

# 公募制推薦入試

## 英語

I 次の英文を読み、下記の設問に答えよ。(配点 22)

Dogs can distinguish between languages, researchers in Hungary found, after playing \*excerpts from the story “The Little Prince” in Spanish and Hungarian to a group of 18 canines and examining how their brains reacted.

The study was led by Laura V. Cuaya at Eotvos Lorand University in Budapest,  moved to the city from Mexico a few years ago, bringing her dog Kun-kun with her. “I wondered whether Kun-kun noticed that people in Budapest spoke a different language, Hungarian,” she said. “In the research we found for the first time that a nonhuman brain can distinguish between languages.”

In their lives with humans, dogs pick up on the auditory patterns of the language they are exposed to, said Raul Hernandez-Perez, coauthor of the study. During the experiment, Kun-kun and others (① motionless ② to ③ trained ④ were ⑤ down ⑥ lie)<sup>1)</sup> in a brain scanner for several minutes.

All the dogs had heard only one of the two languages — either Hungarian or Spanish — from their owners before, (① their brain ② allowing ③ how ④ compare ⑤ researchers ⑥ to)<sup>2)</sup> reacted to a highly familiar language and to a completely unfamiliar one. The dogs listened to excerpts from the story in Spanish and Hungarian and also scrambled versions of these excerpts to test if they could detect speech and nonspeech.

When comparing brain responses, researchers found distinctive activity patterns in dogs’ \*primary auditory cortex of the brain,  that they can distinguish between speech and nonspeech. In their secondary cortex which analyzes complex sounds, dogs’ brains produced different activity patterns when they heard a familiar language and an unfamiliar language. The older the dogs were, (① the two languages ② their brain ③ between ④ the ⑤ distinguished ⑥ better)<sup>3)</sup>.

注 \*excerpts 抜粋 \*primary auditory cortex 一次聴覚野

(Source: Que? Dogs’ brains can tell Spanish from Hungarian, study finds by Krisztina Fenyo, from Reuters, January 6, 2022. Reproduced with permission of Reuters News & Media Inc.)

(1) 空所  と  に入る最も適切なものを次の中からそれぞれ1つ選び、その番号をマークせよ。

- |                                |            |              |             |                 |
|--------------------------------|------------|--------------|-------------|-----------------|
| <input type="text" value="1"/> | ① where    | ② when       | ③ which     | ④ who           |
| <input type="text" value="2"/> | ① indicate | ② indicating | ③ indicated | ④ will indicate |

(2) 下線部1)～3)の①～⑥を並べかえて英文を完成させ、それぞれ4番目にくるものの番号をマークせよ。

下線部1) 

3
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下線部2) 

4
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下線部3) 

5
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(3) 本文が示唆することとして最も適切なものを次の中から1つ選び、その番号をマークせよ。

6
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- ① イヌはネコと同様、人間の言語を理解できるようである。
- ② イヌは人間の言語をすべて同じと認識するようである。
- ③ イヌは飼い主の用いる耳慣れた言語とそうでない言語を区別するようである。
- ④ イヌはハンガリー語をスペイン語よりもより良く理解するようである。

II 次の会話を読み、下記の設問に答えよ。(配点 18)

A sports club representative (Rep) is talking to visitors on an open day.

Rep: I'd like to thank everyone for coming today. I hope you enjoyed watching our introductory video and have managed to get a taste of *parkour* and the activities of our organization. Now, I would like to <sup>a)</sup> open the floor for any <sub>b)</sub> questions you might have.

Visitor A:

Rep: In short, yes, we do. One of our aims is to provide a safe space where families can engage in *parkour* and a major part of this is our provision <sup>1)</sup> for children and young adults. We believe that *parkour* offers an authentic exercise regime to maximize child physical and mental development. Through *parkour*, they can interact with the natural environment while learning how to assess risk and set themselves personal goals. If you would like to know more, we have an information pack which highlights some of the activities we have been holding.

Visitor B:

Rep: No, absolutely not. *Parkour* is a natural activity where one can make full <sub>c)</sub> use of the environment. All that is necessary is some sports clothing and shoes. A curious and adventurous outlook is an added bonus.

Visitor C:

Rep: Indeed, there are. I'd like to echo <sub>2)</sub> my earlier comments and those of my colleagues on the video. We are committed to providing a family-friendly environment. In that regard, we also recognize the financial constraints that some families may experience and accordingly have recently introduced our "Clan Membership" options which offer competitive discounts for all family members. Again, please find out the details via our information packs.

Visitor D: Recently, there have been some incidents in the news of serious injury and death associated with extreme sports including *parkour*. My question is:

Rep: I must emphasize the safety of our customers is our number-one concern. We undertake <sub>3)</sub> safety reviews at every level of our business. Our instructors are all fully trained not only in *parkour* but in safety procedures. *Parkour* is an activity that will enhance <sub>4)</sub> one's ability to interact safely with the environment. In fact, safety lies at the core of *parkour*. For instance, the first thing you will learn about is how to fall safely. So, in short, it is very

safe. It is true that some people associated with *parkour* have been in the news for unfortunate reasons. But I would draw a parallel with martial arts. Fundamentally, martial arts are a force for good, but they do have the potential to be used in a negative way. I would strongly recommend attending one of our open workshops as an observer. I think any concerns about safety would be put to rest on seeing our instructors at work.

