

英語

(医学部)

— 2月7日 —

解答はすべて解答用紙に記入して提出しなさい。

1

次の英文を読み、問2、問3は問い合わせに答え、問1、問4～問9は文を完成させなさい。答えは最も適切なものを、それぞれA～Eの中から一つ選びなさい。問10は指示に従ってTかFを選びなさい。

Since they were first invented, airplanes have landed in a linear manner on straight runways. However, there is another option, known as a circular runway, which has no beginning or end. The unique design of this alternate type of runway has seen several significant milestones as it has been explored over the last 100 years. Each phase was in reaction to the changing needs of the aviation industry.

To understand the basic concept of a circular runway, imagine a regular runway with a landing surface in a straight line. Then visualize this surface connected end-to-end to form a circle of smooth concrete that is banked, or sloped, at a 15-degree angle downward toward the center of the circle. The key benefit of this design is that planes can fly into the wind and land safely at any point on the circle. Although planes must land with one wing lower than the other to match the angle of a circular runway, doing so also naturally helps slow them down, as gravity pulls objects toward the center.

The original idea for the above design was proposed by H. T. Hanson, an American inventor, and was presented in the magazine *Popular Science* in 1919. The article described a hypothetical ring-shaped runway held up by metal support columns placed on the top of buildings within a large city. The imaginary runway surface itself was constructed of metal grating, allowing light and air to reach the streets below. Although a working runway was never tested, Mr. Hanson claimed it would allow easier access to airports for anyone in the city. Despite this advantage, the concept of airplanes landing on the tops of buildings in the middle of a city was likely considered too radical by both the government and the public to be implemented at that time.

In 1964, James R. Conrey, a U.S. Navy officer, patented his updated version of the concept because the increasing size of aircraft made longer runways necessary. This, as well as the need to improve safety, prompted the U.S. military to conduct actual experiments. U.S. military pilots from flying services tested the idea on the General Motors Desert Proving Ground Track in Mesa, Arizona, a facility normally used to test cars. Contrary to expectations, the test pilots concluded that landing on a circle required little flight training for them to adjust to the new landing procedure and that it was suitable for various types of aircraft. Unfortunately for Conrey, however, progress stalled until the early 21st century because existing airport infrastructures only used straight runways and completely new air traffic control (ATC) procedures would need to be developed.

As of 2017, a visionary thinker, Henk Hesselink, is championing the cause of circular runways. After having seen videos of dangerous cross-wind landings, Hesselink formed a research team at the National Aerospace Laboratory in the Netherlands. Their computer simulations indicate that redirecting aircraft to land at various locations on a circle can save fuel, reduce noise, and lower travel times. In addition, a circular runway with a circumference equal to the length of three linear runways could handle the air traffic of four linear runways. Nevertheless, since more concrete would be needed for the construction of one circular runway than for four linear runways, it would be more expensive in the short-term. Mr. Hesselink believes that the benefits outweigh the drawbacks, particularly in terms of environmental and safety benefits gained by more efficient airport operations.

Although complex computer simulations have shown that the idea of a circular runway is feasible with existing

technology, it will require public acceptance of the design, new ATC procedures, and the reconstruction of airports. In addition, there is already increasing public pressure to improve air travel, lower ticket costs, and reduce the environmental impact of the aviation industry; as air traffic increases, these goals cannot be as easily achieved with the traditional runway design. To paraphrase Mr. Hesselink, it may be difficult to imagine what airports of the future will look like, but the best place to start could be on a ring of concrete.

問1 If a golf ball were placed on the smooth circular runway described in the second paragraph, it would _____.

- ア. not roll at all
- イ. roll toward the inside
- ウ. roll toward the outside
- エ. roll back and forth

問2 According to the third paragraph, what did Hanson believe would be a benefit of his proposal?

- ア. The runways would provide shade for the city below.
- イ. The runway support columns would be ring-shaped.
- ウ. Airport designers could write magazine articles.
- エ. People could get to the airport with less effort.

問3 According to the fourth paragraph, what pressing needs inspired the U.S. military to test a circular runway?

