

L 英語 問題

注意

1. 試験開始の指示があるまでこの問題冊子を開いてはいけません。
2. 解答用紙はすべてHBの黒鉛筆またはHBの黒のシャープペンシルで記入することになっています。HBの黒鉛筆・消しゴムを忘れた人は監督に申し出てください。(万年筆・ボールペン・サインペンなどを使用してはいけません。)
3. この問題冊子は16ページまでとなっています。試験開始後、ただちにページ数を確認してください。なお、問題番号はI～Vとなっています。
4. 解答用紙にはすでに受験番号が記入されていますので、出席票の受験番号が、あなたの受験票の番号であるかどうかを確認し、出席票の氏名欄に氏名のみを記入してください。なお、出席票は切り離さないでください。
5. 解答は解答用紙の指定された解答欄に記入し、その他の部分には何も書いてはいけません。
6. 解答用紙を折り曲げたり、破ったり、傷つけたりしないように注意してください。
7. この問題冊子は持ち帰ってください。

マーク・センス法についての注意

マーク・センス法とは、鉛筆でマークした部分を機械が直接よみとって採点する方法です。

1. マークは、下記の記入例のようにHBの黒鉛筆で枠の中をぬり残さず濃くぬりつぶしてください。
2. 1つのマーク欄には1つしかマークしてはいけません。
3. 訂正する場合は消しゴムでよく消し、消しきずはきれいに取り除いてください。

マーク記入例：

A	1	2	3	4	5
	○	○	●	○	○

 (3と解答する場合)

I . 次の文を読み、下記の設問 A・B に答えよ。解答は解答用紙の所定欄にしるせ。

It's one of the most fundamental things that humans do. Smile. Newborns can manage it instinctively, and this is sometimes misinterpreted by new parents as a reaction to their presence, although it's not until six to eight weeks of age that babies smile in a social way. That new parents interpret the first smiles in a positive way reflects the complexity of smiling: There is the physical act and then the interpretation society gives to it—the smile and what the smile means.

On a physical level, a smile is clear enough. There are 17 pairs of muscles controlling expression in the human face, plus the orbicularis oris, a ring that goes around the mouth. When the brain decides to smile, a message is sent out over the sixth and seventh *cranial nerves. They branch across each side of the face from the eyebrows to the chin, connecting to a combination of muscles controlling the lips, nose, eyes, and forehead.

Culturally, smiling can be seen throughout human history, from the grinning Greek sculptures of 2,500 years ago right up to emojis. Emojis with smiling faces are by far the most common in online messages. The most popular emoji of all—the face with tears of joy—was picked as the 2015 Word of the Year by Oxford Dictionaries. Just as this emoji expresses more than mere happiness—tears adding the ironic twist—smiles themselves convey so much more, too.

A 2016 study published in the *Journal of Nonverbal Behavior* questioned thousands of people in 44 cultures about sets of photographs of eight faces—four smiling, four not. Most people considered the smiling faces to be more honest than the non-smiling ones. This difference was huge in some countries, such as Switzerland, Australia, and the Philippines, but small in others, such as Pakistan, Russia, and France. In a few countries, such as Iran, India, and Zimbabwe, there was no trustworthy benefit to smiling at all. The researchers concluded that where trust was low, smiling was less likely to influence other people. If anything, it could cause suspicions.

There is exactly one smile in the Old Testament—Job, ironically, in the book of suffering—though in many passages faces are said to “shine,” which could mean smiling or could mean heavenly radiance. Eastern religions, however, often use the

smile to denote enlightenment. The Buddha and various religious figures were described with quiet smiles, though the original Buddhist texts are as devoid of smiling as the Bible. Jesus weeps but never smiles.

There are various medical conditions that can disable us from smiling. A common one is facial paralysis caused by a stroke. Rarer is Moebius syndrome, a facial paralysis caused by missing cranial nerves, where you can't smile, frown, or move your eyes from side to side. "You essentially have a mask on your face," says Roland Bienvenu, 67, who has Moebius syndrome. Without being able to smile, others "can get an incorrect impression of you," he says. "You can almost read their thoughts. They wonder: 'Is something wrong with him? Has he had an accident?'"

