

I. 以下の各文の（ ）内から、最も適切な語句をそれぞれ1つずつ選び、解答欄に記号で記しなさい。

1. We had arranged to meet at seven, but Taro was so late that, when he finally arrived, my friends and I (A. already have had B. already to have C. be having already D. had already had) dessert.
2. I think Pat finally trusts me. He admitted (A. his mistake to me B. me his mistake C. to me mistake D. to mistake me) and we're getting along much better now.
3. Why don't you ask Jane? She's (A. knowing to like B. knows likely C. likely knowing D. likely to know).
4. Psychology is the branch of social research (A. concerned with B. it is concerned with C. its concerns are D. that concerned with) the study of mind and thought.
5. There are times when Jack feels lonely, as he has neither a brother (A. and a B. neither a C. nor a D. without a) sister.
6. All (A. but B. not C. that D. without) Peter were able to get to class on time.
7. I hadn't seen Ken for nearly three years, (A. by time B. by the time C. in which time D. which time is) he had grown and become a really fine soccer player.
8. He was asked to open the window and, after pulling back the curtains, (A. did he so B. did so C. so did D. so did he).
9. Because the crowd was staring at the house of the soon-to-be princess, it was easy to guess (A. what B. what that C. which D. which it) was.
10. I know that it's early, but there aren't (A. a lot B. many C. much D. some) people here. In fact, it's a little scary.
11. I've only been studying for an hour and I'm (A. already B. any more C. still D. yet) exhausted.
12. The rain was both sudden and intense. As a result, the river rose (A. at an alarming pace B. at a surprising level C. to an alarmed level D. to a surprised pace) very quickly.
13. There are a growing number of villages in the countryside that are (A. longer not B. no longer C. not longer D. none longer) inhabited because of changes in the local economy.

14. Although John ran (A. as hard as B. as hardly as C. more hardly D. much hard) he could, he did not win the race.
15. I've had George over to my house a dozen times, but (A. never he has B. not he ever has C. not once has he D. not once he has) invited me to his house.
16. After losing the soccer game, I congratulated the winning team, (A. as all of us did B. as did all of we C. as did us all D. as us all did).
17. It was getting late when the young girls (A. had said B. said C. told D. were told) that they were hungry.
18. Barley, once (A. a crop grown primarily B. a grown crop primarily C. a primarily grown crop D. grown primarily a crop) for human use, is now largely used as animal feed.
19. There's a problem with the washing machine. I'll have the landlord (A. be speaking B. speak C. speaking D. to speak) to a plumber about it.
20. I found some of the candies Peter likes. I'll buy a box and (A. bring it to him B. bring to him it C. him it to bring D. to him I bring).

II. 下記文中の空欄（1）～（10）に入れるのに最適な語または句を，選択肢の中からそれぞれ1つずつ選び，解答欄に記号で記しなさい。

Screams are unmistakable, universally recognizable as *distress calls. A new study has found that all human screams are made in a particular way. “We asked ourselves what makes a scream a scream,” said a researcher. “It isn’t that it is always loud, high-pitched or shrill.”

The researcher, Dr. David Poeppel, and his colleagues (1) screams in movies and those recorded in a laboratory. The scientists found that all screams (2) a trait called roughness, which is a measure of how fast the loudness of a sound changes. In normal speech, loudness (3) between four and five hertz; for screams, the range is 30 to 150 hertz. The researchers also found that the roughness of a scream (4) as a measure of how alarming the call is. “The more roughness they have, the more scary people (5) the screams,” the researcher said.

Inspired by these findings, the researchers looked for other sounds with roughness. The only other signals (6) screams in this way were alarms like those on ambulances and fire engines. “This wasn’t known when they were (7), but it makes good sense,” Dr. Poeppel said. “These are sounds that are really precise, **obnoxious and attention-getting, and that’s what you want.”

