

第6問 (配点 24)

A Your study group is learning about “how time of day affects people.” You have found an article you want to share. Complete the summary notes for your next meeting.

When Does the Day Begin for You?

When asked “Are you a morning person?” some reply “No, I’m a night owl.” Such people can concentrate and create at night. At the other end of the clock, a well-known proverb claims: “The early bird catches the worm,” which means that waking early is the way to get food, win prizes, and reach goals. The lark is a morning singer, so early birds, the opposite of *owls*, are *larks*. Creatures active during the day are “diurnal” and those emerging at night are “nocturnal.”

Yet another proverb states: “Early to bed, early to rise makes a man healthy, wealthy, and wise.” *Larks* may jump out of bed and welcome the morning with a big breakfast, while *owls* hit the snooze button, getting ready at the last minute, usually without breakfast. They may have fewer meals, but they eat late in the day. Not exercising after meals can cause weight gain. Perhaps *larks* are healthier. *Owls* must work or learn on the *lark* schedule. Most schooling occurs before 4:00 p.m., so young *larks* may perform certain tasks better. Business deals made early in the day may make some *larks* wealthier.

What makes one person a *lark* and another an *owl*? One theory suggests preference for day or night has to do with time of birth. In 2010, Cleveland State University researchers found evidence that not only does a person’s internal clock start at the moment of birth, but that those born at night might have lifelong challenges performing during daytime hours. Usually, their world

experience begins with darkness. Since traditional study time and office work happen in daylight, we assume that day begins in the morning. People asleep are not first in line, and might miss chances.

Does everyone follow the system of beginning days in the morning? The Jewish people, an approximately 6,000-year-old religious group, believe a day is measured from sundown until the following sundown—from eve to eve. Christians continue this tradition with Christmas Eve. The Chinese use their system of 12 animals not only to mark years, but to separate each two-hour period of the day. The hour of the rat, the first period, is from 11:00 p.m. to 1:00 a.m. Chinese culture also begins the day at night. In other words, ancient customs support how *owls* view time.

Research indicates *owls* are smarter and more creative. So, perhaps *larks* are not always wiser! That is to say, *larks* win “healthy” and sometimes “wealthy,” but they may lose “wise.” In an early report, Richard D. Roberts and Patrick C. Kyllonen state that *owls* tend to be more intelligent. A later, comprehensive study by Franzis Preckel, for which Roberts was one of the co-authors, came to the same conclusion. It is not all good news for *owls*, though. Not only can schoolwork be a challenge, but they may miss daytime career opportunities and are more likely to enjoy the bad habits of “nightlife,” playing at night while *larks* sleep. Nightlife tends to be expensive. A University of Barcelona study suggests *larks* are precise, seek perfection, and feel little stress. *Owls* seek new adventures and exciting leisure activities, yet they often have trouble relaxing.

Can people change? While the results are not all in, studies of young adults seem to say no, we are hard-wired. So, as young people grow and acquire more freedom, they end up returning to their *lark* or *owl* nature. However, concerns arise that this categorization may not fit everyone. In addition to time of birth possibly being an indication, a report published in *Nature Communications* suggests that DNA may also affect our habits concerning time. Other works focus on changes occurring in some people due to aging or illness. New research in this area appears all the time. A study of university students in Russia suggests that there are six types, so *owls* and *larks* may not be the only birds around!

[illegible]

Vocabulary

⇔ opposite: nocturnal

- Not all of us fit easily into the common daytime schedule, but we are forced to follow it, especially when we are children.
- Some studies indicate that the most active time for each of us is part of our nature.
- Basically, 40.
- Perspectives keep changing with new research.

- The Jewish and Christian religions, as well as Chinese time division, are referred to in the article in order to 41.
- Some studies show that 42 may set a person's internal clock and may be the explanation for differences in intelligence and 43.

問 1 Choose the best option for 39.