An uneven smile can be as problematic as no smile at all. "I have half a smile, so even with that I am able to successfully convey emotion," writes Dawn Shawn, born with a teratoma—a fast-growing ^{**}tumor that was interfering with her throat. "The hardest part for me was seeing photos of myself smiling, because smiling exaggerates the fact that half my face doesn't move very much. But eventually I learned to own it. That is me. That is how I look."

While losing a smile is a serious blow at any age, it can have a particular impact on younger people who are forming the bonds that will carry them through the rest of their lives. "It's a huge problem," says Tami Konieczny, supervisor of occupational therapy at the Children's Hospital of Philadelphia. "When you look at somebody, the first thing you see is their face, their ability to smile or not smile, or an asymmetrical smile. It's your social world. If someone can't read your facial expressions, then it's difficult to be socially accepted. It's hugely damaging for kids. I had kids digitally editing their pictures. They are taking mirror images of their good side and copying it, editing their own pictures before posting them to social media."

Scientists have shown that smiles are far easier to recognize than other expressions. What they don't know is why. "We can do really well recognizing smiles," says Aleix Martinez, a professor of electrical and computer engineering at The Ohio State University. "Why is that true? Nobody can answer that right now. We don't know. We really do not know. We have a classical experiment, where we showed images of facial expressions to people, but we showed them very rapidly, for

only 10 milliseconds. I can show you an image for just 10 milliseconds and you can tell me it's a smile. It does not work with any other expression.”

Fear takes an exposure time of 250 milliseconds to recognize—25 times as long as a smile, “which makes absolutely no sense, evolutionarily speaking,” Martinez says. “Recognizing fear is fundamental to survival, while a smile isn’t necessarily so. But that’s how we are wired.”

Studies have shown that smiling faces are judged as more familiar than neutral ones. And it’s not just us that can recognize smiles more easily. “This is true both for humans and for machines,” says Martinez. Although scientists have been studying smiles for about 150 years, they are still at the stage of trying to categorize types of smile among the millions of possible facial expressions. “One of the fundamental questions in the scientific literature right now is, how many facial expressions do we actually produce?” says Martinez. “Nobody knows.”

Scientists such as Martinez believe that smiles—as well as frowns and other facial expressions—are remains of humanity’s distant pre-linguistic past. Human language started developing as far back as 100,000 years ago, but our expressions reach back further still, even to before our origins as human beings.

“Before we could communicate by words, we had to communicate with our faces,” Martinez says. “Which brings us to a very interesting, very fundamental question in science: Where does language come from?” One of the theories is that it evolved through the facial expression of emotion, he says. “First we learned to move our facial muscles—I’m happy. I feel positive with you! I’m angry. I feel disgust.” Then a grammar of facial expressions developed, and over time that evolved into what we call language. So when we wonder how something as complex as language evolved from nothingness, the answer is that it almost certainly started with a smile.

* cranial nerves : 脳神経

** tumor : 腫瘍

A. 次の1～10それぞれに続くものとして、本文の内容ともっともよく合致するものを、各イ～ニから1つずつ選び、その記号をマークせよ。

1. One idea of the first paragraph is that

- イ. newborn babies do not have the ability to smile.
- ロ. most human smiles are based on instincts.
- ハ. the smiles of newborn babies have no meaning at all.
- ニ. the meaning of a smile depends on an interpretation.

2. Results of the 2016 study published in the *Journal of Nonverbal Behavior* suggest that,

- イ. in all countries tested, people associated a smiling face with honesty.
- ロ. in some countries tested, a smiling face did not help gaining people's trust.
- ハ. in all countries tested, people felt happy to see a smiling face.
- ニ. in most of the countries tested, people associated non-smiling faces with honesty.

3. The underlined word "devoid" (paragraph 5) is closest in meaning to

- イ. afraid.
- ロ. critical.
- ハ. lacking.
- ニ. supportive.

4. According to the passage, Roland Bienvenu

- イ. had a tumor that caused him to lose his smile.
- ロ. wears a mask to hide his medical condition.
- ハ. lost his smile due to a stroke.
- ニ. is unable to frown or move his eyes sideways.

