

## 英 語

(問 題)

2024年度

〈R06181119〉

## 注 意 事 項

1. 試験開始の指示があるまで、問題冊子および解答用紙には手を触れないこと。
2. 問題は2～11ページに記載されている。試験中に問題冊子の印刷不鮮明、ページの落丁・乱丁及び解答用紙の汚損等に気付いた場合は、手を挙げて監督員に知らせること。
3. 解答はすべて、HBの黒鉛筆またはHBのシャープペンシルで記入すること。
4. マーク解答用紙記入上の注意
  - (1) 印刷されている受験番号が、自分の受験番号と一致していることを確認したうえで、氏名欄に氏名を記入すること。
  - (2) 所定欄以外に受験番号・氏名を記入した解答用紙は採点の対象外となる場合がある。
  - (3) マーク欄にははっきりとマークすること。また、訂正する場合は、消しゴムで丁寧に、消し残しがないようによく消すこと。

マークする時	<input checked="" type="radio"/> 良い	<input type="radio"/> 悪い	<input type="radio"/> 悪い
マークを消す時	<input type="radio"/> 良い	<input type="radio"/> 悪い	<input type="radio"/> 悪い

5. 解答はすべて所定の解答欄に記入すること。所定欄以外に何かを記入した解答用紙は採点の対象外となる場合がある。
6. 問題冊子の余白等は適宜利用してよいが、どのページも切り離さないこと。
7. 試験終了の指示が出たら、すぐに解答をやめ、筆記用具を置き解答用紙を裏返しにすること。
8. いかなる場合でも、解答用紙は必ず提出すること。
9. 試験終了後、問題冊子を持ち帰ること。

〔I〕 次の英文 (i)～(viii) を読んで、設問 1～25 の解答として最も適当なものを、(A)～(D) の中から選びなさい。

(i) Most salamanders live in streams and under rocks or logs, but the wandering salamander (*Aneides vagrans*) has a high-flying lifestyle. These 13-centimeter-long amphibians spend much or all of their lives in coastal redwoods, some of the tallest trees in the world. Now, a laboratory study shows how they can descend by jumping, slowing their fall by spreading their limbs like a skydiver.

To study the aerial ability of the wandering salamander, researchers brought several individuals into the lab along with three other species that vary in how well they climb. They put them into a wind tunnel with a fan blowing upward to simulate the animal falling. Both the wandering salamander and its relative, the arboreal salamander (*A. lugubris*), often spread their limbs like a skydiver in freefall, maximizing drag. This slowed their descent by as much as 10%, the researchers report today in *Current Biology*. Other times, the salamanders glided and turned in various directions by wiggling their legs and tail. In contrast, the speckled black salamander (*A. flavipunctatus*), which isn't known for its climbing ability, and the ground-dwelling Monterey ensatina (*Ensatina eschscholtzii*), at best sometimes managed to glide but without much control.

Skydiving could be an effective way to avoid predators. It might also be a more efficient way of moving down the tree. The researchers are now studying the flight behavior with computer models to figure out how wandering salamanders—which have no obvious adaptations for flight, such as flaps of skin—generate lift to help them glide.

※ページ下部に出典を追記しております。

1. Why do wandering salamanders spread their limbs while falling?  
(A) Avoid predators  
(B) Descend faster  
(C) Slow their descent  
(D) All of the above
2. How do some salamanders change their direction while falling?  
(A) Bending  
(B) Crossing  
(C) Stretching  
(D) Wiggling
3. Which of the following most accurately describes salamanders' abilities?  
(A) The arboreal salamander can descend faster than the Monterey ensatina.  
(B) The Monterey ensatina has less control of their fall than the speckled black salamander.  
(C) The speckled black salamander moves down trees faster than the Monterey ensatina.  
(D) The wandering salamander and the arboreal salamander have similar aerial abilities.
4. How did the wandering salamander get its name?  
(A) Ability to avoid predators  
(B) Spreading their limbs like a skydiver  
(C) Their climbing ability  
(D) Not enough information given

※WEB掲載に際し、以下のとおり出典を追記しております。  
From "Watch salamanders 'skydive' in a wind tunnel"  
by Erik Stokstad, *SCIENCE* 23 May 2022  
(doi: 10.1126/science.add1069).  
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( ii )

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5. How might have sweet foods benefited younger children?

- (A) Complex carbohydrates
- (B) Evolutionary advantage
- (C) Nutritional value
- (D) All of the above

6. Choose the best word to put in the space marked ( A ) in the second paragraph.

- (A) diminishes
- (B) increases
- (C) peaks
- (D) None of the above

7. How might our taste preferences change as we age?

- (A) Associate tastes with their outcome.
- (B) Increased tolerance for bitter tastes.
- (C) Learn certain foods aren't harmful.
- (D) All of the above

(iii)