(1) Which is the best question to complete the conversation? Choose the best answer and mark the number on the answer sheet.

- ① Do you believe that *parkour* is the future?
- ② Do you have any information packs?
- ③ Do you have any activities for kids?
- ④ Do you believe in equal rights for children?

(2) Which is the best question to complete the conversation? Choose the best answer and mark the number on the answer sheet.

- ① Do we need any special equipment?
- ② Would you say that *parkour* is a natural activity?
- ③ What kind of person would enjoy this sport?
- ④ Do we need to be healthy to take part?

(3) Which is the best question to complete the conversation? Choose the best answer and mark the number on the answer sheet.

- ① Do you believe *parkour* is environmentally friendly?
- ② Are there any family membership plans?
- ③ Do you accept people with a sense of adventure?
- ④ Are there training rooms for families?

(4) Which is the best question to complete the conversation? Choose the best answer and mark the number on the answer sheet.

- ① Why are safety measures typically undertaken?
- ② When do you usually recommend users undergo training?
- ③ Which do you recommend, martial arts or *parkour*?
- ④ How safe is *parkour*, exactly?

(5) Which of the underlined words 1) ~4) in the conversation has the meaning “repeat”? Choose the best answer and mark the number on the answer sheet.

- ① engage  
1)
- ② echo  
2)
- ③ undertake  
3)
- ④ enhance  
4)

(6) Which of the underlined expressions a) ~d) in the conversation has the meaning “compare”? Choose the best answer and mark the number on the answer sheet. 

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- ① get a taste  
a)  
③ make full use  
c)

- ② open the floor  
b)  
④ draw a parallel  
d)



IV アザラシ (seal) の顔認証技術に関する次の英文を読み、下記の設問に答えよ。(配点 25)

Scientists believe they have found a new use for facial recognition technology: saving seals.

Researchers at Colgate University in the U.S. state of New York have developed SealNet. The system is a database of seal faces created by taking pictures of many harbor seals in Maine’s Casco Bay. The research team 18 the tool’s accuracy in identifying the mammals was close to 100 percent.

The researchers are working on increasing the size of their database to make it 19 to other scientists, said Krista Ingram. She is a biology professor at Colgate and a team member. Increasing the database to include rare species such as the Mediterranean monk seal and Hawaiian monk seal could help efforts to save those species, she said. Creating a list of seal faces and using machine learning to identify them can also help scientists know where in the ocean seals are, Ingram said. She said, “For mobile marine mammals that move around a lot and are hard to photograph in the water, we need to be able to identify individuals.”

SealNet (① designed ② identify ③ the ④ to ⑤ face ⑥ is) in a picture. It recognizes the seal’s face based on information related to the eyes and nose shape, as it would a human. A similar tool called PrimNet, which is for use on \*primates, had been used on seals earlier, but SealNet performed better, the Colgate researchers said.

The Colgate team published its findings last spring in *Ecology and Evolution*. They processed more than 1,700 images of more than 400 individual seals, the paper said. The paper stated that the SealNet software could be a valuable tool in the developing field of “conservation technology” — technology aimed at saving and protecting wild animals.

Harbor seals are a conservation success story in the U.S. More than 100 years ago, the animals were once widely killed. But the Marine Mammal Protection Act, which turned 50 in October, gave them new protections — and populations began to come back.

Seals and other ocean mammals have long been studied using satellite technology. Using artificial intelligence to study them is a way to bring conservation into the 21st century, said Jason Holmberg of Wild Me. The Oregon-based company works to bring machine learning to biologists. Wild Me is developing a possible partnership with SealNet. Harbor seals are now common in the waters off the coast of the Northeastern United States. Other seal species, however, remain at risk. The Mediterranean monk seal is thought to be the world’s most at-risk seal with only a few hundred animals

remaining.

Facial recognition technology could provide valuable data, said Michelle Berger, an associate scientist at the Shaw Institute in Maine. Berger was not involved 20 the SealNet research. “Once the system is perfected I can picture lots of interesting ecological applications for it,” Berger said. “If they could recognize seals, and recognize them from year to year, that would give us lots of information about movement, how much they move from site to site.”

The Colgate researchers are also working with FruitPunch, a Dutch artificial intelligence company, to improve some parts of SealNet<sup>3)</sup> to help more scientists use it, said Tjomme Dooper, FruitPunch’s head of partnerships and growth. That would open new opportunities to study the animals and help protect them, he said. “What this does is help the biologists study the behavior of seals, and also population dynamics,” Dooper said. He added that harbor seals give important information about the environment around them.