5. The underlined word “own” (paragraph 7) is closest in meaning to
- イ. accept.
 - ロ. control.
 - ハ. promote.
 - ニ. regret.
6. Children with medical conditions that affect their smile
- イ. have a wide variety of therapeutic options.
 - ロ. are more likely than grownups to suffer emotionally.
 - ハ. become more sensitive to the facial expressions of others.
 - ニ. tend to rely on social media more than other children.
7. Aleix Martinez has trouble understanding why
- イ. it takes longer for us to recognize a smiling face than a fearful one.
 - ロ. evolution made it possible for the human face to convey so many feelings.
 - ハ. it takes longer for us to recognize a fearful face than a smiling one.
 - ニ. evolution made it possible for us to recognize expressions so quickly.
8. One idea of the last paragraph is that facial expressions
- イ. developed to add nuance to verbal communication.
 - ロ. are not able to express meaning as well as words can.
 - ハ. have not significantly changed since ancient times.
 - ニ. evolved into language over time.
9. The passage makes all the following points EXCEPT that
- イ. the human smile has the same basic meaning across cultures.
 - ロ. scientists have not yet discovered the number of facial expressions we produce.
 - ハ. smiles depend on the action of a variety of muscles and nerves.
 - ニ. machines can recognize smiles more easily than other expressions.

10. The most appropriate title for this passage is

- イ. Smiling: The Key to a Happy Life.
- ロ. What's in a Smile?
- ハ. Communicative Styles and the Smile.
- ニ. Why Is the Human Face So Expressive?

B. 文中の下線部 Recognizing fear is fundamental to survival (第10段落) を、25字以内で和訳せよ。ただし、句読点は合計字数に含まれる。

II. 次の文を読み、下記の1～10それぞれに続くものとして、本文の内容ともっともよく合致するものを、各イ～ニから1つずつ選び、その記号を解答用紙の所定欄にマークせよ。

Modern advice about regularizing sleep comes from an understanding of the body's rhythms, which are seen as being independent of, but interactive with, external forces. Nathaniel Kleitman launched his career in the late 1930s by studying the natural rhythms of human sleep, that is, the daily cycle in the body's physiological processes, untouched by the rhythms of the sun rising and falling or the needs of society. Along with his graduate student Bruce Richardson, Kleitman holed himself up in Kentucky's Mammoth Cave and studied what happened to his sleeping and waking patterns in the absence of changes of light, temperature, and social obligations. Their goal was to see if they could adapt themselves to a six-day week made up of twenty-eight-hour days.

While Kleitman himself was unable to adapt, his younger colleague readily did so, which led Kleitman to conclude that the sleep-wake rhythm of humans was not a steady clock, but a complex system that could be reset to different environmental and psychological signals. As anthropologist Matthew Wolf-Meyer has pointed out, however, Kleitman specifically forbade napping in his experiment: Even this pioneering sleep researcher had assumed that uninterrupted sleep was somehow "natural." In addition, his insistence that "true" human sleep rhythms could be understood independently of changes in temperature and levels of light reflected a sense that one could study sleep best by isolating it from its natural living conditions. In a sense, his project was like trying to study the breathing systems of fish out of water.

Kleitman's main claim to scientific fame was his later discovery, with Eugene Aserinsky in 1953, of the REM sleep cycle and its association with dreaming. But this earlier research about sleep rhythms tells us a great deal about one major purpose of sleep research in the twentieth century: Kleitman's work was funded by corporate and military sponsors who wanted to see how adaptable humans were to the rhythms of forced schedules, and they wanted advice about how to create productive employees and soldiers. Kleitman pushed back against some of the more cruel practices, including frequent radical changes in workers' shifts. Yet he still

treated sleep patterns as something that should be controlled in a machine-like way. His advice about invariant sleep routines was conveyed in his important 1939 work, *Sleep and Wakefulness*, and was recirculated in a 1942 article in *American Business*.

