

1 Answer questions (1)~(5).

(1) Choose the word or phrase that is most similar in meaning to the underlined word.

著作権の関係で問題文は掲載できません。

注) \*traffic snarls: traffic jams

- a. carefully
- b. one time
- c. significantly
- d. smoothly

(2) Choose the sentence that is true according to the following passage.

San Francisco has become the first city in the USA to ban facial recognition software. The city has said police and other public departments cannot use the software. San Francisco already uses surveillance cameras for reading car number plates, and police officers wear body cameras. There is facial recognition at airports. Many officials wanted to introduce facial recognition in the city to increase security. They said facial recognition technology would make it cheaper and faster for police to find crime suspects and identify missing people. An expert on information technology said: "A ban on facial recognition will make [San Francisco] frozen in time with outdated technology." There are many opponents of the technology, which is being widely used in other parts of the world. San Francisco official Aaron Peskin called facial recognition a "Big Brother" technology. Big Brother is a character in the book "Nineteen Eighty-Four" by George Orwell. The phrase Big Brother is now used to describe attempts by governments or authorities to increase surveillance and "spy" on citizens. Mr Peskin said: "We can have security without being a security state. We can have good policing without being a police state." He added that: "Part of that is building trust with the community based on good community information, not on Big Brother technology."

- a. Many people in San Francisco are against the use of facial recognition software.
- b. Facial recognition software has recently been introduced in San Francisco.
- c. San Francisco police have solved many crimes using facial recognition software.
- d. Using facial recognition software in San Francisco will make it difficult for the city to adopt new technology.

(3) Choose the sentence that fits the blank and is the best topic sentence.

\_\_\_\_\_. A study led by Australia’s Institute for Marine and Antarctic Studies discovered that balloons were the deadliest kind of plastic for seabirds. The research team said balloons were 32 times more likely to kill seabirds than hard plastics. They found that while balloons and other soft plastics accounted for only 5 per cent of plastics ingested\*, they were responsible for more than 40 per cent of deaths among seabirds. Lead researcher Lauren Roman said: “Hard plastic fragments may pass quickly through the gut\*, but soft plastics are more likely to become compacted and cause fatal obstructions.”

注) \*ingested: eaten

\*gut: stomach

- a. Scientists have made an alarming discovery about what kinds of seabirds ingest soft plastics.
- b. Scientists have made an alarming discovery about how soft plastics are entering the sea.
- c. Scientists have made an alarming discovery about what kinds of pollution are most harmful to seabirds.
- d. Scientists have made an alarming discovery that most deaths among seabirds were due to fragments passing quickly through the gut.

(4) Choose the word that best fits the blank.

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注) \*Common Core Standards: guidelines for educational standards in America

- a. exposing
- b. aligning
- c. helping
- d. leading

(5) Choose the sentence that best represents the main idea of the following passage.

The march of technology may seem unstoppable, but all things digital may have a way to go before they replace the traditional bedtime book—the *paper* one. A new study shows that paper books are better than e-books for bedtime reading. The study suggests that the good old printed book, with real pages that you turn with your fingers, makes parents and children interact more than they do when reading with an electronic book. Researchers from the University of Michigan studied how 37 pairs of parents and toddlers\* interacted with e-books and paper books. The researchers found that with electronic books, parents asked their children fewer questions and made fewer comments about the story. The study involved observing parents and children (aged two or three) reading from three different book formats. These were printed books, basic e-books on a tablet, and enhanced e-books with features such as animation, graphics and sound effects. The researchers discovered that the parents and toddlers interacted with each other less with both types of e-books than they did with the printed books. A researcher said that when they did speak, they were far likelier to talk about the device and the technology rather than about the story. Children were likelier to say things like “don’t push that button” or “don’t change the volume” than ask questions or make observations about the story.

注) \*toddlers: young children who are just learning to walk

- a. E-books are proving best for bedtime reading.
- b. Parents are reading more e-books than traditional books to toddlers.
- c. Traditional books are more suitable for bedtime reading than e-books.
- d. Parents and toddlers are interacting more today than before.

[出典]

- (1) “Uber Partners With Yulu For eBike Trial In India”, May 10, 2019, PYMNTS,  
<https://www.pymnts.com/news/ridesharing/2019/uber-yulu-ebike-bicycle-mobility-app-india>
- (2) “San Francisco bans facial recognition software”, May 17, 2019, Breaking News English,  
<https://breakingnewsenglish.com/1905/190517-big-brother.html>, 一部改
- (3) “Balloons deadliest plastic for seabirds”, March 24, 2019, Breaking News English,  
<https://breakingnewsenglish.com/1903/190324-balloons.html>
- (4) “Should Math Be a Main Focus in Kindergarten?”, February, 2012, Math & Reading Help,  
[http://mathandreadinghelp.org/articles/Should\\_Math\\_Be\\_a\\_Main\\_Focus\\_in\\_Kindergarten.html](http://mathandreadinghelp.org/articles/Should_Math_Be_a_Main_Focus_in_Kindergarten.html)
- (5) “Paper books better than e-books for bedtime stories”, March 28, 2019, Breaking News English,  
<https://breakingnewsenglish.com/1903/190328-paper-books.html>

