

一般入試前期B日程

英語

I 次の会話を読み、下記の設問に答えよ。(配点 25)

Jerry: Hey, George! How was the driving test? Did you pass?

George: No, I failed! I can't believe it! I got a score of 30. I needed 40 more points to pass and get my driver's license.

Jerry: Oh, I'm sorry to hear that. Why was your score so low?

George: Well, the instructor said that I didn't switch on the turn signals early enough on the turns. I should turn them on 30 meters before a turn, but I waited until 20 meters before. Also, I should have checked my mirrors more. He said that I looked in my rear-view mirror.

Jerry: Do you disagree? Do you think you looked in the rear-view mirror enough?

George: I suppose he might be right. I tend to use my side mirrors more. Plus, when I'm driving on a testing course like this and not on a real road, I already know there's not a car behind me, so I don't feel like looking in that mirror is necessary.

Jerry: Well, there's your problem right there. You really must pretend like you're out on the real road, and you're surrounded by cars, cyclists, and people walking around.

George: That's so difficult, though! The course is completely empty except for a handful of trees lining the streets, a traffic signal, and a couple of stop signs. Actually, to be honest, I didn't notice one of those stop signs and I rolled right through it.

Jerry: Well, along with paying attention to signs a bit more, try to imagine specific things you might see on a real road. You can picture school children running around, grandmothers pushing shopping carts, or mothers cycling with their children. Maybe this will help you to drive like you're on a real road.

George: Yeah, OK. I'll try my best to activate my imagination more the next time I take the test.

Jerry:

George: Well, that S-curve is so difficult! The instructor said I went too fast and that the front tire went off the edge of the road. That was the most stressful part, and I was so nervous that I just wanted to get it done quickly.

Jerry: You just need to take a deep breath, relax, and take it slow on that part. If you go slow enough, it's super easy.

George: But these instructors are so strict! I think my instructor just didn't like me. I think he decided to give me a bad score from the moment I sat down in the car.

Jerry: Oh, George, I'm certain that isn't true! My instructor was a perfectly nice woman. We even shared a few laughs when the test was finished.

George: You know, in my disappointment, I totally forgot to ask you about your result. How did you do?

Jerry: I got a perfect score!

(1) 空所 に入らないものを次の中から1つ選び、その番号をマークせよ。

- ① quite often ② almost never ③ very rarely ④ hardly ever

(2) 空所 に入る最も適切なものを次の中から1つ選び、その番号をマークせよ。

- ① What was the easiest part of the test for you?
② Was there anything else that caused your score to be reduced?
③ Did your instructor have any positive feedback for you?
④ Why do you find it difficult to use your imagination?

(3) 会話の内容に合うように、次の1)と2)の問いの答えとして最も適切なものを下記の中からそれぞれ1つ選び、その番号をマークせよ。

1) Which of the following is one of the reasons that George failed the driving test?

- ① He drove too slowly on the S-curve section of the test.
② He activated his turning signals earlier than what was necessary.
③ He proceeded through a stop sign without stopping.
④ He spent an excessive amount of time looking at the rear-view mirror.

2) How did George feel when driving through the S-curve part of the driving course?

- ① relaxed ② anxious ③ privileged ④ delighted

(4) 会話の内容に合うように、次の英文を完成させるのに最も適切なものを次の中から1つ選び、その番号をマークせよ。

For the next time he takes the driving test, Jerry suggests to George that he should

- ① try to imagine that he is alone in the car.
② practice daily breathing techniques to reduce stress.
③ pay closer attention to the various posted traffic signs.
④ consult with the driving instructor.

II

次の文具店の広告を読み、下記の設問に答えよ。(配点 25)

The School Year Is Coming!

The summer vacation will be over soon and it's almost time for another school year to begin. The team at the Pencil Shop knows this can be a stressful time for the students of our community (and their parents), so we are here to help you get ready for the new school year as smoothly as possible. We can help your child make a strong start to the new year and go to school on that first day feeling fresh and prepared. And what's more, with our low prices and special "Back to School" deals, it won't break the bank!

What Can the Pencil Shop Do for You?