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8. Which of the following is NOT an accurate description of the TID project?
- (A) First-in-the-nation
  - (B) First-in-the-world
  - (C) First-of-its-kind
  - (D) None of the above
9. What is unique about this proposed project?
- (A) Fixes some serious water use problems.
  - (B) Maximizes space around solar arrays.
  - (C) Resolves the climate change threat.
  - (D) Uses solar panels to protect canals.
10. Which of the following does NOT describe how the two elements — water and solar panels — work together?
- (A) Panels prevent water contamination.
  - (B) Solar panels reduce evaporation.
  - (C) Water canals help cool solar panels.
  - (D) None of the above

(iv) Researchers from the Massachusetts Institute of Technology have discovered that a specific set of neurons located in the auditory cortex in the brain respond to singing but not other sounds like speaking or instrumental music. “This work suggests there’s a distinction in the brain between instrumental music and vocal music,” says study co-author Sam Norman-Haignere, who was formerly an MIT researcher and is now a professor of neuroscience at the University of Rochester Medical Center, to *New Scientist*’s Jason Arunn Murugesu.

The research team measured neural responses to sounds using a technique known as electrocorticography (ECoG), a process of recording brain activity by placing electrodes directly on the brain’s surface. Electrocorticography is not typically performed in humans because of its invasiveness, but it is used to monitor epilepsy patients who are about to have surgery to treat seizures, per a statement from MIT. While not required, patients can ( A ) to participate in studies while they are already being monitored.

They tested 15 participants’ responses to 165 different noises, including toilet flushing, road traffic, instrumental music, speaking and singing. Some neurons responded almost exclusively to singing, though they also had a small response to instrumental music and speaking, per *New Scientist*. The study was published this week in *Current Biology*.

“The singing voice is the only musical instrument that almost everyone is born with, so one might expect us to have a rather different relationship with human song, relative to other kinds of music,” says Sophie Scott, a professor of cognitive neuroscience at University College London who was not involved in the research, to the *Guardian*’s Nicola Davis.

The researchers developed a new statistical method that allowed them to infer the types of neural populations that produced the data each electrode recorded, per the statement. “When we applied this method to this data set, this neural response pattern popped out that only responded to singing,” says Norman-Haignere, the lead author on the study, in a statement. “This was a finding we really didn’t expect, so it very much justifies the whole point of the approach, which is to reveal potentially novel things you might not think to look for.”

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11. Based on the context, which of the following best fits the space marked ( A ) in the second paragraph?
- (A) Agree
  - (B) Choose
  - (C) Elect
  - (D) All of the above
12. Why is the ECoG process rarely used on humans?
- (A) Can induce epileptic seizures.
  - (B) Expensive to conduct.
  - (C) Requires brain surgery.
  - (D) None of the above
13. What is the main idea of this passage?
- (A) One part of the brain is activated by singing.
  - (B) Researchers find a brain function anomaly.
  - (C) Scientists study how the brain processes sounds.
  - (D) The challenges of studying neural responses.

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14. What is the most serious side effect of dehydration?
- (A) Mental fog
  - (B) Overeating
  - (C) Stroke
  - (D) Not enough information given
15. Which of the following may not help with hydration?
- (A) Coffee
  - (B) Raw fruits
  - (C) Tea
  - (D) Tomatoes
16. What is the best way to avoid dehydration?
- (A) Avoid high-intensity exercise.
  - (B) Drink lots of water.
  - (C) Have a mix of hydrating foods and water.
  - (D) Reduce alcoholic drinks.

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17. What does Dr. Katz think of the diet in the study?
- (A) Better
  - (B) Considerable
  - (C) Optimal
  - (D) Typical
18. Which group would benefit the most from the “optimized diet”?
- (A) 80-year-olds
  - (B) Older women
  - (C) Younger men
  - (D) Younger women
19. What does one NOT do on the proposed “optimized diet”?
- (A) Focus on plant-based foods over meat and processed foods.
  - (B) Increase plant-based foods, decrease meat and processed foods.
  - (C) Replace meat with fruits, vegetables, legumes, grains and nuts.
  - (D) Shift emphasis from red meat to fruits and vegetables.

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20. Which of the following is NOT a goal of Aviation English?
- (A) Avoid misunderstanding.
  - (B) Facilitate communication.
  - (C) Promote safety.
  - (D) Save time.
21. Which of the following best describes Aviation English?
- (A) Complex
  - (B) International
  - (C) Practical
  - (D) All of the above
22. What is the best title for this passage?
- (A) Aviation English Helps Passengers Communicate with Flight Crew
  - (B) How Simplified Morse Code Changed the Safety of Air Travel
  - (C) International Language Promotes Intercultural Communication
  - (D) Pilots Use Universal Language to Enhance Flight Safety



(viii) There's a bit of debate about the origin of the phrase, "A picture is worth a thousand words." Some believe it's a proverb coined by the ancient Chinese philosopher Confucius; others say it's a modern turn of phrase invented by the advertising industry at the turn of the 20th century. But no matter its origin, the phrase begs a question: If art can express more than the words, then why was the alphabet ever invented? And the answer to that question still remains a bit of a head scratcher.