2 Read the following article and answer questions (1)~(5).

- [1] A Dublin-based company plans to erect “mechanical trees” in the United States that will suck carbon dioxide (CO<sub>2</sub>) from the air, in what may prove to be the biggest effort to remove the gas blamed for climate change from the atmosphere.
- [2] The company, Silicon Kingdom Holdings (SKH), will build 1,200 carbon-cleansing metal columns within a year with which it hopes to capture CO<sub>2</sub> more cheaply than with other methods, following a successful test in Arizona over a two-year period, it said. That is enough to suck up nearly 8,000 cars worth of emissions per year of CO<sub>2</sub>. “We have to figure out how to act to get to a climate that is safe,” said the technology’s inventor, Klaus Lackner, a professor at Arizona State University. SKH’s pilot would be the world’s largest “direct air capture” operation to date, said Jennifer Wilcox, a professor of chemical engineering at the U.S.-based Worcester Polytechnic Institute, who is not involved in the project.
- [3] Carbon capture is gradually gaining momentum, with the United Nations saying in a report last year that the technology is likely needed to keep the rise in global temperatures below catastrophic levels. SKH expects its two-year pilot, possibly in California, to capture about 36,500 metric tons of CO<sub>2</sub> a year, it said—the equivalent of nearly 7,750 vehicles driven for a year. Full-scale farms would be 100 times bigger.
- [4] The company’s “mechanical trees”, as the firm has dubbed them because they are tall and slender and absorb CO<sub>2</sub> just like trees, are fitted with filter-like components to absorb the CO<sub>2</sub>, a photo of a prototype showed. The device uses wind to blow air through its system rather than an energy-intensive mechanism, it said.
- [5] While capturing CO<sub>2</sub> from industrial facilities and power plants has a decades-long commercial history, “direct air capture”, which pulls the gas directly from the atmosphere, is a burgeoning field with only a handful of players, said Wilcox. Swiss firm Climeworks has so far led the market, alongside Canada-based Carbon Engineering and U.S.-based Global Thermostat, she said. The companies compress the high-concentration CO<sub>2</sub> they capture and then can sell it for use in industrial applications, including making drinks fizzy, creating fuel and extracting oil.

[6] While the high price of direct air capture has long been viewed as an impediment\* to scaling up the technologies, SKH's cost is less than \$100 per metric ton for pure CO<sub>2</sub>, it said. "The \$100 a ton is important because I think that's the point where things start to get economically interesting," Lackner told the Thomson Reuters Foundation. "You can buy liquid CO<sub>2</sub> which is delivered by truck in order to fill fire extinguishers and myriad other things for prices between \$100 and \$200 a ton."

[7] SKH would not provide information about how much building the pilot would cost. It said it was "in discussions with a range of potential funders and strategic partners from the aviation, energy and food and beverage industries".

[出典] "Do 'mechanical trees' offer the cure for climate change?", Sebastien Malo, May 5, 2019, Thomson Reuters Foundation,  
<https://www.reuters.com/article/us-usa-climatechange-carboncapture/do-mechanical-trees-offer-the-cure-for-climate-change-idUSKCN1S52CG>, 一部改

注) \*impediment: something that interferes with progress

- (1) In which of the following paragraphs does the author provide details about how the mechanical trees operate?
  - a. Paragraph 1
  - b. Paragraph 2
  - c. Paragraph 3
  - d. Paragraph 4
  
- (2) In which of the following paragraphs does the author explain how captured CO<sub>2</sub> can be used?
  - a. Paragraph 2
  - b. Paragraph 3
  - c. Paragraph 4
  - d. Paragraph 5
  
- (3) In which of the following paragraphs does the author talk about the cost-effectiveness of capturing CO<sub>2</sub>?
  - a. Paragraph 4
  - b. Paragraph 5
  - c. Paragraph 6
  - d. Paragraph 7
  
- (4) According to this article, how did this new carbon capture device get its name?
  - a. From its appearance and its ability to absorb CO<sub>2</sub>.
  - b. From its attached filter-like components.
  - c. From its Dublin-based company's location.
  - d. From its passive use of wind that blows air through its system.
  
- (5) What is the main point of this article?
  - a. Mechanical trees can collect the same amounts of CO<sub>2</sub> as real trees.
  - b. CO<sub>2</sub> gas is a valuable commercial product.
  - c. A new carbon capture device shows great potential to reduce atmospheric CO<sub>2</sub>.
  - d. Additional funding needs to be devoted to research on carbon capture techniques.

3 Follow the directions and write sentences in English.

- (1) Write a question to complete the conversation below.

