us today, (E).

*the Levant: a historical region in the eastern Mediterranean, including present-day Syria, Lebanon, Palestine, Israel, and Jordan.

**arid: very dry and without enough rain for plants

1. Choose the best replacement for the underlined part (A).
 - (a) and below it a shallow lake sparkled in the sunshine
 - (b) below that a shallow lake sparkled in the sunshine
 - (c) where below a shallow lake sparkled in the sunshine
 - (d) which a shallow lake sparkled below in the sunshine

2. Choose the option that best explains the meaning of the underlined part (B).

- (a) these engravings became stronger over time
- (b) these engravings stayed outside for a long time
- (c) these engravings traced the different weather conditions
- (d) these engravings were mostly damaged by wind, rain, and sun

3. Choose the option that best fits in the blank (C).

- (a) its age
- (b) its location
- (c) its size
- (d) its total number

4. Answer the questions regarding the underlined part (D).

(1) Which of the following was revealed through on-site observation?

- (a) A stylized camel was placed higher on the rock than the realistic one.
- (b) Both camels were shown in a row, as though moving across the rock.
- (c) One camel looked like it was lying down while the other was standing still.
- (d) Two camel images in different styles were drawn on top of each other.

(2) Which of the following was revealed by digging at the site?

- (a) Other camel engravings
- (b) Soils similar to those found in the Levant
- (c) Some seashell remains
- (d) Engraving tools and decorative objects

(3) What technique was used to analyze the layers?

- (a) One that monitors how sunlight ruined the sediment
- (b) One that estimates when sunlight last reached the sediment
- (c) One that identifies how the sunlight was blocked by the sediment
- (d) One that measures how deep the sunlight reached

5. Choose the option that best fits in the blank (E).

- (a) the art panels describe the beauty of the landscape
- (b) the camel is a striking symbol for survival in the desert
- (c) the lakes give us the opportunity window for settlement
- (d) the rock art clarifies the significance of civilization

6. Identify TWO true statements based on the entire passage.
- (a) All of the newly discovered engravings were larger than previously known ones and depicted life-sized animals.
 - (b) Analysis of the layers beneath the first rock art panel revealed that one of them was formed approximately 12,000 years ago.
 - (c) More than 170 staff members participated in archaeological research carried out by the international research team.
 - (d) Cattle herders had difficulty crossing over today's Arabian desert region because it was covered with green for 4000 years.
 - (e) The rock art the researchers found was located near lakes that filled with water only at certain times of the year.

- 3 Read the following poster and answer the questions.

Staying Calm Under Pressure

Pressure is something everyone experiences—(1) during exams, presentations, competitions, or important decisions. Feeling nervous is natural, but (2) makes all the difference. Staying calm helps you think clearly, make better choices, and perform at your best.

➤ (3).

The first step to staying calm is becoming aware of changes in your body and mind. A racing heartbeat, tense shoulders, or restless thoughts are signs that stress is building. Acknowledge what you're feeling and ask yourself what might be triggering your stress. Recognizing these signs early helps you stay (A)calm and focused.

➤ Prepare and plan (4).

Much of the stress we feel comes from uncertainty. Break big goals into smaller, manageable steps and work through them (5). Practice or (B)review key parts so you feel ready when the moment comes.

➤ Build mental strength through daily habits.

Get enough sleep, eat balanced meals, and exercise regularly to maintain energy and focus. (6) time, these habits help you stay strong and keep your mind balanced. Pressure isn't always a bad experience. Instead of seeing it as a threat, try viewing it as a challenge that helps you grow.

1. Choose the options that best fit in the blanks (1)-(6).

- | | | | | |
|-----|----------------------------------|----------------|---------------------------------------|----------------|
| (1) | (a) unless | (b) whenever | (c) either | (d) whether |
| (2) | (a) how you respond | | (b) why you feel | |
| | (c) what happens to you | | (d) how long the pressure lasts | |
| (3) | (a) Strengthen your focus skills | | (b) Practice deep breathing exercises | |
| | (c) Set clear goals for yourself | | (d) Notice your stress signals | |
| (4) | (a) beginning | (b) in front | (c) ahead | (d) forward |
| (5) | (a) one at a time | (b) as a whole | (c) in pieces | (d) all in all |
| (6) | (a) By | (b) Over | (c) Within | (d) From |

2. Which of the following words or phrases is closest in meaning to the underlined parts (A) and (B)?

- (A) (a) within mind (b) in control (c) at ease (d) on alert
(B) (a) bring up (b) try on (c) go over (d) call off

以 上