

2015年度

M 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。

Some of my fondest childhood school memories come from excursions to museums. On those trips we could race through millennia of Earth's history simply by walking from one room to the next, coming face to face with Egyptian mummies, dinosaur bones, moon rocks, and astonishing displays of jewels and precious metals from civilizations unimaginably remote from our own. Such adventures were usually heavily orchestrated by teachers keen to ignite our passion for knowledge but mindful of the risks that we'd go crashing into priceless Ming pottery or climb inside fragile *sarcophagi. It must have been a delicate balancing act for them!

I still visit lots of museums and galleries, and I'm still fascinated by the sweep of history that they put on display, and the feeling of authentic contact with remote times and places, but now I'm freed from the careful guiding hands of teachers, and I go wherever I want. As a psychologist interested in how we navigate through space, it's this kind of freedom, and what we do with it, that interests me the most. Public spaces like museums, galleries, and theme parks stand somewhat apart from most of the other kinds of places that we human beings inhabit. Other kinds of institutional spaces, like hospitals, schools, or government buildings, have a finely ordered kind of spatial structure. Because they are designed to fulfill very specific kinds of functions, the business of guiding visitors or employees is managed with the utmost care. There are hard distinctions between public and private spaces, lots of "rules" both implicit and explicit that make clear where to go, where to line up, where to stand, and where to sit. In contrast, cultural and entertainment sites place a premium on the simple pleasure of wandering. In fact, one of the reasons that we enjoy such spaces as much as we do is that they enable in us the freedom to simply follow our impulses, our feelings, our senses and our curiosity.

Given this, you might think that the task of a museum^{**} curator could be an easy one: simply collect up an interesting assortment of^{***} artifacts, scatter them throughout an attractive and expansive space, and then let the chips fall where they may. But nothing could be further from the truth. Although an important part of a museum or gallery curator's job consists of the carefully planned acquisition of

historical artifacts or works of art, no less important is the planning of a visitor's museum experience. Understanding how we move from place to place in a building that invites pleasurable exploration, what attracts the eye, and how an exhibit affects our senses and our emotions is not only an essential part of a curator's job, but it is also a legitimate and fascinating subject of exploration for psychologists.

One revealing case study, conducted by the Space Syntax group at University College London, shows the power of the organization of space to affect museum experience. This group was recruited to analyze the use of space in one of London's great galleries—the Tate Gallery. They used some simple methods to determine how the gallery was being experienced by visitors, including head counts in different rooms, measures of movement from room to room, and measurements of the rate at which people entered and left different exhibit areas within the gallery. They combined these behavioral measurements with some very interesting computer analyses of the shape, or structure of the spaces within the gallery.

The authors of the report concluded that quite apart from what kinds of artifacts were placed in which locations in the gallery, the movements of visitors could largely be predicted by nothing more than the shape of the building and the ways that the hallways interconnected different rooms within the space. At the Tate, visitors took advantage of a strongly interconnected central hallway or “main street” to explore the gallery space, moving back and forth from main street to the interesting side alleys. What this meant overall was that visitors were able to move easily and casually through the space, enjoying an arrangement of displays that could be visited in a number of different ways, but always maintaining some sense of orientation within the larger gallery. The authors of the report argued that it was this ease, the underlying logic of the space, and an organization that allowed visitors the freedom to explore the space in a manner of their own choosing rather than by being forcibly pushed from one painting to the next, that made the gallery such a pleasant space. What I find most interesting about their study is the suggestion that how a space is put together can have enormous impact on how we explore it quite regardless of what kinds of things are placed in the space. This suggests that an artful curator can use space effectively to sculpt a visitor's experience, perhaps even without the visitor being aware that they are doing anything other than

wandering completely at will.

More recent research in visitor experiences in galleries has begun to take advantage of the wider availability of technology that allows us to collect very fine-grained information from visitors regarding their movements and even some of their feelings as they move from place to place. Indoor motion tracking can tell us where a visitor pauses, which path they take from one place to another, and what captures attention. Small, unnoticeable sensors that measure heart rate and skin reaction can give us a window into how a visitor feels as they move.

The eMotion project is an ambitious new program of study in Europe designed to explore just these aspects of the museum or gallery experience. Participants visit galleries while wearing a special data glove that not only tracks their movements but also records their heart rate and skin reaction. Special software is used to convert the visitor's experiences in the gallery into a map that contains details about where they went and how they felt while they were there. In addition to the mapping data, participants are interviewed during their visit so that the researchers can collect basic demographic data (age, gender, socioeconomic status, artistic knowledge) and qualitative information about the visitor's overall experience in the gallery. This qualitative information can be correlated with the mapping data to generate an incredibly detailed portrait of museum-going behavior.

