

2025

前

入学試験問題

外国語英語

注意事項

○問題について

1. 試験開始の合図があるまでは、この問題冊子の内容を見てはいけません。
2. 問題は **1** から **5** まで、全部で14ページです。とじ間違いや、印刷不鮮明の箇所があれば申し出なさい。
3. 問題 **3** と **4** と **5** はリスニング試験です。音声を聞いてから解答しなさい。リスニング試験は13時50分に開始し、14時10分頃に終了する予定です。

○解答について

1. 解答用紙は6枚です。
2. 全ての解答用紙に受験番号を記入しなさい。
3. 解答は、解答用紙の指定された欄に枠からはみ出さないように記入しなさい。
4. 解答は、黒鉛筆(シャープペンシル可)を使用し、横書きで記入しなさい。
5. 解答欄がマス目になっている設問では、1マスに1字ずつ記入しなさい。句読点・記号も1字と数えること。ただし、アルファベット・アラビア数字は1マスに2字ずつ記入しなさい。

○その他

1. 質問など、何か用事があるときは、手をあげて知らせなさい。
2. 解答が終わっても、途中退出は出来ません。ただし、トイレに行きたい場合や気分が悪くなったときは、手をあげて知らせなさい。
3. 不正行為を行った場合や、試験監督の指示に従わない場合には採点しません。
4. この問題冊子は持ち帰りなさい。

1

身長差に関する研究にもとづいた次の文章を読んで、下の設問に答えなさい。

(60 点)

The Maya people of Guatemala are among the shortest people in the world. Men on average hover a few inches above 5 feet and women a few inches below. But if they move to the United States as children, the Maya grow taller. ⁽¹⁾ That extra growth carries to the next generation: Maya children born to Guatemalan immigrants in the United States are roughly four inches taller than their peers in Guatemala, research by biological anthropologist Barry Bogin shows. Some of that gap disappears as children reach adulthood, but even then, Maya people in the United States are still taller than people in their native country.

Economists have long observed increases in height across immigrant communities worldwide. Improved nutrition and sanitation are the conventional explanations for such growth. But Bogin, of Loughborough University in England, and other researchers think ⁽²⁾ there's more to it than just better health. Even wealthy children in Guatemala tend to be shorter than children who grow up in the United States. Moving a child from one society to another — even if their lifestyle doesn't change significantly — shifts their growth trajectory to match that of children in their new community, Bogin says.

His proposal that height has a social component rests on evidence that genetics and nutrition can't explain all variation in human height. It's also based on research in behavioral ecology showing that the growth of many social animals adapts in response to members of their community, a phenomenon referred to as “strategic growth.” In species with rigid hierarchies, dominant members often grow larger while subordinate members stay smaller.

Strategic growth also drives growth in humans, Bogin proposed in 2021 in *Human Biology and Public Health*. ⁽³⁾ His research suggests that height not only reflects a person's perceived social status within their community, but also

their society's underlying political and economic conditions. For instance, height disparities are wider in highly unequal societies and shrink in more egalitarian ones. When people in highly stratified countries move to more egalitarian communities, they tend to grow taller, studies of Western countries suggest. Based on animal research, Bogin suspects hormones, including those released when the body is under stress, may modulate the social aspects of height.

Many researchers agree that the stress of living in a harsh environment can suppress growth. But they balk at the idea that one's peers can influence height. Sociologist Gert Stulp of the University of Groningen in the Netherlands says, "You see other tall people and then also want to be taller and then you become taller."

But Bogin is a renowned height researcher. His book *Patterns of Human Growth*, now in its third edition, is among the most widely read textbooks in the field. That reputation has left colleagues inclined to consider what might otherwise sound outlandish.

It's plausible that social status influences human growth, says behavioral ecologist Peter Buston of Boston University, who studies strategic growth in clown fish. But he urges caution. Bogin and his collaborators "haven't yet done the studies that I would like to see done to make the strong case," Buston says.

