

1限

英語

(医学部)

— 2月3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1～問4、問9、問10は問い合わせに答え、問5～問8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11は指示に従ってTかFを選びなさい。

For millennia, legends throughout the world have told of wondrous enchantments that bring eternal youth. The Greek emperor Alexander the Great, for one, is said to have undertaken a search for the Water of Life. In the sixteenth century, the Spanish explorer Ponce de Leon sailed to what is now Florida in the United States to seek the Fountain of Youth. For over a thousand years before *Harry Potter* was written, real-life alchemists* had been trying to discover the Philosopher's Stone, which could bring eternal life. Recently, the quest has been carried on by scientists who claim that aging is not an inevitable part of life, but something like a disease that can be treated and perhaps even cured.

People have always taken it for granted that all living creatures will eventually age and die, but there appear to be some exceptions to the rule. For example, a type of North American pine tree called a "bristlecone" never withers with age: some specimens that have managed to avoid lightning strikes and forest fires are estimated to be over 5,000 years old. In addition, certain sea creatures, such as the scarlet medusa, are known for their ability to revert to an earlier stage in their development a potentially unlimited number of times. Although the record for longest human lifespan, 122 years, set by Jeanne Calment (1875-1997), has not been broken in the 21st century, examples from nature like these have given scientists hope that this number may not be set in stone.

The signs of what we call aging, such as brittle bones, muscle loss, and forgetfulness, occur when cells in the body stop dividing and regenerating. The exact causes of cell degeneration are unknown, but one thing is clear: it does not happen at the same rate for everyone. For example, if a person spends a lot of time in the sun unprotected, their skin cells will age at a faster rate than those of someone with less exposure to the sun. [1]. people who have led sedentary lives are more susceptible to chronic pain and muscle loss than those who have been ^(A) more physically active. This raises the question: if external factors can influence the speed of the aging process for certain parts of the body, can remedies be devised to slow it down?

A few treatments are now undergoing clinical trials. Medicines called mTOR inhibitors work by slowing down cell proteins involved in division and growth. These drugs were originally developed to treat diabetes, but recent research suggests they could also be used to protect people against age-related conditions such as cancer, strokes, and Alzheimer's disease. Other experimental treatments have focused on senolytics, which are drugs that cause the immune system to target aged cells and selectively remove them from otherwise healthy tissue. Both of these have ^(B) decreased the rate of aging in laboratory animals; it remains to be seen whether they will have the same effect on humans.

Some worry that, if the average human lifespan is artificially extended, more countries might struggle with a problem now facing developed countries like Japan and Singapore. In these countries, so many people are already living so long past retirement age that there are not enough young people to support them. Some governments, like that of Singapore, are trying to solve the problem by encouraging people to have more children. If this trend spreads, however, then the global population, which many already believe is unsustainable, will likely grow even faster.

A real-life Philosopher's Stone remains elusive, and, if ever discovered, it could have unintended and far-

reaching negative consequences. Still, enough people find the prospect of a wise old mind in a perpetually youthful body so irresistible that the quest for eternal youth continues to this day.

*alchemists: 鍊金術師

問1 According to the first paragraph, which statement is true?

- ア. The idea of staying young forever is a relatively recent concept.
- イ. Ponce de Leon claimed to have found the Fountain of Youth in Florida.
- ウ. Some scientists are beginning to regard aging as a treatable medical condition.
- エ. The Philosopher's Stone was first mentioned in the *Harry Potter* books.

問2 What can be inferred from the second paragraph?

- ア. All living things wither with age.
- イ. Bristlecone pine trees can never die.
- ウ. The scarlet medusa is able to make itself younger.
- エ. The maximum possible human lifespan is 122 years.

問3 According to the third paragraph, which statement is true about cell degeneration?

- ア. It leads to brittle bones, muscle loss, and forgetfulness.
- イ. Its causes have been known for decades.
- ウ. It happens at a uniform and predictable rate.
- エ. Recent medical treatments have succeeded in stopping it.

問4 Which of the following best replaces [1] in the third paragraph?