The Pencil Shop can provide the latest brand name school supplies from throughout the world, including mechanical pencils from Japan, notebooks from Germany, and a collection of pen cases of all shapes, sizes, and designs. And our most remarkable feature is our massive selection of amazing bags: backpacks, messenger bags, duffel bags, slings, and any other kind of bag you can possibly imagine. The student in your family can stroll into school on that first day with a stylish bag packed full of everything they need to excel in their classes.

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We know it can be especially stressful for students to start at a new school, so for those of you with children starting their first year of junior high school or high school, right now we have extra special deals on offer. If you purchase a bag with a price of over \$50, you can get 20% off on all mechanical pencils, pens, pen cases, and notebooks. And if you spend over \$75 on a bag, you can get a 30% discount on those same items, plus 15% off on any additional bag you buy.

And for those little ones starting their first year of elementary school, we will give you a special gift box if you spend over \$25 in our shop. The gift box includes two pencils, an eraser, a ruler, and a pen case in which to keep them all.

But these special deals end after September 10th, so don't wait too long! And don't forget to show your student ID card at the counter so that we can verify your information.

Who We Are & Our Philosophy

The Pencil Shop is a local family-run business, and we want the students of our community to be intelligent, successful, and excited about going to school every day. We don't want students to be worried about whether they have the necessary supplies in their bags when they head off to school. We believe that a prepared student is ready to focus on learning and that this leads to success. And success for the children in our community means success for the whole community and hope for a brighter future.

(1) 下線部 “remarkable” と文脈を変えずに置きかえられる語を次の中から1つ選び、その番号をマークせよ。

- ① typical ② standard ③ impressive ④ secretive

(2) 空所 に入るタイトルとして最も適切なものを次の中から1つ選び、その番号をマークせよ。

- ① **New Supplies for a New School**
② **Gifts for Graduating Students**
③ **Going-out-of-business Sale**
④ **All Bags on Sale Now!**

(3) 本文の内容に合うように、次の1)と2)の問いの答えとして最も適切なものを下記の中からそれぞれ1つ選び、その番号をマークせよ。

1) Which of the following is true about the “Back to School” deals at the Pencil Shop?

- ① Students who are entering university can get a discount on a new bag.
② All elementary school students can receive a special gift if they spend over \$25.
③ The ending date of the special discounts has not been determined.
④ First-year junior high school students must purchase a bag to take advantage of the deal.

2) Which of the following is NOT true about the Pencil Shop?

- ① Their stock includes items from European companies.
② It is a chain store run by a large corporation.
③ Its operators believe that adequate preparation will have a positive effect on students.
④ They have a large selection of bags.

(4) 本文の内容に合うように、次の英文を完成させるのに最も適切なものを次の中から1つ選び、その番号をマークせよ。

Students CANNOT receive any special discount if they

- ① do not have the permission of their parents.
② purchase a bag that costs between \$50 and \$75.
③ fail to present their student identification card.
④ want to purchase a Japanese brand backpack.

Ⅲ 次の英文を読み、下記の設問に答えよ。(配点 25)

Just as children develop a dominant hand, young fish may also choose a preferred side, although that preference must be determined early in life, researchers have discovered.

A team of scientists confirmed that mature fish failed to obtain laterality through an experiment based on a freshwater variant native to East Africa. “Experiences in childhood crucial for laterality development,” said one of the team members.

Many creatures are prone to use body parts on certain sides more often to improve their precision and other performance factors, just as humans wield pencils and chopsticks with their dominant hands. Laterality is thought to be determined at specific points in life by not only genetic factors but also experiences after birth. However, when laterality is decided was long shrouded in mystery.

Tackling the challenge, the research team chose a *scale-eating fish species for their test. The species approaches *prey from behind from either side to rip out scales for consumption. Each fish from the variant is known to attack from a certain side. Fish in the species were divided into two groups based on which *mandible was larger after birth, the right or left side.

Previous research demonstrated that this species snatches scales from both sides in its first-ever hunt, but that experienced fish with well-developed mandibles on the right come to prefer the right side. The same applies to left-jawed fish.

As it was unknown whether that kind of laterality can be obtained at any growth stage, the scientists hatched and raised fish with their food provided for them up to a certain age, so that 4-month-old and 8-month-old young fish and 12-month-old adults could then be made to hunt their own for the first time to observe their behavioral patterns.