⁽⁴⁾ Framing height as at least partially socially driven could have profound implications for public health. Extreme shortness among children, or stunting, seen in some 149 million children under age 5 worldwide, might be a sign of social disadvantage rather than malnutrition, Bogin and others argue. What's needed in such cases may not be nutrition supplementation, the common approach, but programs that alleviate societal inequities.

The clown fish Buston studies live in colonies of two to six fish. The largest member is the breeding female followed by the breeding male. The remaining fish, none of whom breed, get progressively smaller, so that each is about 80 percent the size of the fish ahead of it in rank, Buston has found.

This rigid hierarchy helps prevent conflict, Buston theorized more than two decades ago. A graduate student in his lab recently found that if a larger fish is introduced into a colony to replace a smaller fish, the large fish gets shunned. A smaller replacement fish doesn't.

In the wild, eviction, and the resulting exposure to predators, would be a likely death sentence. In clown fish at least, Buston says, "there's been really strong natural selection for individuals who can regulate their growth and turn their growth on and off."

Strategic growth also shows up in social mammals. Consider meerkats, which live in groups of three to 50 members with a dominant breeding pair that accounts for 90 percent of the group's reproduction. Those two meerkats are also typically the largest. Smaller, often younger subordinates help feed and care for the pups, with the largest nondominant animals replacing the dominant breeding pair if they die.

But what factors influence human height and by how much remains an open question. Genetics is no doubt involved, though it doesn't seem to account for all patterns. Same for nutrition and sanitation. Evidence from a research study hints that other factors must also be at play.⁽⁵⁾ An analysis of 168,000 children in India and sub-Saharan Africa, for example, found that eldest sons in India were taller, on average, than eldest sons in Africa. But other Indian siblings were shorter than children of the same age and birth rank in Africa. The findings, reported in 2017, suggest that Indian children have the genetic potential to grow as tall as sub-Saharan African children, but for some reason only eldest sons attain that potential. The wealthiest families in India showed the widest height disparities between older and younger siblings, unexpected if nutrition or sanitation were the primary issues.

Archaeologist Samantha Cox of the University of Pennsylvania has found a similar height disparity among adult females in early Neolithic communities in Europe. Analyzing ancient DNA samples from skeletal remains that date

back some 7,000 years, Cox discovered that females in North Central Europe (modern-day northern Germany) measured a couple inches shorter than females in South Central Europe (southern Germany, Austria and Slovakia), despite similarities in genetics and resource access. Males across both regions, meanwhile, were the same height, Cox's team reported in the February *Nature Human Behaviour*.

Northerners, however, had considerably more physical signs of stress than southerners. Cox thinks that may be due to the challenges northern Neolithic communities faced in growing food. Some social factors may explain why northern males were able to recover from that stress while northern females were not. Females in the north may have suffered discrimination. "It seems pretty clear that there is male preference here," she says.

These and other status-related differences in height have been observed in modern societies too. "High-social-status people are taller than low-status people ... this is definitely true," Stulp says. For instance, tall people tend to earn more money than short people, creating a so-called height premium.

That premium, though, varies by geography, researchers reported in 2023 in *Economics & Human Biology*. In wealthy, typically Western countries, such as the United States and Australia, the height premium is lower, on average, than in countries in Asia and Latin America. The researchers attribute this difference to the role of environmental conditions, which become more variable as poverty rises. So compared with people in high-income countries, people in lower-income countries may more likely associate tallness with better health and fitness, resulting in a greater height premium.

*sub-Saharan Africa: relating to the part of the continent of Africa that is south of the Sahara Desert

*Neolithic: relating to the period when humans used tools and weapons made of stone and had just developed farming

【設問】

下の 1 ～ 6 の設問に答えなさい。解答は解答欄に書きなさい。

1. 下線(1)は具体的にどのようなことを意味しているか，例を挙げて 90 文字以内の日本語で説明しなさい。
2. 下線(2)は具体的にどのようなことを意味しているか，本文に即して 70 文字以内の日本語で説明しなさい。
3. 下線(3)は具体的にどのようなことを意味しているか，例を挙げて 120 文字以内の日本語で説明しなさい。
4. 下線(4)は具体的にどのようなことを意味しているか，本文に即して 120 文字以内の日本語で説明しなさい。
5. 下線(5)は具体的にどのようなことを意味しているか，例を挙げて 130 文字以内の日本語で説明しなさい。
6. 下線(6)のように結論できる理由はどのようなものであると推測されるか，90 文字以内の日本語で説明しなさい。

2

次の文章は世界初の「食用ロボット」についての記事です。文章を読んで、下の設問に答えなさい。(30点)

A cloudy yellow rectangular figure about seven centimeters long wobbles from side to side, waving its gelatinous arms as it makes a friendly greeting, its body resting inside a mug.