- ア. Therefore
- イ. Similarly
- ウ. For example
- エ. At most

問5 In the third paragraph, a sedentary person is most likely one who _____.

- ア. has particularly strong muscles
- イ. does not move around much
- ウ. spends a lot of time exercising
- エ. does not experience pain

問6 According to the fourth paragraph, senolytics _____.

- ア. work by slowing down proteins that make cells expand and separate
- イ. were initially developed as an experimental treatment for diabetes
- ウ. cause the body to remove old cells while keeping healthy ones
- エ. have had the same effect on humans as on laboratory animals

問7 In the fourth paragraph, Both of these refers to _____.

(B)

- ア. mTOR inhibitors and senolytics
- イ. diabetes and age-related diseases
- ウ. aged cells and healthy tissue
- エ. laboratory animals and humans

問8 The main point of the fifth paragraph is that _____.

- ア. the average age in developed countries like Japan and Singapore has been increasing
- イ. some say that the world's population is too high to be sustainable
- ウ. people are living much longer after retirement than previously
- エ. longer lifespans, combined with higher birthrates, could cause a population explosion

問9 Which of the following best summarizes the author's conclusion about reversing the aging process?

- ア. It is a highly dangerous idea and should not be attempted.
- イ. It is not desirable but might be interesting to try to achieve.
- ウ. It is inevitable and will have serious social consequences.
- エ. It may or may not be feasible, but many find it an appealing goal.

問10 Which would be the best title for the passage?

- ア. Can We Live Forever?
- イ. The Process of Cellular Degeneration
- ウ. Are We Living Too Long?
- エ. Ancient Legends of Eternal Youth

問11 According to the passage, mark "T" if the statement is true and mark "F" if the statement is false.

1. Ponce de Leon was originally from North America.
2. The current record for human longevity was set in the 20th century.
3. mTOR inhibitors were first developed to treat conditions like Alzheimer's disease.
4. The government of Singapore is encouraging people to have fewer children.

2

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. I wasn't hungry, but because Molly had gone to the trouble of baking cookies. I () them.
 ア. felt to eat pressured イ. felt pressured to eat
 ヴ. pressured to eat felt エ. pressured felt to eat
2. After getting married and having two children, David's goals were quite different from () they had been when he was single.
 ア. as イ. that ヴ. what エ. which
3. From next week, we will have to carry utensils () our lunch in the company cafeteria.
 ア. with which eat to イ. which with eat to ヴ. which with to eat エ. with which to eat
4. The number of people who want to study or work in foreign countries ().
 ア. is grown イ. are grown ヴ. are growing エ. is growing
5. Hardly () asleep when the telephone in the living room began to ring.
 ア. she had fallen イ. had fallen she ヴ. she fallen had エ. had she fallen
6. () the tech industry will be developing new ways to implant computer chips is a given.
 ア. Such that イ. So these ヴ. That エ. These
7. Professor Pickering wants the final reports () by the deadline so he can return them during the semester.
 ア. submitted イ. be submitting ヴ. submit エ. to submit
8. The success of any TV series' denouement, () the outcome of the dramatic events, is determined partly by whether the main characters' goals have been met by the final scene.
 ア. but イ. nor ヴ. or エ. either
9. I recommended that she () Professor Kay before starting to write her graduation thesis.
 ア. seeing イ. to see ヴ. see エ. be seen
10. Thanks to a governmental campaign, people are more conscious of the need to save on (), especially in the summer and the winter.
 ア. electrically イ. electrify ヴ. electrical エ. electricity

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. Tomaso and Bob were totally exhausted from responding to incessant complaints from customers.