About 10 fish from each age category were put in the same tank as prey with every fish given a single target. The findings revealed that all the groups initially attacked their prey from both right and left randomly. Following many rounds of hunts, the youngest fish began swimming toward prey from the same direction as their side with the larger mandible. In the end, 80 percent of them developed their own laterality. Among the group of 8-month-old fish, 50 percent succeeded in determining their preferred sides. But no adult fish could develop laterality, and they made attacks from random directions even after repeated rounds of experiments. “Adult fish could not achieve improved results in their performance despite the repeated opportunities to learn,” said one of the scientists.

注 *scale うろこ *prey 獲物 *mandible 下あご

(Source: The Asahi Shimbun Asia & Japan Watch, Feb 1, 2022 (一部改変・省略)
承諾番号 23-0933
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(1) 空所 と に入る最も適切なものを次の中から1つずつ選び、その番号をマークせよ。

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| <input type="text" value="11"/> | ① appear | ② appearing | ③ to appear | ④ appearance |
| <input type="text" value="12"/> | ① by | ② in | ③ on | ④ for |

(2) 研究チームが行った実験について、本文に述べられているものを次の中から1つ選び、その番号をマークせよ。

- ① The fish that the researchers used in their experiment attacks its target from behind.
- ② They divided the fish into two groups, one with a larger mandible and one with a smaller mandible.
- ③ They removed some scales from the target fish for their experiment.
- ④ They observed three age groups to see which age category can rip out more scales from their prey.

(3) 本文の内容に合うものを次の中から2つ選び、その番号をマークせよ。ただし、解答の順序は問わない。

- ① 人間の子どもが利き手を発達させるのと同様、魚も左右差を発達させるが、これまでそれは成熟してからであるとされてきた。
- ② 多くの生物は、正確に何かを行ったり、パフォーマンスを上げたりするために、左右差をなくそうとする傾向にある。
- ③ 魚の右利き・左利きの獲得は、生まれてからの学習経験よりも遺伝的要素によって決まる。
- ④ 研究チームは、左右差がいつ生じるのかを調べるために、うろこを食べる魚を使って実験した。
- ⑤ 研究チームの実験では、捕獲した稚魚に餌を与えて育て、どちらの下あごが発達するかを観察した。
- ⑥ 研究チームの実験結果によると、3つのグループのうち、生後4か月の魚のグループが最も多く左右差を発達させることが分かった。

IV 次の英文を読み、下記の設問に答えよ。(配点 55)

When their day in the sun ends, solar panels, once a promising form of renewable energy, could leak toxic substances if left unattended in heaps. Many of the solar panels used for green power generation are expected to reach the end of their lives in the 2030s and will then be discarded. That has jump-started a rush for businesses to develop systems for disposing of these used solar panels. A number of businesses have begun new projects to the looming challenge.

A Tokyo-based manufacturer of solar panels has developed mechanical equipment that allows more than 90 percent of the materials contained in solar panels to be recycled. The appliance was put on sale in 2019. The device uses a blade heated to approximately 300 degrees to remove glass from the surface of a solar panel. It disassembles the remainder materials of different types, such as resin and copper. Each unit of the equipment has the capacity to process one solar panel per minute and up to 140,000 or so panels a year. The company has sold five units of the appliance in Japan despite the high unit price of 100 million yen (\$867,000). They also received an order from France last year. “Demand is already there in Europe, where photovoltaic power generation spread earlier than in Japan,” the president said. He added that his company had delivered 10 units of the equipment, with those of a simpler and cheaper model included in the count.

The rapid spread of photovoltaic power generation in Japan was prompted by the introduction of a feed-in tariff system in 2012, which requires power utilities to buy electricity generated with renewable energy sources at fixed prices set by the government. Solar panels are supposed to have service lives of 20 to 30 years. The government’s New Energy and Industrial Technology Development Organization (NEDO) has estimated that the of solar panels falling into disuse in a single year will peak sometime around 2036 at 170,000 to 280,000 tons. There is the option of reusing them, but (ア) buyers would want panels of older models that come with (イ) power generation efficiency. The panels could, however, be used in the manufacture of other machinery if disassembly allows materials of high value, such as aluminum and silver, to be extracted from them.