“Hello. I was looking forward to speaking with you today,” says the figure, which was successfully (①) by Yoshihiro Nakata, an associate professor of robotics at the University of Electro-Communications and his team of researchers.

The wobbly character is not just an apple-flavored gummy candy but also the world’s first “edible robot.” While the edible part of the robot (②) only of a gelatin-based chewable sweet, it is powered by robotics from its base to give it its lifelike quality.

With tiny black dots for eyes, the robot’s edible body is attached to a stainless-steel metal bolt placed inside a 3D-printed mug. Chambers inside the gummy fill with air and connect to a pneumatic tube at the base of the apparatus to (③) the creature in motion, while the audio comes from a speaker connected to the device.

But what on earth, you may be wondering, is this for? The goal, says Nakata, is to (④) up edible robots as a “new culinary experience.”

Nakata was partly inspired by Anpanman, a well-known Japanese children’s superhero comic book and anime character who takes the form of an anthropomorphized red bean paste-filled pastry.

Throughout the series, Anpanman often sacrifices himself for his hungry pals by ripping off parts of his face to feed them. For Nakata, this (⑤) the idea of changing people's perceptions through food, the driving concept behind his project.

"When Anpanman tears off parts of his face and gives it to someone, it is depicted as tasting even better than usual, and giving people energy," he said, (⑥) that he believes the way people interact with food may cause changes in their sense of taste and texture and produce different psychological and cognitive effects.

For the research, Nakata collaborated with researchers from Osaka University and also drew inspiration from the traditional Japanese culinary practice of "odorigui," literally (⑦) "dancing eating," which involves eating live seafood as it moves.

Seafood consumed while still living can include octopus, squid, lobster, clams, shrimp and ice gobies. By (⑧) robots into the mix, Nakata wants to push the boundaries of odorigui, curious about whether the robot's movements could trigger a change in people's perception of taste.

He created the stick figure robot in 2022 to conduct an experiment that (⑨) to analyze participants' perceptions, both when the stick figures were in motion and when they were stationary.

Sixteen people ate the figures containing the same ingredients of gelatin and sugar, both in motion and while stationary. The participants then selected what textures best described each experience.

Many selected a word describing the experience of eating chewy food when describing the texture of the still robots, while a word (⑩) to describe something springy and a bit hard was selected for the robots that were in motion.

The researchers concluded that “the texture experienced while biting and chewing the animated robots was different from those in a stationary condition.”

【設問】

空所①～⑩に入れるのにもっともふさわしい単語を下から1つずつ選んで、必要であれば適切な形に変えて解答欄に書きなさい。それぞれの単語は1回だけ使うものとします。

capture

consist

develop

emphasize

mean

offer

seek

set

throw

use

vary

3

これから bilingual であることの長所を説明するレポートを聞きます。その内容にあうように、1～8の文を完成させるのにもっともよくあてはまる選択肢をそれぞれ a～c の中から1つずつ選んで、その記号を解答欄に書きなさい。放送は1回流れます。(40点)

1. Learning a new language is now understood to be

- a. good for your mental health.
- b. like solving mathematical equations.
- c. similar to going to the gym for your mind.

2. In the bilingual brain, all our languages are active

- a. in the brain all at the same time.
- b. one at a time with high intensity.
- c. when we shift between languages.

3. The first study suggested that bilingual people

- a. are cured of dementia after 4.5 years of treatment.
- b. develop dementia 4.5 years later than monolinguals.
- c. don't get dementia with 4.5 years of cognitive reserve.