注 \*primates 霊長類

(Source: Facial recognition can help conserve seals, scientists say by Patrick Whittle, from AP News, Nov 24, 2022)

(1) 空所 18 ~ 20 に入る最も適切なものを次の中からそれぞれ1つ選び、その番号をマークせよ。

- |    |             |           |            |             |
|----|-------------|-----------|------------|-------------|
| 18 | ① find      | ② finding | ③ found    | ④ founded   |
| 19 | ① invisible | ② true    | ③ possible | ④ available |
| 20 | ① in        | ② on      | ③ to       | ④ of        |

(2) 下線部1)の①~⑥を並べかえて英文を完成させ、4番目にくるものの番号をマークせよ。

21

(3) 下線部2) PrimNetの説明として最も適切なものを次の中から1つ選び、その番号をマークせよ。 22

- ① SealNetを手本にして開発された。
- ② DNAに基づいて霊長類を特定できる。
- ③ SealNetよりも高い性能を持っている。
- ④ アザラシを特定するために利用されていた。



(4) 下線部3) FruitPunch の説明として最も適切なものを次の中から1つ選び、その番号をマークせよ。 

23
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- ① 衛星技術が利用されたシステムである。
- ② 果物の種類を特定できるシステムである。
- ③ オランダの人工知能の会社である。
- ④ Colgate の研究チームが設立した会社である。

(5) アザラシの説明として本文の内容に合わないものを次の中から1つ選び、その番号をマークせよ。 

24
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- ① harbor seals はメイン州の Casco 湾に生息している。
- ② Hawaiian monk seals は希少種である。
- ③ harbor seals は年々数が減っている。
- ④ 生存する Mediterranean monk seals はわずか数百頭程度である。

V 南パタゴニア氷原旅行記に関する次の英文を読み、下記の設問に答えよ。(配点 20)

I decided to visit this part of Chile to renew a friendship with a Chilean boat pilot named Hector I met on a previous trip to Antarctica. He repeated to me over and over: “If you like the endless ice of Antarctica, you have to go see the ice in my country!” He added that the glaciers of Chile were almost as 25 as those of Antarctica. “But you have to hurry, because of climate change, they are unraveling.”

Puerto Kochifas was where my journey began, aboard the Skorpios III ship that would take me to the spectacular glaciers in a practically unexplored landscape. In this boat, things rotate around one family. Mimi Conuecar, widow of the founder of the cruise operator, Captain Constantino Kochifas, is in charge. At age 91 and after almost 50 years of service, she is 26 on board and does not miss a single trip. In fact, she even descends to each deck to check that everything is in perfect condition. Luis Kochifas, her son, is captain of Skorpios III now. He proudly explains how the week after his father died, his mother was already on board. “It is her philosophy of life. She will die on board the ship, just like my father did,” he explained.

I spent four days and three nights sailing through archipelagos, channels, past islands covered with forests, all offering incredible experiences in this most inhospitable and unknown Patagonia.<sup>2)</sup>

The Southern Ice Fields are a huge mass of \*millenary ice of 17,000 km<sup>2</sup>—that is, ice that dates back thousands of years to the last ice age more than 20,000 years ago. The fields start out from two slopes of the Andean peaks. This is one of the least-studied areas on the planet.

After watching Puerto Natales and its colorful houses grow further away as we sailed, the first thing that greeted my eyes was the Kirke Narrows and green plants on the Patagonian \*fjords. Our ship went around tiny islands where the trees grow at inclines of about 45 degrees due to the constant, strong winds. The captain showed incredible skill in steering through the narrow passages.

The next day, I woke to find we were \*moored next to the Amalia Glacier, the largest among the ice fields included in our travel log—it is 21 km long and covers an area of 158 km<sup>2</sup>. The glacier rose above us in an ice wall more than 90 meters tall. The ice, which is retreating, had left along the shoreline a clear path on (① we visitors ② without ③ walked ④ from ⑤ difficulty ⑥ which) to the<sup>3)</sup> glacier wall.

注 \*millenary 千年の \*fjords 峡湾, フィヨルド \*moored 停泊している

(Source: Asahi Weekly, January 16, 2022)

承諾番号 24-0600

「朝日新聞社に無断で転載することを禁じる」

(1) 空所  と  に入る最も適切なものを次の中からそれぞれ1つ選び、その番号をマークせよ。

① destroyed      ② decreasing      ③ untouched      ④ usual

① still      ② never      ③ since      ④ then

(2) 下線部1) unraveling の意味に最も近いものを次の中から1つ選び、その番号をマークせよ。

① running smoothly      ② increasing quickly

③ getting colder      ④ melting

(3) 下線部2) inhospitable の意味に最も近いものを次の中から1つ選び、その番号をマークせよ。

① beautiful to see      ② difficult to stay

③ likely to understand      ④ easy to touch

(4) 下線部3) を文脈に合うように並べかえる際、不必要なものが1つ含まれている。その語句を1つ選び、その番号をマークせよ。

(5) 本文の内容に合うものとして最も適切なものを次の中から1つ選び、その番号をマークせよ。

① 筆者は Hector とはチリ旅行の際に知り合った。

② Puerto Kochifas は筆者の旅の目的地であった。

③ Mimi Conuecar はクルーズ船運航会社の創設者だった。

④ Mimi Conuecar はこの旅の時点で91歳だった。

⑤ Luis Kochifas は Mimi Conuecar の夫で、クルーズ船の船長だった。