The researchers also (8) brain activity in participants in the experiment using ***functional magnetic resonance imaging (fMRI) as they listened to screams and alarm signals. Screams (9) increased activity in the amygdala, a region of the brain used for processing and remembering fear, the scientists found. The more roughness a scream had, the more activity it (10) in the amygdala.

注

*distress call = 救難連絡

**obnoxious = 非常に不快な

***functional magnetic resonance imaging (fMRI) = 磁気共鳴機能画像法

1. A. analyzed B. determined C. illuminated D. resolved
2. A. allow B. contribute C. designate D. share
3. A. expands B. plays C. ranges D. spreads
4. A. assists B. attends C. delivers D. serves
5. A. aligned B. arrayed C. placed D. ranked
6. A. appearing B. coinciding C. relating D. resembling
7. A. arranged B. construed C. designed D. modeled
8. A. monitored B. overlooked C. revised D. supervised
9. A. impelled B. motivated C. ordered D. triggered
10. A. accomplished B. generated C. performed D. prevented

【出典】 Bhanoo, S. N. (2015). The secret to a good scream. *The New York Times*. July 16.

Ⅲ. 次の枠内に示された1～4の各文を入れるのに最も適した箇所を、下記文中の空欄 ～ から1つずつ選び、解答欄に記号で記しなさい。ただし1つの空欄には1文しか入らない。

1. A darkened octopus stands out clearly against a sandy bottom.
2. Others included climbing onto higher (underwater) ground, spreading its *tentacles and raising its mantle, which is the main part of an octopus body.
3. That signal could also be a way of avoiding a fight.
4. They aren't done yet, but one of them presented some of their initial findings at a meeting last month, and talked about two dozen examples of octopuses signaling their aggressive intent.

Some animals just aren't that social. Like octopuses. They don't live in groups. They don't have big **chatfests like prairie dogs. They don't write, they don't call. But new evidence shows that an octopus may signal its intentions when it is about to attack another octopus.

A group of researchers collaborated to record interactions between common Sydney octopuses off the Australian island of Tasmania. Their method was to put cameras on the sea floor in areas where there were plenty of these octopuses and then comb through hours and hours of video.

He showed video of one octopus moving swiftly toward another as it made itself look taller and turned very dark. Octopuses have a remarkable ability to change their color to blend in with their surroundings, like chameleons. But this color change is the opposite.

The researchers said there were hints in previous octopus studies of postures and behaviors like the ones he and his colleagues recorded. But there had been very little evidence of any signals between octopuses.

With this new study, they documented a number of intra-octopus signals of aggression—standing tall by rising up on the tentacles, and turning dark.

Most of the interactions don't culminate in an actual struggle. One of the researchers said that although they were still analyzing the video, the signals seem to say: "I'm this big. I'm this tall. And I'm certain that I'm not going to

back down.” F The target octopus could read the signals and decide that keeping his spot on a pile of shells is just not worth it. How many of the signals occur seemed to depend on how intense the encounter is. If all are displayed, then a fight is about to happen.

But sometimes, two octopuses just grow dark, slap tentacles and then settle down where they are. Perhaps it's an octopus treaty, with both sides laying down their many arms.

注

*tentacle = 触手

**chatfest = 雑談会

【出典】Gorman, J. (2015). Solitary octopuses' strong statements. *The New York Times*. July 13.

"Solitary Octopuses' Strong Statements" by James Gorman from The New York Times, Jul 13, 2015 © The New York Times.

IV. 以下の文中の枠内に1～4の文が入る場合、文意から考えてどの順で並べると最も適切か。下記の各問の答えを解答欄に記号で記しなさい。

最初の段落 At a glance, it seems a strange place to put a newborn: a bit of bedding and a miniature sleeping bag arranged in a cardboard box. Even so, that's the first place that many Finnish infants lay their little heads. And the simple setup is believed to be one reason that Finland now has one of the lowest infant mortality rates in the world.