4. When learning a new language later in life, your brain must

- a. import a complex set of neural networks.
- b. modify existing neural networks.
- c. recover childhood neural networks.

5. The researchers instructed the children to lie in the scanner while
- $\left\{ \begin{array}{l} \text{a. staring at a cross and doing nothing} \\ \text{b. talking to no one and staring at a cross} \\ \text{c. thinking of a cross and doing nothing} \end{array} \right\}$ and then measured their brain activity.
6. The groundbreaking study found that the early bilingual group had the strongest connectivity when
- $\left\{ \begin{array}{l} \text{a. the brain is not wandering.} \\ \text{b. the brain network is at rest.} \\ \text{c. the neurons are at rest.} \end{array} \right\}$
7. Bilingualism helps both children and adults understand that it is possible to have
- $\left\{ \begin{array}{l} \text{a. bigger mental capacities.} \\ \text{b. different viewpoints.} \\ \text{c. similar behavioural effects.} \end{array} \right\}$
8. Recent studies have found that people tend to react
- $\left\{ \begin{array}{l} \text{a. less emotionally in their first language.} \\ \text{b. more emotionally in their first language.} \\ \text{c. more or less the same in each language.} \end{array} \right\}$

4

これから宇宙での菌類 (fungi) の利用法に関する放送を聞きます。放送を聞いて、以下の 1～8 の文を完成させるのにもっともよくあてはまる選択肢をそれぞれ a～c の中から一つずつ選んで、その記号を解答欄に書きなさい。放送は 1 回流れます。(40 点)

1. Astronauts aboard the Soviet space station Mir made a
 - a. fascinating discovery.
 - b. frightening discovery.
 - c. frustrating discovery.

2. The invaders were identified as several species of Earth-derived fungi that had
 - a. adapted to the highly radioactive environment.
 - b. endured the journey to the Earth.
 - c. surpassed several other species in competition.

3. Thankfully, the Mir crew
 - a. found a way to keep the fungal threats.
 - b. managed to get rid of fungi.
 - c. succeeded in holding off the threats of fungi.

4. Outside the Earth's protective magnetic field, fungi
 - a. produce a special form of radiation.
 - b. remove and restore defective sequences in DNA.
 - c. use a robust system to grow fuel.

5. A big obstacle to settling on other planets is figuring out how to source the materials to build
 - a. houses.
 - b. machines.
 - c. regolith.

6. Scientists working with NASA's Innovative Advanced Concepts program plan to
 - a. expose fungi to sunlight.
 - b. launch fungal homes.
 - c. use fungi as building material.

7. Cyanobacteria's role is to
 - a. consume oxygen.
 - b. sanitize oxygen.
 - c. supply oxygen.

8. Fungi can also help
 - a. create soil.
 - b. dehydrate food.
 - c. dissolve metal.

5

これから人間の学習に関する講義を聞きます。以下は講義中に使用された資料です。これを参考に講義を聞いて、設問1と2に答えなさい。放送は2回流れます。

Variables that influence learning

1. Active ()

- (a) () yourself while reading.
- (b) Determining how the () relates to other sections
- (c) Using study guides
- (d) () book chapters or notes is better than () or reading.

2. Similarity of the learning and () condition

Ideal place to study for exams

→ ()

3. State () learning

It is best to () information in the same () as you do the learning.

- If you (), () while taking the exam.
- If you drink () while studying, drink () while taking the exam.
- Don't study while not drinking () but take the exam on ().

4. Test ()

- (a) While studying, you tend to be relaxed, but when taking the exam you tend to get () due to the stress.
- (b) When you're (), your blood pressure increases, different hormones are secreted, etc.
- (c) Result: Mind goes ().
- (d) After the exam, you relax and can () the information again.

【設問】

1. 資料を参考に講義を聞いて、その要約を 150 語程度の英語で書きなさい。
(40 点)

2. この講義では学習における環境の要因が強調されています。あなたは学習においてどのような要因が重要だと考えますか。それはなぜですか。200 語程度の英語で述べなさい。意見は解答欄に書くこと。(40 点)