A: Have you already applied for the summer study-abroad session?

B: No, I haven't. When is the deadline?

A: It's tomorrow. \_\_\_\_\_

B: Yes, that would be great if you could help me complete the application.

- (2) Write a question to complete the conversation below.

A: Is it too far to walk to the train station from here?

B: Not at all. I walk there all the time.

A: \_\_\_\_\_

B: Yes, you can make it. The next express train will arrive at 8:00 and it's 7:00 now.

- (3) Write a question to complete the conversation below.

A: Have you tried the new restaurant that recently opened in the shopping mall?

B: Yes. I went there for lunch three times this week.

A: \_\_\_\_\_

B: Not too expensive. Most lunch specials are about 600 yen.

- (4) Write a complete sentence to answer the following question using the information written in Japanese.

A: I'm off to the supermarket. Do you need anything?

B: Yes. I need a liter of milk. \_\_\_\_\_ [最も値段の安いものを購入]

A: Sure. If you think of anything else you need, send me a LINE message.

- (5) Write a sentence to answer the following question using the information written in Japanese.

A: I started my new part-time job this weekend.

B: Really? I was looking for a job recently. How much is the pay?

A: \_\_\_\_\_ [1時間につき 1,000 円]

B: That's pretty good. Maybe I will apply there for a position.



4 次の語義に当てはまる単語を下の a～q の中から一つずつ選び、解答欄に記号で答えなさい。

- (1) use up something completely
- (2) meet someone face to face, expecting to argue or fight
- (3) go on doing something again after stopping
- (4) guess something before it happens
- (5) pay no attention to something
- (6) not guilty of a crime
- (7) believing firmly that you can do something
- (8) speak or think well of someone or something
- (9) something that stands in the way and stops progress
- (10) created by people and therefore unnatural

- |               |             |               |              |
|---------------|-------------|---------------|--------------|
| a. anticipate | b. approve  | c. artificial | d. attend    |
| e. confident  | f. confront | g. consume    | h. diligent  |
| i. elegant    | j. ignore   | k. innocent   | l. interfere |
| m. obstacle   | n. offend   | o. resolve    | p. resume    |
| q. silly      |             |               |              |

5 次の英文を読んで、下の問いに答えなさい。

John Eastwood, a psychologist at York University in Toronto, created a website called [www.boredomlab.org](http://www.boredomlab.org) to share ideas and new research about boredom and how it impacts motivation. We all know what it feels like to be bored, he says, but it's harder to define exactly what boredom is. His definition is this:

Boredom is the unfulfilled desire for satisfying activity. It's an unpleasant state that involves difficulty focusing our attention, a sense that time is passing slowly, and feeling tired and lethargic\* or irritable and restless. (Eastwood 2014)

We have all experienced boredom, whether in our own high school physics classes, at staff meetings, waiting in line at the Department of Motor Vehicles, waiting for previews to end so our movie will start, or even sitting through a movie we didn't want to see. During action films with too many characters, I inevitably lose the thread of the plot. I have slept right through two *Lord of the Rings* movies (which I went to with my sons) — I was so disconnected from the action and so bored that I literally couldn't prop\* my eyes open. This is what I think about when I see students nod off\*.

In her book *Boredom in the Classroom*, Gayle Macklem (2015) explains that boredom can be mild, unpleasant, or in the most severe cases, actually painful. Think of the most boring meeting you've ever been to—and imagine you cannot distract yourself with your phone, computer, papers to grade, or even a colleague to talk to. Researchers at the University of Virginia found that many people—in fact, two-thirds of men—would rather give themselves painful electrical shocks than sit idly like this for just fifteen minutes (Ledford 2014).

Vogel-Walcutt (personal interview, October 16, 2016) said students become bored in class for four major reasons:

- when the work they are doing feels meaningless,
- when activities are abstract or repetitive,
- when students feel confined in their environment, and
- when students have little power or control.

When teenagers are in one of these situations, she said, arousal levels in their brains drop. They struggle to maintain focus and energy levels. Like Abraham and Hannah\*, they mentally check out. "It reduces their ability to take in information," Vogel-Walcutt explains. "You just don't have the energy to pay attention." In short, she says, "If a student isn't happy and isn't awake, then he or she isn't learning."

[出典] From Beat Boredom: Engaging Tuned-Out Teenagers by Martha Sevetson Rush, copyright © 2017, reproduced with permission of Stenhouse Publishers. [www.stenhouse.com](http://www.stenhouse.com)

注) \*lethargic: having no energy

\*prop: hold up

\*nod off: fall asleep

\*Abraham and Hannah: the names of two of the author's students

(1) **boredom** と学習の関係についての筆者の考えはどのようなものか。本文に即して、句読点も含めて、50字以内の日本語で説明しなさい。

(2) 次の問いに対するあなたの答えを、50語程度の英語で書きなさい。

Write about something you did in your school years that you thought was worthwhile and meaningful.