1. Each year about 40,000 mothers do this and receive boxes, which come with bedding and about 50 other baby items, including clothes, socks, and even a warm coat for the icy northern winter.
2. Finland achieved this, in part, by giving all *mothers-to-be a baby box, provided they undergo a medical exam during the first four months of pregnancy.
3. Because of this, Finland needed a low-cost way to provide a safe place outside of parents' beds for infants to sleep as well as to encourage women to set aside old habits and see a doctor.
4. The program started in the late 1930s, when nearly one out of 10 infants in Finland died in their first year partly because they slept in their parents' beds or their mothers did not see a doctor during pregnancy.

最後の段落 The program worked, and there are efforts to extend the baby-box idea to a wider audience. A hospital in London recently began giving out the boxes on a trial basis. In Minnesota, a nonprofit group distributed the boxes to low-income families. A graduate student at Harvard formed an organization to distribute similar kits in South Asia. "When you move abroad, you realize that, wow, not every place has a baby box," said Sanna Kangasharju, who works in the Finnish Embassy in Washington. "It's a very efficient system."

注

*mother-to-be = これから母親になる人

設問

1. 最初の段落の後にすぐ続く文
A. 1 B. 2 C. 3 D. 4
2. 文1の後にすぐ続く文または段落
A. 2 B. 3 C. 4 D. 最後の段落
3. 文2の後にすぐ続く文または段落
A. 1 B. 3 C. 4 D. 最後の段落
4. 文3の後にすぐ続く文または段落
A. 1 B. 2 C. 4 D. 最後の段落
5. 文4の後にすぐ続く文または段落
A. 1 B. 2 C. 3 D. 最後の段落

【出典】 Rosenberg, E. (2016). Why Finland's newborns sleep in cardboard cribs. *The New York Times*. July 6.

V. 以下は “Scales, feathers and hair have a common ancestor” と題する，6 段落で構成される文章である。次の最初の段落に段落 1～4 を続ける場合，全体の論旨の展開から考えてどのような順で並べると最も適切か。下記の各問の答えを解答欄に記号で記しなさい。

最初の段落 Birds have feathers. Mammals have hair. Reptiles have scales. How did we get them? For a long time scientists thought the spikes, *plumage and fur characteristic of these groups originated independently of each other. But a recent study suggests that they all evolved from a common ancestor some 320 million years ago.

1. According to the researcher, no one had found placodes because the structures are extremely difficult to spot in developing reptiles. Whereas placodes in **avian and mammalian embryos last long enough that they are easy to see, reptilian placodes exist for a brief period of about 12 hours, and pop up on different locations depending on the species. “If you don’t look at the right place at the right time you don’t see any,” he said. “If you look too early you see nothing, if you look too late it’s already a scale.”
2. Researchers debated whether reptiles had lost them, or birds and mammals had independently developed them. “Now”, said a researcher, “we can put this debate to rest, because we found the placodes in all reptiles: snakes, lizards, and crocodiles.” In a paper the researchers report the first findings of the anatomical structures in Nile crocodiles, bearded dragon lizards and corn snakes.
3. The researchers did not originally set out to find placodes in reptiles; rather they were investigating why certain bearded dragons are born without scales. By analyzing the genomes of the naked bearded dragons, they narrowed down the ***culprit to a mutation in a single gene. The same gene disrupts placode development in birds and mammals, including humans.
4. This ancient reptilian creature—which gave rise to dinosaurs, birds and mammals—is thought to have been covered in scale-like structures. What that creature looked like is not exactly known, but the scales on its skin developed from structures called placodes—tiny bumps of thick tissue found on the surface of developing embryos. Scientists had previously found placodes on the embryos of birds and mammals,

where they develop into feathers and hairs, but had never found the bumps on a reptilian embryo before. The apparent lack of placodes in present-day reptiles lead to controversy about how these features first formed.