An Okayama-based company is developing solar panel disposal equipment that uses water vapor. It will employ steam heated to 600 degrees or so to vaporize plastic and allow more than 90 percent of the materials, including glass and copper, to be recovered. Company officials said that they hope to commercialize the apparatus sometime around 2023. “If more businesses were to join the market, the resulting competition would prompt technological innovation and cost reduction,” said the

president.

Leading businesses are also venturing into the field. A Tokyo-based subsidiary of a major oil distributor has developed a technology that allows noble metals and other materials to be extracted from used solar panels by using nitric acid. Company officials said that they hope to kick-start a business as early as fiscal 2024 for recycling the extracted substances. They said that the company would begin by processing 30,000 or so panels a year and expand the scale of the business to match the growing demand.

Similar technological approaches, however, are not likely to be a cure-all on their own. Solar panels contain toxic substances, including lead, but the way they are designed to block water permeation means that it takes time and effort to disassemble them. Used panels above and beyond processing capabilities to landfills. It is believed, however, that industrial waste disposal sites would reach their capacity limits sometime around 2035 if there is no reduction in waste.

The cost of disposal, which should be borne by the power producers, also presents a problem. The Agency for Natural Resources and Energy has said that some 80 percent of all power generators had no funds designated for disposal as of 2019. That raises concerns that used solar panels could end up abandoned in the years to come. The government is rushing to deal with the issue. It had the renewable energy special measures law amended in 2020 to make it obligatory for power producers to set aside reserve funds for the disposal of equipment in all solar farm projects of 10 kilowatts or more.

How effective that measure will be, however, remains an open question because some power generators are dividing up their project areas, so the divided areas will ostensibly be small enough to be exempt from the regulation.

(Source: The Asahi Shimbun Asia & Japan Watch, Mar 2, 2022

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(1) 空所 ~ に入る最も適切なものを次の中から1つずつ選び、その番号をマークせよ。

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| <input type="text" value="16"/> | ① cope with | ② deal for | | |
| | ③ insist on | ④ contribute to | | |
| <input type="text" value="17"/> | ① up | ② into | ③ between | ④ during |
| <input type="text" value="18"/> | ① power | ② export | ③ prediction | ④ volume |
| <input type="text" value="19"/> | ① will assign | ② will be assigning | | |
| | ③ will be assigned | ④ will be assign | | |

(2) 太陽光パネルに関する問題として、本文に述べられていないものを次の中から1つ選び、その番号をマークせよ。 20

- ① 何も処理を施されず山積みになった太陽光パネルからは有害物質が漏れ出す恐れがある。
- ② かつては再生可能エネルギーの一つとして有望視されていたが、多くは2030年代に寿命を迎えると予想されている。
- ③ 使用済み太陽光パネルを廃棄するためのシステムの開発ラッシュが始まっている。
- ④ 環境に優しい発電に使われてきたが、処分する枚数が多いため政府主導のプロジェクトが始まっている。

(3) 東京に本社を置く太陽光パネルの製造業者について、本文に述べられている最も適切なものを次の中から1つ選び、その番号をマークせよ。 21

- ① 太陽光パネルを再利用するための新工場を建設した。
- ② この企業が開発した機器は、およそ300度に熱した刃で太陽光パネルの表面からガラスを取り除くことができる。
- ③ この企業が開発した機器は、使用するのに年間およそ14万円のコストがかかる。
- ④ 1台1億円という高値のため海外からの注文はまだ来っていない。

(4) 空所 (ア) と (イ) に入る組み合わせとして最も適切なものを次の中から1つ選び、その番号をマークせよ。 22

(ア) — (イ)

- ① few — poorer
- ② few — greater
- ③ any — poorer
- ④ any — greater

(5) 岡山に本社を置く企業について、本文に述べられていないものを次の中から1つ選び、その番号をマークせよ。 23

- ① They are currently developing an apparatus to recover recyclable materials from solar panels.
- ② Their equipment utilizes water vapor to remove the plastic found in solar panels.
- ③ Their machine enables most of the materials used in solar panels to be recovered.
- ④ They believe that cost reduction is necessary to put their equipment to market.