These methods are very new—some of the very first findings are just coming to publication now—but they are already beginning to yield some very interesting insights into what happens to our minds when we visit a gallery. For example, one revealing analysis showed marked differences between the emotional responses of visitors who discussed what they were seeing with friends during their visit compared with those for whom the visit was more of a solitary and interior experience. The latter group showed stronger emotional responses to what they saw, and more evidence of what museum specialists have described as “moments of presence”—that is, moments during which visitors slipped away from ephemeral distractions and became absorbed by the work of art that they were inspecting. So one simple message from this research is that, if you are planning to go to a gallery to really *experience* the art, it might be better to go alone or at least to suspend discussion with your companion until the visit is over.

I'm sure that these preliminary findings will be followed up by many more substantial insights into the unique ways that humans engage with galleries, museums and other kinds of exhibition spaces. I have some doubts that the scientific approaches that I've described will ever reach all the way to the bottom of a rich artistic experience in a gallery, but I fully expect that such approaches to museum design, informed by the tools and principles of psychology, will lead to more interesting, playful and exciting visitor experiences.

* sarcophagi : 石棺

** curator : 学芸員

*** artifacts : 文明の産物, 工芸品

1. The underlined word "them" (first paragraph) refers to

- イ. museum adventures.
- ロ. school memories.
- ハ. students.
- ニ. teachers.

2. Museums are different from institutional spaces like hospitals because museums

- イ. allow people to wander.
- ロ. have no implicit rules.
- ハ. allow people to enter private spaces.
- ニ. have no particular function.

3. The Space Syntax group of researchers reported that the biggest influence on visitor experience was

- イ. the uniqueness of the artifacts.
- ロ. the size of the museum.
- ハ. the way artifacts were displayed.
- ニ. the layout of the building.

4. The passage suggests that, at the Tate Gallery, visitors

- ㄱ. tend to avoid the central hallway.
- ㄴ. find it easy to keep track of where they are.
- ㄷ. tend to follow a set path.
- ㄹ. find it difficult to locate the displays they want to see.

5. The underlined word “sculpt” (paragraph 5) is closest in meaning to

- ㄱ. cut.
- ㄴ. dominate.
- ㄷ. express.
- ㄹ. shape.

6. The eMotion project allows researchers to measure all of the following EXCEPT

- ㄱ. where visitors go as they move around.
- ㄴ. how visitors interpret the exhibits.
- ㄷ. where visitors stop and look at exhibits.
- ㄹ. how visitors feel as they move around.

7. The eMotion project has provided evidence suggesting that

- ㄱ. interviewing visitors enhances their appreciation of art.
- ㄴ. discussing exhibits with others allows more focused inspection.
- ㄷ. art can be experienced more deeply if viewed alone.
- ㄹ. museum-going behavior is poorly understood.

8. The underlined word “ephemeral” (paragraph 8) is closest in meaning to

- ㄱ. expensive.
- ㄴ. false.
- ㄷ. important.
- ㄹ. temporary.

9. The author would most likely agree that

- イ. building design has little influence on the museum experience.
- ロ. museums should encourage visitors' curiosity.
- ハ. experimental approaches fully capture the museum experience.
- ニ. the task of museum curators is not difficult.

10. The most appropriate title for this passage is

- イ. Museum Design and the Visitor Experience.
- ロ. Why is London's Tate Gallery So Popular?
- ハ. Human Behavior in Institutional Spaces.
- ニ. How Do People Understand and Appreciate Art?

II. 次の文を読み、下記の1～9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。

Long flights across many time zones often leave us feeling fatigued, sleepy, irritable, and generally out of sorts. And it's not just because of poor sleep on the plane and dehydration from the altitude—the feelings persist for several days.

Jet lag is caused by our 24-hour body clock lagging behind the rapid change of clock time over the flight. Our body clock has a strong effect on the times across the day we feel alert and when we feel sleepy. The body clock consists of our *circadian rhythms. For people who regularly sleep from 11 p.m. to 7 a.m., all of their circadian rhythms naturally adjust to ensure best sleep during those times. In the middle of the sleep period, around 4 a.m., the body drops to its lowest body temperature, known as T_{min}. This is also the time when **melatonin hormone release is highest.