ア. offensive イ. significant ウ. endless エ. adverse

2. Jasper flew into a temper when he read the critics' review of his latest novel.

ア. got angry イ. called a friend ウ. became depressed エ. took a trip

3. If this research project is to succeed, I need to amass enough data to back up my theory.

ア. approve イ. adjust ウ. accumulate エ. analyze

4. We were looking forward to the keynote speaker's presentation but found it completely unintelligible.

ア. impractical イ. impossible to understand ウ. disrespectful エ. disturbing to hear

5. Because of the trouble we've had with vermin, crop yields will be down this year.

ア. pests イ. temperatures ウ. storms エ. farmers

6. Our supervisor is asking everyone, including me, who let the cat out of the bag.

ア. solved the problem イ. broke the record ウ. ignored the rule エ. disclosed the secret

7. Your résumé stood out among all the ones we received, so you'll be moving on to the interview stage.

ア. teaching plan イ. curriculum vitae ウ. application form エ. ID card

8. The citizens were at the mercy of their government, which had banned all forms of protest.

ア. uniting as a result of イ. kept out of ウ. under the control of エ. afraid of

9. I don't think it's a good idea to tell Professor White that you're fed up with the way she interacts with students in class.

ア. tired of イ. safe from ウ. entertained by エ. unsure about

10. Noam Chomsky was arguably, the most influential American linguist of the 1980s.

ア. fortunately イ. honestly ウ. surprisingly エ. possibly

4

次の2つの会話文を読み、1. 3～5. 7. 8. 10は問い合わせに答え、2. 6. 9は意味・内容に合うように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。

Taro: Hello, and welcome to *Where Are You Going?* We're here at Tokyo Station, interviewing travelers to various places in Japan. And if we meet anyone going anywhere exciting, maybe they'll let us send a camera crew along with them! Let's ask this gentleman where he's going.

Erika: Hi! Can we interview you? Where are you off to?

Tom: Sorry, my train leaves in five minutes.

Erika: Okay, then. How about this gentleman? Where are you going?

Dan: I'm going to Ichigaya, for a Go training camp.

Erika: Go?

Dan: Yeah. You know, the board game. The Japanese name is *Igo*.

Erika: Oh! How long have you been playing?

Dan: About three years. A friend of my wife's is a Go expert, and he gave me my first set. At first, I thought it was really boring, and I couldn't figure it out. But because of him, I stuck with it, and now I can't think about anything else. My wife must rue the day she introduced us!

Erika: You must be really good, then.

Dan: Oh, I wouldn't say that. The first time I went to this camp, a junior high school boy mopped the floor with me. But I've been practicing hard, and now I can hold my own against most mid-level players. My dream is that, one day, I'll be the Go Grand Master of Great Britain.

Erika: Sounds like fun! Can we go and see you in action?

Dan: Sorry, but they don't allow media at these camps.

Erika: I see. Well, good luck! Here comes someone else. Can we interview you? Where are you going?

Zofia: Tokushima, to learn their secrets for growing shiitake mushrooms.

Taro: Did you say shiitake mushrooms?

Zofia: That's right. I grow mushrooms, and shiitake are my favorite.

Taro: What's the best technique for growing them?

Zofia: In Poland, where I come from, they usually grow shiitake on wood shavings in a plastic bag. That way, you can get a lot of mushrooms in a short time, but shiitake are really meant to be grown on an oak or maple log with a moisture content above 35 percent. You can smell the difference in the mushrooms, and you can definitely taste it.

Taro: Are shiitake mushrooms popular in Poland?

Zofia: Definitely. They're near the top of the list, right after the common button mushroom.

Taro: What's special about the shiitake in Tokushima?

Zofia: They're famous for being enormous and delicious. I hope I can learn how to grow mine that way.

Taro: We'd like to learn, too! Can we go with you?

Zofia: Ah...well, why not?

1. How did Dan feel about the game of Go when he was introduced to it?

- ア. He found it mildly entertaining.
- イ. He had trouble understanding it.
- ウ. He pretended to be interested in it.
- エ. He was instantly obsessed with it.

2. When Dan says the boy "mopped the floor with me," he most likely means that _____.

- ア. Dan won the match
- イ. the boy won the match by a large margin
- ウ. the match was a draw
- エ. they cleaned up together after the match

3. How would Dan most likely rate his own current ability at Go?

- ア. beginner
- イ. intermediate
- ウ. advanced
- エ. grand master

4. According to Zofia, what is true about shiitake mushrooms?

- ア. They are the most popular mushroom in her country.
- イ. They should be grown on wood shavings.
- ウ. They grow best on oak or maple.
- エ. They require a moisture content of less than 35%.