Other scientific research challenges the notion that humans sleep the same way every night. The field of chronobiology, which studies the effects of time on living organisms, supplies interesting clues about the flexibility of the human sleep system, which depends on multiple factors: genetically encoded rhythms tied to the brain's chemical surges, length of time spent awake, availability and type of light, force of habit (known as *entrainment*), and so on. In an early 1960s experiment that helped launch the field, the German physician and biologist Jürgen Aschoff took Kleitman's Mammoth Cave experiment several steps further. Many scientists at that point believed that one could never create a "time-free" environment for the human body, because internal rhythms were somehow dependent on the earth's rotation. In response, Aschoff and his colleague, physicist Rütger Wever, built a carefully controlled sleep space which consisted of two apartments within a hillside that shielded against everything that could indicate the passage of time to research subjects: It lacked windows, it was completely soundless, it maintained a consistent internal temperature, and it could even block shifts in the earth's electromagnetic fields. (The sleep space did have electric lighting, which the subjects were free to turn on and off.) The subjects of their experiment entered their apartments through a corridor separated by two thick doors, which could be opened only one at a time. In order to provide their supplies, they placed shopping lists in this corridor—along with *urine samples, so that researchers could examine their metabolic and hormonal output. In some experiments, subjects were alone in the apartments; in others, groups lived in the same apartment so that the researchers could examine how the body clocks of different individuals affected one another.

Most subjects retained a basic pattern of sleeping approximately one-third of the time. But after a few weeks, strange things began to happen. The majority of subjects retained something close to a twenty-four-hour pattern; but a significant minority—close to a third—began to carve up their time in forty-hour segments, while a smaller number experienced days that were significantly shorter than twenty-four hours. Even stranger, these new extended or shortened "days"

conflicted with the basic rhythms of other body functions: Changes in body temperature and hormonal flow occurred in twenty-four to twenty-five hour cycles, indicating that the internal timing system of humans works on multiple levels, and that not all systems are internally timed to work together. The sleepers' reported sense of time provided further evidence of "internal ^{**}desynchronization." When those who had a warped sense of the length of a day were asked to estimate the passage of time, they were not far off for intervals of short duration (a minute). But when they were asked to estimate the passage of an hour, their responses corresponded with the stretching or contracting of time indicated by their new sleep-wake cycles.

These internal timing systems, subsequent researchers have found, are governed by a small group of neurons. But given that the internal sleep clock is so wildly variable, as well as independent from the timing of other body functions, this multiplicity of timing systems must have some evolutionary basis. Contemporary chronobiologists believe that internal desynchronization has evolved out of the body's need to remain flexible to changes in the external environment. If all of the body's clocks were set to one rhythm, one could never adapt to changes in season, or to deviations from a regular pattern of sleep and waking. The search for one ideal, natural, evolutionary, prehistoric, unchanging, universal pattern of sleep seems to be contradicted not only by the diversity of sleep across the globe, but by the interconnectedness of the body's own mysterious inner processes.

*urine : 尿

**desynchronization : 脱同期

1. The main purpose of the first paragraph is to
 - イ. introduce an experiment by Nathaniel Kleitman.
 - ロ. explain the relation of sleep to the body's rhythms.
 - ハ. raise a challenge to modern advice about sleep.
 - ニ. review the history of major ideas about sleep.

2. One finding of Kleitman's research in Kentucky's Mammoth Cave was that the sleep-wake pattern of humans was
- イ. based on a simple biological system.
 - ロ. dependent on social obligations.
 - ハ. as regular as a clock.
 - ニ. capable of being controlled.
3. The passage suggests that Kleitman's research on human sleep rhythms was
- イ. approved by Matthew Wolf-Meyer.
 - ロ. his main source of scientific fame.
 - ハ. influenced by the needs of corporations.
 - ニ. criticized in the book, *Sleep and Wakefulness*.
4. The underlined word "invariant" (paragraph 3) is closest in meaning to
- イ. equal.
 - ロ. fixed.
 - ハ. forgotten.
 - ニ. important.
5. The passage suggests that Jürgen Aschoff and Rütger Wever
- イ. conducted their experiment in Kentucky's Mammoth Cave.
 - ロ. did not succeed in creating a "time free" environment.
 - ハ. served as subjects in their own experiment.
 - ニ. helped to establish the field of chronobiology.
6. The results of Aschoff's research showed all of the following EXCEPT that
- イ. subjects' body functions stayed connected to sleep-wake cycles.
 - ロ. a third of the subjects started to experience forty-hour days.
 - ハ. living in the sleep space had an impact on subjects' own sense of time.
 - ニ. most subjects continued to spend about one-third of their time asleep.