最後の段落 “We were like ‘Whoa! That’s the same gene,’” the researcher said. “There must be a link here.” When researchers investigated normal snakes, crocodiles and lizards they found placodes everywhere. Their findings unite birds, mammals and reptiles as descendants from the same ****lineage of ancient reptilian creatures that first developed placodes.

注

*plumage = 羽毛

**avian = 鳥類の

***culprit = 原因

****lineage = 系統

設問

1. 最初の段落の後にすぐ続く段落

A. 1 B. 2 C. 3 D. 4

2. 段落1の後にすぐ続く段落

A. 2 B. 3 C. 4 D. 最後の段落

3. 段落2の後にすぐ続く段落

A. 1 B. 3 C. 4 D. 最後の段落

4. 段落3の後にすぐ続く段落

A. 1 B. 2 C. 4 D. 最後の段落

5. 段落4の後にすぐ続く段落

A. 1 B. 2 C. 3 D. 最後の段落

【出典】 St. Fleur, N. (2016). Scales, feathers, and hair have a common ancestor. *The New York Times*. June 24.

"Scales, Feathers and Hair Have a Common Ancestor" by Nicholas St. Fleur from The New York Times, Jun 24, 2016 © The New York Times.

VI. 次の “Every pencil holds a promise” と題する文章では、米国人の著者がインド旅行での体験を綴っている。これを読み、以下の各問に答えなさい。

The next morning we went to Agra Fort, a stunning red temple within view of the Taj Mahal. But I couldn't pay attention to the architecture around me.

A My mind kept returning to thoughts about the children begging on the street, and I decided that I would ask one of them my question. They had absolutely nothing. If they could have anything, what would they want most?

I strayed away from my group and found a young boy with big brown eyes who was previously begging, but now sat alone. As I approached him to talk, a man came over to translate. I explained that I had a question for the boy. I was asking one child per country, if the child could have anything in the world, what would it be? I wanted to know, what would the boy want if he could have any one thing? He thought about it for a few seconds, then responded confidently:

“A pencil.”

“Are you sure?” I asked. He had no family, nothing, yet his request was so basic. B

More men came over and started chiming in. They prodded him, “You can have anything. He might give it to you!”

The boy remained constant with his wish: “A pencil.”

I had a No. 2 yellow pencil in my backpack. I pulled it out and handed it to him.

(1) As it passed from my hand to his, his face lit up. He looked at it as if it were a diamond. The men explained that the boy had never been to school, but he had seen other children writing with pencils. It shocked me that he had never once been to school. C Could something as small as a pencil, the foundation of an education, unlock a child's potential?

For me that pencil was a writing utensil, but for him it was a key. D It was a symbol. It was a portal to creativity, curiosity, and possibility. Every great inventor, architect, scientist, and mathematician began as a child holding nothing more than a pencil. E That single stick of wood and *graphite could enable him to explore worlds within that he would never otherwise access.

Up until that point, I had always thought that I was too young to make a difference. (2) I had been told that without the ability to make a large donation

to a charity, I couldn't help change someone's life. But through the small act of giving one child one pencil, that belief was shattered. *This is my thing, I thought. Rather than offering money or nothing at all, I'm going to give kids pencils and pens as I travel.*

注

*graphite = 黒鉛

設問

1. 以下の（ア）と（イ）の各文を入れるのに最も適した箇所を，上記文中の空欄 ～ から1つずつ選び，解答欄に記号で記しなさい。ただし1つの空欄には1文しか入らない。

（ア） I realized that even big waves start with small ripples.

（イ） It then started to settle in that this was the reality for many children across the world.

2. 下線部（1）を“it”の指すものを明らかにしながら和訳しなさい。

3. 下線部（2）を和訳しなさい。

【出典】 Braun, A. (2015). *The promise of a pencil: How an ordinary person can create extraordinary change*. Scribner: New York.

From THE PROMISE OF A PENCIL by Adam Braun.

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VII. 以下の設問に答えなさい。

In 100 to 150 words in English, write a short essay in response to the following statement.

You must always be honest with your friends.