- ア. increased safety and longer runways for bigger airplanes
- イ. decreased travel time and longer runways for bigger airplanes
- ウ. increased safety and efficient land use at small airports
- エ. decreased travel time and efficient land use at small airports

問4 According to the fourth paragraph, U.S. military pilots felt that landing on a circular runway would require _____ training.

- ア. considerable ATC
- イ. little simulator
- ウ. extensive ground
- エ. minimal flight

問5 In the fifth paragraph, championing the cause is closest in meaning to _____.
(A)

- ア. studying the history of the idea
- イ. thinking up the idea
- ウ. supporting the idea
- エ. backing away from the idea

問6 According to the fifth paragraph, an outcome of the circular runway design is that airports would handle _____ stretch of runway.

- ア. less air traffic on a longer
- イ. the same air traffic on a shorter
- ウ. the same air traffic on a longer
- エ. less air traffic on a shorter

問7 According to the final paragraph, Mr. Hesselink considers his research to be _____.

- ア. the first step in a process that will prevent the use of circular runways
- イ. a part of the ongoing process that will result in some new form of runway
- ウ. a stage in a process that will eventually see runways become unnecessary
- エ. the final phase in the complicated process of developing runway technology

問8 According to the passage, the concept of a circular runway was _____.

- ア. designed, built, and tested in American cities by Mr. Hanson
- イ. invented by Mr. Hesselink's team in the Netherlands
- ウ. updated and patented by U.S. Naval officer James R. Conrey
- エ. studied by the U.S. government and airports in the 21st century

問9 According to the passage, the concept of the circular runway was _____, in that order.

- ア. developed as an idea for a city, tested in the desert, and studied in a computer simulation
- イ. studied in a computer simulation, tested in the desert, and developed as an idea for a city
- ウ. tested in the desert, developed as an idea for a city, and studied in a computer simulation
- エ. studied in a computer simulation, developed as an idea for a city, and tested in the desert

問10 According to the passage, mark "T" if the statement is true, and mark "F" if the statement is false.

1. A circular runway has two designated points: one for takeoffs and one for landings.
2. Metal grating is required for a circular runway's landing surface.
3. The circular runway was first suggested as an elevated structure.
4. The first real-world test of a circular runway was completed at an automobile-testing site.
5. Hesselink's team has worked to advance a concept that was first presented almost a century ago.

次の1～10の英文の空所に入る最も適切な語(句)を、それぞれア～エの中から一つ選びなさい。

1. So () he failed the course and needed to repeat it the following year.
 ア. terrible was his final essay that イ. his final essay was terrible that
 ウ. terrible that his final essay was エ. his final essay that was terrible
2. My son may only be two years old, but he is very smart () his age.
 ア. in イ. between ウ. for エ. within
3. I find these long lecture series really ().
 ア. exhausted イ. exhausting ウ. exhaustion エ. exhaust
4. () painted the team mascot's face on the gym wall at the new high school?
 ア. Was it who that イ. Was that it who ウ. Who it was that エ. Who was it that
5. It is not only what she has said () also what she has done that upsets us.
 ア. and イ. but ウ. so エ. for
6. Childish () he is, he is still serious about supporting his family financially.
 ア. so イ. yet ウ. as エ. while
7. Both employees () students last night at the language testing center worked more than two hours.
 ア. assisting イ. were assisted ウ. assist エ. had assisted
8. Those after-school activities have been canceled by the administration, ()?
 ア. have they イ. they have ウ. they haven't エ. haven't they
9. At the concert, there was a young dancer on the stage who was () dressed.
 ア. beautiful イ. beauty ウ. beautifully エ. beautify
10. As of now, it () more than three years since he graduated from medical school and started his residency.
 ア. has been イ. will have been ウ. was エ. had been