(6) 下線部 “the issue” の指す内容として、本文に述べられている最も適切なものを次の中から1つ選び、その番号をマークせよ。

- ① The government has not been able to find suitable places for the disposal of solar panels.
- ② Most power generators do not have funds for disposal costs of solar panels.
- ③ The government has not set any rules for solar panel developers.
- ④ Power producers have not been allowed to set aside funds for solar panel disposal.

(7) 本文の内容に合うものを次の中から2つ選び、その番号をマークせよ。ただし、解答の順序は問わない。

- ① 太陽光発電が広まったのは、ヨーロッパより日本の方が早かった。
- ② 日本で太陽光発電が急速に広まった主な要因は、2012年の再生可能エネルギーの固定価格買い取り制度の導入であった。
- ③ 新エネルギー・産業技術総合開発機構（NEDO）の試算では、2036年頃には年間で最大28万枚の太陽光パネルが使用済みになるとのことである。
- ④ 大手石油会社の子会社は、硝酸を使って使用済みの太陽光パネルから貴金属を取り出す技術を開発した。
- ⑤ 産業廃棄物処理場の処理能力は、既に限界に達している。
- ⑥ 2019年時点での資源エネルギー庁の報告によると、使用済み太陽光パネルの大半が数年で廃棄になった。

V 次の英文を読み、下記の設問に答えよ。(配点 20)

Dangerous parasites are an unwelcome presence in fresh seafood, but getting rid of them through heating and freezing has been problematic as this can negatively impact the flavor and texture.

Now, an associate professor of electric pulse studies has developed a new method that uses pulsed power, strong electric energy that is accumulated over time and released instantly, to kill parasites, preserving the quality and taste of sliced fish to be eaten raw. He worked with a fishery processing firm in Fukuoka to remove the *Anisakis* species of parasite, which (① consumed ② health problems ③ that ④ causes ⑤ when)¹⁾ by humans.

Pulsed power has recently been shown to be effective in the fields of food processing, water treatment, and some medical applications. In this study, the research team placed *Anisakis* parasites in filleted horse mackerel (① the fish ② in ③ so ④ would ⑤ that)²⁾ be exposed to pulsed power in a container.

The results showed that the instant application of electric energy succeeded in killing off the parasites in three kilograms of sliced mackerel in six minutes. Furthermore, the seafood's temperature rose by just under five degrees or so with this method, and its taste and feeling in the mouth were kept at such a high quality that they could still be served as *sashimi*. According to the team, it was the first time that pulsed power was utilized to remove parasites.

If *Anisakis*-tainted *sashimi* and other kinds of seafood are consumed, the parasite bites into the eaters' gastric and intestinal walls, which (① about ② brings ③ serious ④ over ⑤ stomach pain)³⁾, nausea and other symptoms. There are no therapeutic agents to deal with the situation, so they must be eliminated through endoscopy or other means. Therefore, the health ministry recommends as a precaution that seafood be treated at minus 20 degrees for 24 hours and longer or at 70 degrees and higher.

The problem is that the product value for frozen slices of seafood is said to be 60 to 70 percent that of their untreated counterparts due to color changes and lowered resilience. *Anisakis* can also be removed with tweezers and other tools through visual inspection, but the manual labor required is not suitable for mass production.

With an eye on processing seafood in large numbers for commercial purposes, the development of pulsed power equipment that can operate with a conveyor belt is set to begin.

(Source: The Asahi Shimbun Asia & Japan Watch, Sep 16, 2021

承諾番号 23-0933

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(1) 下線部1)～3)を文脈に合うように並べかえる際、不必要なものが1つ含まれている。

その語句をそれぞれ1つ選び、その番号をマークせよ。

下線部1)

27

下線部2)

28

下線部3)

29

(2) 本文の内容に合わないものを次の中から1つ選び、その番号をマークせよ。

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① Pulsed power can be used to kill parasites without sacrificing the taste of fresh seafood.

② Parasites from a six-kilogram fillet of horse mackerel were treated in one minute using electric energy.

③ Eating seafood that has not been treated for Anisakis could cause severe health problems.

④ Anisakis can be removed visually, but this is not suitable for mass production.