The adjustment of these rhythms is not caused directly by the timing of our sleep period, but indirectly by the timing of darkness during sleep and visual light stimulation when we are awake. Once the body clock becomes stabilized, it is resistant to change. So, after less than a day in the air, our body clock is still on home time when we arrive at our destination. This is where the problem arises.

Take the example of flying from Sydney to London. When there is a nine-hour time zone difference between the two cities, if you arrive in London at 7 a.m. in the morning, your body clock will be telling you it's 4 p.m. By 1 p.m. London time, you're likely to want to take a nap. But try not to fall into a deep sleep; your body will be telling you it's 10 p.m., so you'll have to resist the urge to sleep through until your body clock time of 7 a.m. This, of course, would mean waking up at 10 p.m. London time ready to start your "day."

If you manage to stay awake until early evening, you will still be woken up early the next morning by your early timed body clock and early "wake-up zone," making you feel tired the next day. Until you can shift the timing of your body clock later by about eight to nine hours, your jet lag will continue to cause extreme tiredness in the late afternoon and disturbed sleep at night.

Your lowest body temperature shifts from 4 a.m. Australian time to 7 p.m. UK time. You must now delay your body clock by nine hours. The good news is that

you can re-time the body clock. The strongest effect is from appropriately timed visual light stimulation.

But take care to get the timing right so you move your body clock in the right direction. Light stimulation before your body reaches its lowest body temperature (T_{min}), usually about 2 hours before your typical wake-up time, will delay your body clock to a later time. However, light after T_{min} will shift your body clock earlier.

For a Sydney to London trip, you would need to delay your body clock by about nine hours to most quickly adjust your body clock to London time. Fortunately, normal daylight can be used as it occurs before T_{min} up to about the T_{min} time. So spend the day outdoors, if possible. Even a cloudy day is better than staying indoors.

However, after your body clock has been delayed by a few hours from outdoor light, your T_{min} will now have moved "out of reach" of the delaying effect of daylight, since only light administered close to T_{min} has a strong re-timing effect. Your body clock re-timing may stop well short of the eight to nine hour delay needed for full readjustment. In that case, you should use artificial indoor light stimulation in the later evening to complete the jet lag cure.

Flying across many time zones in the opposite direction (eastward) can present a more challenging readjustment. Flying across seven time zones to the US West Coast from Sydney, for instance, requires an advance of the body clock (re-timed earlier). This is the same type of change needed when we go onto ^{***}daylight savings time in the spring. That causes some disruption of sleep and daytime alertness for a few days in many people. Now multiply that change by seven times and it will give you some perspective on this jet lag disruption.

Upon arriving at your US West Coast destination, your body clock timing will be seven hours too late. The time of your T_{min} may be as late as 11 a.m. instead of 4 a.m. Your body won't be ready for sleep until the wee hours of the morning and it will want to sleep most of the day away (an extreme example of the delayed sleep pattern of many adolescents).

Again, light can be used to re-time your internal clock. To maximize the re-timing effect you should avoid very early bright light up until about 10 a.m. because being before your T_{min} it might shift your clock in the wrong delay direction. Instead, you should get bright light preferably for several hours starting around 10 a.m. Then,

as your body clock becomes timed earlier, the beginning of the light stimulation can start earlier (between 8 a.m. and 9 a.m.) to complete the readjustment job.

One way to reduce the time taken to overcome jet lag in your destination is to do some readjustment of your sleep period and light exposure before leaving on your trip. Jet lag calculators can work out the specific times for your light exposure before and after the trip. Taking melatonin can also assist this re-timing process: a low-dose (0.5 to 1 mg) short-acting preparation taken at the desired bedtime in your destination. In conjunction with appropriately timed bright light, melatonin can greatly reduce the duration of your jet lag.

But should you even attempt to re-time your body clock? That depends on how long you're staying in the new time zone. If your stay is short (one to three days), it may be less disruptive to not go through any readjustment but simply keep your body clock on "home" time. That way you also avoid readjusting again when flying home. Most airline flight crew follow this rule. But if your stay overseas is going to be at least a week and if you want it to be more pleasurable, you can minimize jet lag by appropriately timed light stimulation and melatonin.