3

次の1～10の英文を読み、下線部の意味に最も近い語(句)を、それぞれA～Eの中から一つ選びなさい。

1. At the intersection, John ignored my instructions and abruptly turned right.
ア. gradually イ. suddenly ウ. accidentally エ. independently
2. All postgraduate students need to amend their reports before resubmitting them.
ア. cite イ. publish ウ. summarize エ. modify
3. Because the teacher had implemented interactive activities during the class, student participation increased.
ア. employed イ. abandoned ウ. evaluated エ. accepted
4. During the meeting, the boss made an announcement that was so unexpected that it was difficult to take in what he had said.
ア. transcribe イ. quote ウ. depict エ. comprehend
5. The elderly tend to tighten their belts after retiring from their jobs.
ア. become frugal イ. become wealthy ウ. become generous エ. become content
6. It is the mission of our restaurant to serve only wholesome and delicious food.
ア. cheap イ. healthy ウ. fattening エ. expensive
7. There is ample room for further expansion of this international center.
ア. adjoining イ. abundant ウ. adjustable エ. abnormal
8. American psychologists and philosophers argue that strong motivation is necessary for learning.
ア. perspective イ. recitation ウ. incentive エ. conclusion
9. Laboratory scientists should handle all fragile glassware with care.
ア. delicate イ. transparent ウ. gorgeous エ. handy
10. The social worker had infinite patience with all the difficult cases he had to handle.
ア. no イ. little ウ. sufficient エ. endless

4

次の2つの会話文を読み、3はその意味・内容に合うように文を完成させ、1, 2, 4~8は問い合わせに答えなさい。答えは最も適切なものを、それぞれA~Eの中から一つ選びなさい。

Customer: Excuse me. I would like to return this camera lens. Is this the right place for that?

Clerk: It certainly is. How may I help you?

Customer: When I take off the lens cap like this, you can see it. I know it's small, but it's right on the lens, on the left side. See? It has a tiny crack. It was like that when I opened the package. I'm a forensic photographer, so the photos I take have to be very clear.

Clerk: Wow, a forensic photographer? You must see some strange things.

Customer: Yeah, that's why I work for several magazines as a freelance wildlife photographer in my free time. Giraffes and zebras provide a welcome break, but they aren't always cooperative photo subjects, and any issue with equipment can cost me a valuable shot!

Clerk: I understand, but don't worry; we have a customer-friendly service policy. Let me have a look... It's hard to see at arm's length... Wait... Yes, it's definitely damaged. That's strange, because this manufacturer has a high level of quality control. They rarely have issues with their lenses, and it's been at least three years since I've seen a problem with this brand. For this to happen with one of their products is incredible!

Customer: I know. That's why I buy from them. What are the details of the store's exchange policy? I've got the receipt. What other documentation do I need?

Clerk: Well, besides that, you need the original packaging, but there's no need for the original store bag or promotional material. Also, you'll need to sign this return form. I'll take a photo of the damage for our records and then send it back. I'll check now to see if I have another one right here on the shelf so we can take care of it today.

Customer: Thanks. Let's see... I actually have everything here with me, so while you do that, I'll sign the form. Here's the packaging.

Clerk: Good news! We have one. I'll take the form and the box. And, here's your replacement. Is there anything else I can help you with?

Customer: No, thank you. I was actually a little worried because a friend of mine thought it might not be possible to replace the lens. But he shops at discount stores.

Clerk: Well, we have a policy of standing by our products and selling them at reasonable prices.

Customer: That's great! Oh, I forgot. I need to get a new tripod!

1. What is the problem with the lens?

ア. It has a missing cap.	イ. It doesn't fit the camera.
ウ. It's defective.	エ. It's the wrong model.

2. What does the customer do as a second job?

- Ⓐ. photographs crime scenes
- Ⓑ. takes pictures of animals
- Ⓒ. writes stories for magazines
- Ⓓ. collects information on criminals

3. To exchange the product, the customer needs to provide the product, _____, and a receipt from the store.

- Ⓐ. the packaging, a photo of the merchandise
- Ⓑ. the packaging, a completed return form
- Ⓒ. a photo of the merchandise, the store bag
- Ⓓ. the store bag, a completed return form

4. Was the customer satisfied with the outcome of the interaction with the clerk?

- Ⓐ. No, because the shop had no replacement item.
- Ⓑ. No, because the clerk was rude and refused to help.
- Ⓒ. Yes, because the clerk understood the problem and offered a tripod.
- Ⓓ. Yes, because the customer was able to exchange the lens for a new one.