5. Which of the interviewees agrees to let a camera crew follow them?

- ア. Tom
- イ. Dan
- ウ. Zofia
- エ. None of them

Preston: Hello. Professor Zevin. I'm Preston Glassow. I've just started your Monday Advanced Musicology class this semester.

Professor Zevin: What can I do for you?

Preston: I've been looking at the assignment you gave in the last class, and I'm not sure I understand it completely.

Professor Zevin: What's unclear?

Preston: So we need to choose two arias, one Italian and one German, and compare the atmosphere in each, right?

Professor Zevin: Sounds like you're on the right track.

Preston: Well, I'm still not completely sure how I should do that. I've chosen two arias: one from the opera *La Traviata* and the other from *The Magic Flute*...

Professor Zevin: Good choices! I'm not a huge fan of *The Magic Flute*, but *La Traviata* is one of my favorites. Okay, what I want you to do is examine what helps define the different moods of the pieces. It may be the lyrics, the situation, the instruments, or the types of chords used.

Preston: Ah! Now I see. So, I could compare the types of chords used in each aria to explain how they affect the atmosphere of the aria?

Professor Zevin: You could do that, yes.

Preston: Thanks for clarifying that. Since I'm here, could I ask for the syllabus?

Professor Zevin: I don't have a copy right now, but you can download it from the university website.

Preston: I went onto it but didn't find the one for this year, only the old ones.

Professor Zevin: Did you click the link to the new student portal? You'll find the correct URL in the email from the Student Support Office that was sent out in March. Unlike before, you'll need to log in to view the new syllabi. The old ones are there, too. Remember, you can only buy our textbook using a credit card on the campus bookstore's website. Unfortunately, the bookstore link in the portal needs to be updated, so use the link in the email.

Preston: Thanks. I already have the textbook. Could you tell me more about the final project?

Professor Zevin: Well, there'll be a series of assignments and weekly quizzes over the course of the semester leading up to the project. Once we've finished those, I'll give you further details.

Preston: I took this class for the challenge, and with the assignments, quizzes, and project, it sounds like I'll have a lot on my plate. Will the quizzes be online?

Professor Zevin: I'm quite old-fashioned, I'm afraid. Everything will be done in class. Remember, not only will you have to study everything I assign in the textbook, but some quiz content will only be explained in class.

Preston: I heard from another student that only the final project goes towards our final grade; is that correct?

Professor Zevin: No, the quizzes are worth 20% and the assignments another 20%. The grade breakdown will be clear once you've downloaded and checked the syllabus.

6. The main reason Preston came to talk with Professor Zevin was to _____.
ア. explain what he knows about the university homepage
イ. get a copy of the syllabus that will be used for the course
ウ. ask how to purchase the textbook without using a credit card
エ. confirm the details of some homework that has been assigned

7. According to the dialogue, which statement is true about the assignment?
ア. The final choice of arias has been determined by Professor Zevin.
イ. One way to complete it is by comparing the chords used in two arias.
ウ. It is explained in more detail in the syllabus.
エ. Preston has only one more day to work on it.

8. According to the dialogue, which statement is NOT true about the new student portal?
ア. The Student Support Office has included its URL in an email.
イ. Students can access syllabi from previous years on it.
ウ. It provides the latest link to the university's online bookstore.
エ. Users need an account to view the uploaded course materials.

9. When Preston says "have a lot on my plate," he most likely means _____.
ア. be very busy
イ. learn a lot
ウ. do my best
エ. eat too much

10. Which statement is true about the Advanced Musicology course?
ア. Tasks other than the final project contribute to the final grade.
イ. Everything that needs to be studied is covered in the textbook.
ウ. The topic for the final project was given at the start of the semester.
エ. Most of the homework and quizzes can only be submitted online.

5

次の問1～問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A～Eの中から一つ選びなさい。

問1 1. While testing a radar component called a magnetron, he suddenly found that its energy had melted a candy bar in his pocket.

2. Spencer's accidental invention, the microwave oven, went on to become a standard feature in hundreds of millions of homes around the world.