* circadian : 24時間の周期で変動する

** melatonin : メラトニン (睡眠作用のあるホルモン)

*** daylight savings time : 夏時間

1. Jet lag happens when the body clock
 - イ. no longer keeps time well.
 - ロ. does not respond to light.
 - ハ. no longer affects sleepiness.
 - ニ. does not match clock time.

2. Circadian rhythms are caused mainly by
 - イ. clock time.
 - ロ. exposure to light.
 - ハ. flying time.
 - ニ. body temperature.

3. The author uses the example of flying from Sydney to London to show
- イ. the difficulty of noticing one's own body clock.
 - ロ. the importance of sleeping deeply before departure.
 - ハ. the difficulty of readjusting one's own body clock.
 - ニ. the importance of taking naps during the flight.
4. Jet lag caused by flying over many time zones in a westward direction should be cured with
- イ. a delay of the body clock.
 - ロ. indoor rather than outdoor light.
 - ハ. an advance of the body clock.
 - ニ. another long plane flight.
5. The underlined word "wee" (paragraph 11) is closest in meaning to
- イ. dark.
 - ロ. early.
 - ハ. late.
 - ニ. light.
6. The passage suggests that to minimize jet lag people who have flown eastward from Japan to New York should first try to
- イ. get bright light before their Tmin.
 - ロ. sleep whenever they feel sleepy.
 - ハ. get bright light after their Tmin.
 - ニ. avoid all bright light.
7. The underlined word "conjunction" (paragraph 13) is closest in meaning to
- イ. combination.
 - ロ. comparison.
 - ハ. connection.
 - ニ. contrast.

8. One idea of the passage is that

- イ. people often fail to notice their own jet lag.
- ロ. the treatment of jet lag depends on the direction of travel.
- ハ. people should try to treat their jet lag on all trips.
- ニ. the experience of jet lag depends on one's personality.

9. The most appropriate title for this passage is

- イ. Sleeping Problems of International Travelers.
- ロ. Recent Research on the Experience of Jet Lag.
- ハ. How to Recognize and Cure Sleep Disorders.
- ニ. Jet Lag: Causes, Symptoms, and Treatments.

IV. 次の会話文A・Bの空所(1)~(4)それぞれ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。

A.

Becky: Hi, John. Thanks for meeting with me during your lunch break. (1)

John: No problem. (2) What's going on?

Becky: I was offered a new job. Should I take it? (3)

John: Well, I think it's time for a change.

Becky: Do you really think so?

John: Yes. I've been listening to you complain for over a year now. Trust me.

Take the job. (4)

1. イ. I am sorry about it.
ロ. I really appreciate it.
ハ. It is so nice to meet you.
ニ. I should have made an appointment.
2. イ. I have to stay in my office all day.
ロ. I have never had green tea latte.
ハ. I am happy to help.
ニ. I like walking.
3. イ. Or should I quit my current job?
ロ. They are closing their new office.
ハ. They want to downsize the staff.
ニ. Or should I stick with my current job?
4. イ. You need a break.
ロ. How do you get it?
ハ. What do you have to lose?
ニ. It will hurt your name.

B.

Pat: Hi, Jim. What happened? (1)

Jim: I had to have a tooth pulled out today.

Pat: (2)

Jim: I don't even want to talk about it. It killed me!

Pat: (3)

Jim: It took almost an hour. But the worst part was getting a shot. They had to give me three of them!

Pat: Well, I guess you've learned a good lesson. (4)

1. 1. Your face is glowing.
□. Your face looks swollen.
ハ. You're wearing a long face.
ニ. Your nose is bleeding.

2. 1. Did you feel painful?
□. Did you have your teeth cleaned?
ハ. Did it end quickly?
ニ. Did it hurt a lot?

3. 1. How long were you in the dentist chair?
□. How long did they put you in sleep?
ハ. How long did you have to wait?
ニ. How long did it take for you to eat?

4. 1. You have to have good dental insurance.
□. You have to make an appointment.
ハ. You have to take good care of your teeth.
ニ. You have to control the pain.

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。

Kale is a leafy green vegetable. It is easy to (1) as it can withstand cold temperatures and many different climates. Until the end of the middle ages, kale was (2) of the most common green vegetables in Europe. Recently kale has been gaining popularity in the United States among health enthusiasts (3) of its nutritious value; it is (4) in fiber, vitamins, and minerals. Kale can be eaten (5) or cooked. It can be steamed, boiled, baked, or stir-fried. In Asia, kale is often used as an ingredient in vegetable stir-fries.