Antonio: Hey, Tim. What do you know about the study abroad program we have with that school in Europe?

Tim: You mean the year-long one in Germany, right? Where you stay with a host family while taking our regular classes online? I know something about it; my friend John did it. The best part is that it's twice as long as the more popular ones in Southern Europe, which are just for six months, so you can really pick up the language. Of course, those other programs cost less since they're much shorter, and places like Barcelona are pretty cheap to live in. Because John was a Northern European studies major, he chose the program in Hamburg last summer, but he went to Barcelona a bunch of times and even visited Turkey.

Antonio: Cool! It's in Berlin this time. I only have two years of university left, and I want to spend some time out of the country before graduation. But most importantly, I want to be able to see some of the countries we've been studying in our European history class, like France and Hungary, while I'm there.

Tim: You can visit other countries on any of the programs to Europe. I mean, if you have the money to go to one country, how much more would it cost to see some other ones once you're there? Remember that three-month program I did in Rome last year? I also got to see France and Greece!

Antonio: You know, it would be great if I could even see Russia and Ukraine over the long summer holiday. I know there are cheaper exchange programs, but my parents are more likely to give me permission if I can persuade them that I'm going to learn a lot about other cultures. I couldn't get a scholarship, but I have enough money saved from my part-time job. And since my grandmother is going to help pay for graduate school, the year-long one sounds like the best option for me. I want to make it count, especially since the school only lets us join one program in our last two years.

Tim: Then what are you waiting for? Get down to the study abroad program office now!

Antonio: Thanks, I will! See you later.

5. How long and where does Antonio want to study abroad?

ア. six months in Berlin イ. six months in Rome
ウ. one year in Berlin エ. one year in Rome

6. Why did Tim's friend John study in Hamburg?

ア. The city was related to his academic studies. イ. His interest was in Southern European history.
ウ. He only had time for a six-month program. エ. The Barcelona program was far too expensive.

7. Who or what is most likely paying for Antonio's study abroad program?

ア. Antonio himself イ. Antonio's parents
ウ. Antonio's grandmother エ. Antonio's scholarship

8. Which three countries does Antonio say he wants to visit while on an study abroad program?

ア. Sweden, France, and Russia イ. Hungary, Russia, and Ukraine
ウ. Italy, Spain, and Greece エ. Germany, Hungary, and Turkey

5

次の問1～4の英文を読み、話の流れに沿って意味が通るように並べ替えた場合、最も適切なものはどれか。それぞれア～エの中から一つ選びなさい。

問1 1. This is why the phrase “the tip of the iceberg” is used to describe a situation which represents only a small part of a larger problem.

2. Icebergs are large pieces of freshwater ice that break off from glaciers and ice shelves.

3. Because of their position, it is often difficult to see or estimate their size or shape below the water.

4. Once they are floating in the water, usually only about 10% of the volume is visible above the surface.

ア. 2 → 1 → 3 → 4

イ. 4 → 1 → 3 → 2

ウ. 2 → 4 → 3 → 1

エ. 4 → 2 → 1 → 3

問2 1. This dance form reached the height of its popularity in France during the reign of Louis XIV.

2. Catherine de Medici, an Italian aristocrat, introduced it to France when she moved there.

3. Later, as it declined in France, it became more popular in other countries.

4. Ballet originated in the Italian Renaissance courts of the 15th century.

ア. 2 → 1 → 4 → 3

イ. 4 → 1 → 3 → 2

ウ. 2 → 3 → 4 → 1

エ. 4 → 2 → 1 → 3

問3 1. These are subdivided into cities, towns, villages, or wards.

2. All these areas are often clearly defined, though their borders may change over time.

3. Geographical borders are one characteristic that defines a nation.

4. Within these borders are divisions known as states, provinces, or prefectures.

ア. 2 → 1 → 3 → 4

イ. 3 → 2 → 4 → 1

ウ. 2 → 4 → 3 → 1

エ. 3 → 4 → 1 → 2

問4 1. Next, to begin set up, tap “Settings” and follow the instructions.