3. Further tests showed that the magnetron's waves could quickly fry an egg and pop kernels of corn but could also be used safely inside a metal box.

4. In 1945, Percy Spencer, a self-taught engineer who never finished primary school, was working on ways to improve radar technology.

ア. 4 → 1 → 2 → 3 イ. 4 → 3 → 1 → 2

ウ. 4 → 1 → 3 → 2 エ. 4 → 3 → 2 → 1

問2 1. Big Diomede and Little Diomede are two islands in the Bering Strait, the narrow waterway that separates Asia and North America.

2. On Big Diomede, however, the time is 21 hours ahead of that on Little Diomede because the International Date Line runs between them.

3. For this reason, the two have come to be known, respectively, as "Tomorrow Island" and "Yesterday Island."

4. The distance between the islands, just 3.8 kilometers, is short enough to walk when the strait freezes in the winter.

ア. 1 → 3 → 2 → 4 イ. 1 → 4 → 2 → 3

ウ. 1 → 3 → 4 → 2 エ. 1 → 4 → 3 → 2

問3 1. Although sometimes covered in expensive leather or textiles and ornamented with diamonds, the chopine's most remarkable feature was its height.

2. This dramatic height and unhurried movement drew attention to the woman and, by extension, to the wealth and social status of her family.

3. During the 16th and 17th centuries, a type of women's shoe called the "chopine" was fashionable in Italy and Spain.

4. Some were over 50 centimeters tall, causing the wearer to tower over others and requiring her to walk very slowly, often with the help of servants.

ア. 3 → 1 → 2 → 4 イ. 3 → 2 → 1 → 4
ウ. 3 → 1 → 4 → 2 エ. 3 → 2 → 4 → 1

問4 1. Educational psychologist László Polgár believed that extraordinary mental abilities depend less on natural talent than on training.

2. He claimed that he could make any child into a genius, and he set out to prove it through a remarkable experiment in human education.

3. All three grew up to become world-class players, shaking the beliefs that men are naturally superior and that genius cannot be learned.

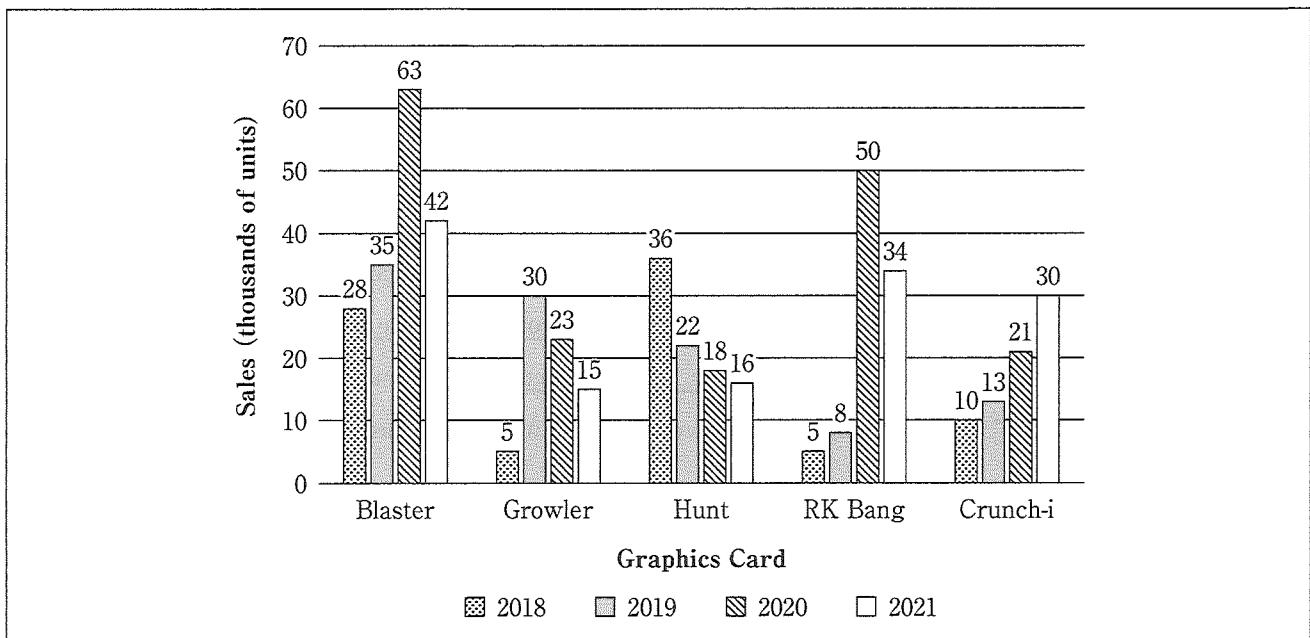
4. He taught his test subjects, his three young daughters, how to play chess, because the official chess ranking system provided an objective measure of skill.