7. The underlined word “warped” (paragraph 5) is closest in meaning to
- イ. creative.
 - ロ. irregular.
 - ハ. private.
 - ニ. worried.
8. The passage suggests that evolution designed our bodies
- イ. to sleep in a single block of time each day.
 - ロ. in isolation from the natural habitat.
 - ハ. for flexible sleep patterns.
 - ニ. to fit the needs of industrial society.
9. The author would probably agree that
- イ. most people in modern society sleep much more than they need to.
 - ロ. it's important for people to get the same amount of sleep every night.
 - ハ. the findings of research in the field of chronobiology are not reliable.
 - ニ. there are still many things about sleep that scientists don't understand.
10. The most appropriate title for this passage is
- イ. How to Get a Good Night's Sleep.
 - ロ. Sleep: Is There an Ideal Pattern?
 - ハ. Sleeping Habits Around the World.
 - ニ. Sleep: Why Do We Need It?

Ⅲ. 次の1～8それぞれの空所を補うのにもっとも適当なものを、各イ～ニから1つずつ選び、その記号を解答用紙の所定欄にマークせよ。

1. () his age into consideration, the stamina he showed was remarkable.

イ. Bringing ロ. Getting ハ. Putting ニ. Taking

2. He had () begun his speech before the accident took place.

イ. early ロ. scarcely ハ. timely ニ. yet

3. Many people tend to skip breakfast, () is not good for their health.

イ. so ロ. something ハ. what ニ. which

4. Don't worry, you were in no way to ().

イ. accuse ロ. blame ハ. claim ニ. punish

5. The sunset at the beach was beautiful () description.

イ. above ロ. beyond ハ. over ニ. than

6. If () in the refrigerator, this piece of fish will last for two days.

イ. keeping ロ. kept ハ. to keep ニ. you keep

7. At no time () I thought of such an absurd thing.

イ. did ロ. have ハ. should ニ. would

8. The contract requires that the room () by the first of next month.

イ. be available ロ. can available
ハ. could be available ニ. must available

IV. 次の空所(1)～(4)を補うのもっとも適当なものを、それぞれ対応する各イ～ニから1つずつ選び、その記号を解答用紙の所定欄にマークせよ。

A. Talking with the cashier

Cashier: There's a problem with your credit card.

Jennifer: What's wrong with it?

Cashier: It was declined.

Jennifer: (1)

Cashier: Do you have another card I could try?

Jennifer: I only have one card.

Cashier: Do you have cash, perhaps?

Jennifer: I don't have any cash on me.

Cashier: Then, I'm afraid you're not going to be able to purchase these items today.

Jennifer: (2)

- (1) イ. Where did it go?
ロ. I must have left it at home.
ハ. Can I have a receipt, please?
ニ. You're kidding me!

- (2) イ. I've got everything, thanks.
ロ. Can I give it a try?
ハ. I don't need a bag, thank you.
ニ. Okay, I'll be back tomorrow.

B. A phone call to the car repair shop

Ethan: I heard that you might have solved the problem with my car.

Mechanic: Well, actually, I'd like you to come in to talk about some more tests that I'd like to run on your engine.

Ethan: (3)? I need to get my car fixed right away.

Mechanic: It's complicated, so please come in this afternoon. But the car won't

be ready for you to drive home.

Ethan: So it's in pretty bad shape, then.

Mechanic: (4). I just want to talk to you about your options.

- (3) イ. Did you do the tests yourself
□. Can't we do it over the phone
ハ. Where should I go next
ニ. Is there anyone else
- (4) イ. There's nothing to say about it
□. It's not really worth the effort
ハ. Take a moment to remember
ニ. I really can't say yet

V. 次の空所(1)～(5)それぞれにもっとも適当な1語を補い、英文を完成せよ。解答は解答用紙の所定欄にしるせ。

Richard Rodriguez, author of a well-known intellectual autobiography, recalls his reading habits as a grade school student. By the (1) he entered high school, he had read hundreds of difficult books that most students would not encounter until college. “But I was not a good reader,” he writes, “merely bookish, I lacked a (2) of view when I read.” Now, as an adult, Rodriguez recognizes that he had formerly been too passive a reader, too ready to accept what he read at face (3), and unable to enter into any sort of dialogue with texts because he lacked ideas of his own. (4) be able to have a conversation with texts is essential to critical reading and writing. All it requires is curiosity, a readiness to wonder and pose questions, and a degree of confidence in your right to do so. These are precious skills, yet ones that (5) possesses to some degree.