2. At this point, the tablet will start up, and the Flat-Tab logo will briefly appear.

3. After the logo fades out, the welcome screen will appear, and the device will be ready for set up.

4. Welcome to your new Flat-Tab tablet! To activate, press and hold the power button for at least three seconds.

ア. 2 → 1 → 4 → 3

イ. 4 → 1 → 3 → 2

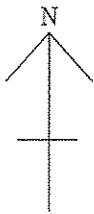
ウ. 2 → 4 → 3 → 1

エ. 4 → 2 → 3 → 1

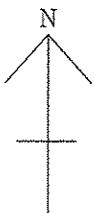
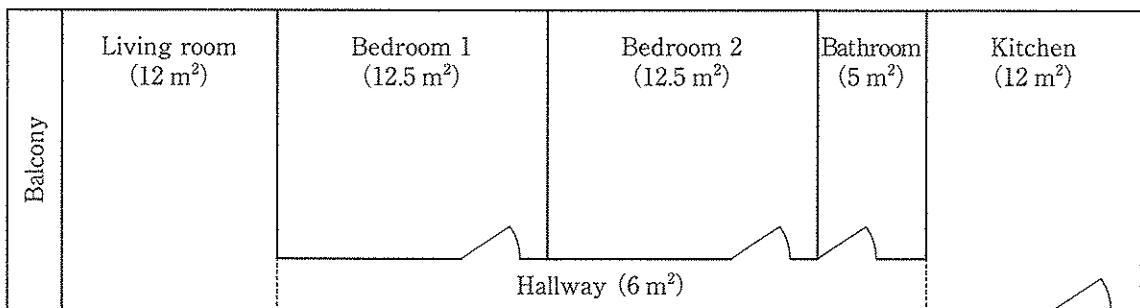
6

次の図を見て、英文の空所(1)～(4)に入る最も適切なものを、それぞれア～エの中から一つ選びなさい。

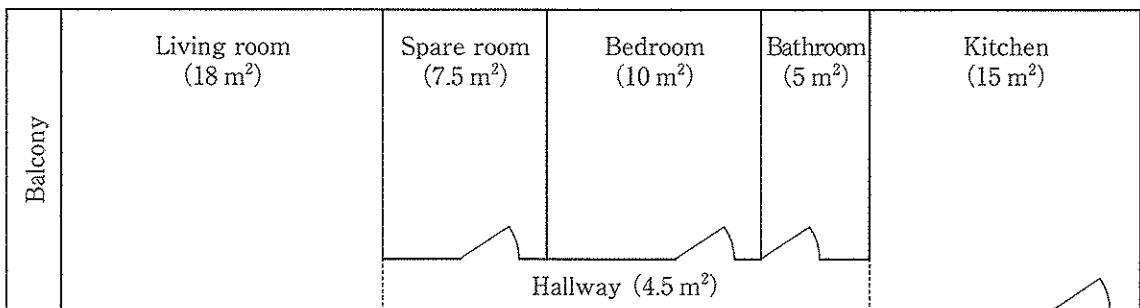
Student Housing Advertisement



Apartment A: total monthly rent \$1,000 (two-student option - 60 m²)



Apartment B: total monthly rent \$800 (one-student option - 60 m²)



――上記の図面は架空のものです――

Advantage Apartments Company in downtown Sydney, Australia, is now offering two new designs to meet your student housing needs! Of our two options, Apartment A is best for two students on a tight budget. Though it has the same total measurements as Apartment B, your half of the rent will only be (1) per month by sharing with a roommate. Also, you will each get your own large (2). In comparison, Apartment B features (3) more square meters of cooking space, which is perfect for the student who wants to host guests and have a separate room for studying or storage. No matter which apartment you choose, both apartments have (4)-facing balconies to enjoy the spectacular view of downtown Sydney. Come in and see your dream apartment today!

(1) ア. \$400 イ. \$500 ウ. \$800 エ. \$1,000
(2) ア. kitchen イ. bathroom ウ. bedroom エ. living room
(3) ア. three イ. six ウ. 12 エ. 15
(4) ア. north イ. south ウ. east エ. west