Writing is a relatively recent invention in human history, developed only about 5,000 years ago. For tens of thousands of years before that, history was largely handed down orally. "The creation of writing is the event that gave humanity a history," says Lydia Wilson in the new BBC documentary, "The Secret History of Writing." Wilson is a research associate at the Computer Laboratory at the University of Cambridge and a visiting scholar at the Ralph Bunche Institute for International Studies at City University of New York. "What prompted our ancestors to start writing things down, not for the ear, but for the eye?" she asks.

Archaeologists have taught us that before the alphabet was invented, "written" communication was in the form of pictures, known as hieroglyphics. They are believed to have originated around 3100 BCE, not as a way to capture history, but as a method for documenting business transactions during the rise of the city-state. Scholars believe that Mesopotamia, considered the "Cradle of Civilization," is the birthplace of many history-changing inventions and concepts, including writing.

But hieroglyphics were complicated to read and it's believed that only a small group of scribes was able to decipher the thousands of images that represented specific words. While it's not clear exactly when or how, researchers say sometime in the second millennium — between 1900 and 1700 BCE — an alphabetic system was developed that enabled more people to read and write.

"The giant leap came when somebody conceived of this matter, that you could draw a picture which represented something that someone could recognize but at the same time that sign could be used just for the *sound* of the thing it looked like, so the sound became drawn out or separated from the picture," says Irving Finkle of the British Museum in the documentary. "And, this giant leap was rather simple and it's something which could have occurred to a child, but nevertheless is of great lasting significance."

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<https://www.discovermagazine.com/the-sciences/why-was-the-alphabet-invented-anyway>

23. How were hieroglyphics originally used?

- (A) Capture history
- (B) Document business
- (C) Record news
- (D) All of the above

24. What was the result of developing an alphabetic system of written communication?

- (A) Easier to communicate at a distance.
- (B) History could be more easily recorded.
- (C) More people could read and write.
- (D) Scribes were no longer needed.

25. How is the transition from hieroglyphics to an alphabetic system of written communication described?

- (A) Conceptually simple
- (B) Giant leap
- (C) Significant
- (D) All of the above

- 〔Ⅱ〕 次の設問26～40の空所を補うものとして最も適当な語を、(A)～(K)の中から選びなさい。  
ただし、使われない語が含まれていることもあります。また、同じ語を繰り返して使うこともできます。空所に何も補う必要のない場合には (L) を選びなさい。

(A) at	(B) about	(C) by	(D) for	(E) from	(F) in
(G) of	(H) on	(I) out	(J) to	(K) up	(L) NO WORD

26. Robert was known for his outlandish stories so we took what he said with a grain \_\_\_\_\_ salt.
27. The information I provided in the application is accurate \_\_\_\_\_ the best of my knowledge.
28. Due to an unexpected turn \_\_\_\_\_ events, the theater intern was asked to perform in the play.
29. Taro set \_\_\_\_\_ for Boston to start a new job in the publishing business.
30. The reclusive author avoided being \_\_\_\_\_ the limelight in order to protect his privacy.
31. Some emerging Asian countries have come \_\_\_\_\_ the fore during the recent trade talks.
32. You're likely to spoil \_\_\_\_\_ your child by giving him everything he wants.
33. Employers should compensate their employees \_\_\_\_\_ any injuries in the workplace.
34. Daniel was just \_\_\_\_\_ to leave the house when he remembered he left the stove on.
35. The inattentive parents didn't realize their child was \_\_\_\_\_ of control and running around the store.
36. John saved his money bit \_\_\_\_\_ bit until he was finally able to buy a new car.
37. Maria wanted to lose weight, so she vowed to abstain \_\_\_\_\_ sweets and exercise daily.
38. Ichiro was excited to be \_\_\_\_\_ the wheel of his brand-new plug-in hybrid car.
39. The students were \_\_\_\_\_ against the deadline to submit their group project by noon.
40. Akiko seems much more \_\_\_\_\_ ease now that she's been working at the office for a month.

〔Ⅲ〕 次の設問41～50のA～Dのうち、誤った英語表現を含んだ部分がある場合にはA～Dの中の一つを、誤りがない場合にはEを選びなさい。

41. The exasperated mother concluded that it is no point in trying to force her son to do his homework. NO ERROR  
A B C D E
42. The company's new president will have much troubles dealing with the various trade unions. NO ERROR  
A B C D E
43. The priority seats for aged on public vehicles in Japan are called Silver Seats. NO ERROR  
A B C D E
44. June was so please to find out that she had been chosen to represent her town at the county fair. NO ERROR  
A B C D E
45. Although it happened last year, Olivia has been unable to tell her parents about losing her job. NO ERROR  
A B C D E
46. I find a fantastic new Indian restaurant near my office for our 25<sup>th</sup> anniversary. NO ERROR  
A B C D E
47. The archeologist found many items for daily use, some of whose were used in the Edo period. NO ERROR  
A B C D E
48. The manager claimed the equipments for the new stadium won't be on site for at least one month. NO ERROR  
A B C D E
49. The children walked noisily, one after another, into the classroom to begin their lesson. NO ERROR  
A B C D E
50. Jenny woke up especially early this morning to take a short walk and watch the sun raise. NO ERROR  
A B C D E

〔以下余白〕