ア. 1 → 2 → 3 → 4 イ. 1 → 4 → 2 → 3
ウ. 1 → 2 → 4 → 3 エ. 1 → 4 → 3 → 2

6

次のグラフを見て、英文の空所(1)～(4)に入る最も適切なものを、それぞれA～Eの中から一つ選びなさい。

Sales of Graphics Cards from SHRD Computers



―― 上記のグラフは架空のものです――

In 2018, SHRD Computers began producing its own range of graphics cards. The above chart presents the sales of five graphics cards offered by the company from 2018 to 2021. The data shows that sales for these products were lowest in 2018, with the exception of the (1) card. While Blaster cards were not the highest-selling product in 2018, sales improved, and from 2019 to 2021, they were the leading product. In fact, in 2020, the Blaster card outsold the Crunch-i by (2). Growler sales were approximately (3) times greater in 2019 than 2018, making it the second-best-selling product of 2019. RK Bang was first introduced as a rival to Tring Computers' popular V2 Card, and its sales (4) in 2020, mainly because of a review by popular social media gamer Neopol3on.

(1) ア. Blaster	イ. Growler	ウ. Hunt	エ. Crunch-i
(2) ア. two to one	イ. three to one	ウ. four to one	エ. five to one
(3) ア. two	イ. four	ウ. six	エ. eight
(4) ア. stopped	イ. declined	ウ. stayed the same	エ. jumped

7

次の英文を読み、下線部(1)と(2)を日本語に訳しなさい。英単語をそのまま転記したり、カタカナを使用したりしないこと。

If you've ever had a day when you felt that you weren't completely yourself, you were closer to the truth than you knew. Over half the cells in your body are not human ones; rather, they consist of bacteria and other
⁽¹⁾microorganisms that are found throughout the body but concentrated primarily in the large intestine. These are referred to collectively as your "microbiome," which comprises as much as two kilograms of your body weight. The exact composition of the microbiome differs from person to person, which may help explain why people respond in different ways to certain medications or changes in diet. These tiny creatures perform essential functions such as aiding digestion and regulating the immune system and can also influence your emotional state. Consequently,
⁽²⁾further advancement in medical care may be possible by incorporating the characteristics of these creatures into
diagnosis and treatment, contributing to longer health expectancies. It may seem strange to think of all these microbial "stowaways" accompanying you wherever you go, but look at it this way: you're never really alone.

8

次の文を読み、下線部(1)と(2)を英語に訳しなさい。

Humans, according to the 19th-century British author William Hazlitt, are the only animals that laugh or cry because we are the only ones who are struck by the difference between what is and what ought to be. Recent discoveries, however, have proven him at least partly wrong. 哲學的考察はさておき、人間の他にも笑うことができる動物が多くいることが明らかになってきた。 Biologists as early as Charles Darwin noticed that apes laugh like humans when tickled under the armpits. Since then, scientists have identified 65 other species of animals that communicate with one another in a way that corresponds to human laughter, especially that which is heard among children when roughhousing. これらの動物はけんかの真似ごとを行う際、危害を加える意図がないことを合図するために音を出す。
⁽¹⁾
⁽²⁾ These include the barking of dogs and sea lions, the high-pitched calls of some types of monkeys, the ultrasonic calls of rats and gerbils, and even certain noises made by felines. Thus, if you tell a joke to your cat and it hisses at you, don't feel bad; it may actually be laughing!