- ① achieves goals quickly
- ② likes keeping pet birds
- ③ lively in the daytime
- ④ skillful in finding food

問 2 Choose the best option for

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- ① a more flexible time and performance schedule will be developed in the future
- ② enjoying social activities in the morning becomes more important as we age
- ③ it might be hard for us to change what time of day we perform best
- ④ living on the *owl* schedule will eventually lead to social and financial benefits

問 3 Choose the best option for

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- ① explain that certain societies have long believed that a day begins at night
- ② indicate that nocturnal people were more religious in the past
- ③ say that people have long thought they miss chances due to morning laziness
- ④ support the idea that *owls* must go to work or school on the *lark* schedule

問 4 Choose the best options for

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- ① amount of sleep
- ② appearance
- ③ behavior
- ④ cultural background
- ⑤ religious beliefs
- ⑥ time of birth

B You are in a student group preparing a poster for a scientific presentation contest with the theme “What we should know in order to protect the environment.” You have been using the following passage to create the poster.

Recycling Plastic

—What You Need to Know—

The world is full of various types of plastic. Look around, and you will see dozens of plastic items. Look closer and you will notice a recycling symbol on them. In Japan, you might have seen the first symbol in Figure 1 below, but the United States and Europe have a more detailed classification. These recycling symbols look like a triangle of chasing pointers, or sometimes a simple triangle with a number from one to seven inside. This system was started in 1988 by the Society of the Plastics Industry in the US, but since 2008 it has been administered by an international standards organization, ASTM (American Society for Testing and Materials) International. Recycling symbols provide important data about the chemical composition of plastic used and its recyclability. However, a plastic recycling symbol on an object does not always mean that the item can be recycled. It only shows what type of plastic it is made from and that it might be recyclable.

Figure 1. Plastic recycling symbols



So, what do these numbers mean? One group (numbers 2, 4, and 5) is considered to be safe for the human body, while the other group (numbers 1, 3, 6, and 7) could be problematic in certain circumstances. Let us look at the safer group first.

High-density Polyethylene is a recycle-type 2 plastic and is commonly called HDPE. It is non-toxic and can be used in the human body for heart

valves and artificial joints. It is strong and can be used at temperatures as low as -40°C and as high as 100°C . HDPE can be reused without any harm and is also suitable for beer-bottle cases, milk jugs, chairs, and toys. Type 2 products can be recycled several times. Type 4 products are made from Low-density Polyethylene (LDPE). They are safe to use and are flexible. LDPE is used for squeezable bottles, and bread wrapping. Currently, very little Type 4 plastic is recycled. Polypropylene (PP), a Type 5 material, is the second-most widely produced plastic in the world. It is light, non-stretching, and has a high resistance to impact, heat, and freezing. It is suitable for furniture, food containers, and polymer banknotes such as the Australian dollar. Only 3% of Type 5 is recycled.

Now let us look at the second group, Types 1, 3, 6, and 7. These are more challenging because of the chemicals they contain or the difficulty in recycling them. Recycle-type 1 plastic is commonly known as PETE (Polyethylene Terephthalate), and is used mainly in food and beverage containers. PETE containers — or PET as it is often written in Japan — should only be used once as they are difficult to clean thoroughly. Also, they should not be heated above 70°C as this can cause some containers to soften and change shape. Uncontaminated PETE is easy to recycle and can be made into new containers, clothes, or carpets, but if PETE is contaminated with Polyvinyl Chloride (PVC), it can make it unrecyclable. PVC, Type 3, is thought to be one of the least recyclable plastics known. It should only be disposed of by professionals and never set fire to at home or in the garden. Type 3 plastic is found in shower curtains, pipes, and flooring. Type 6, Polystyrene (PS) or Styrofoam as it is often called, is hard to recycle and catches fire easily. However, it is cheap to produce and lightweight. It is used for disposable drinking cups, instant noodle containers, and other food packaging. Type 7 plastics (acrylics, nylons, and polycarbonates) are difficult to recycle. Type 7 plastics are often used in the manufacture of vehicle parts such as seats, dashboards, and bumpers.

Currently, only about 20% of plastic is recycled, and approximately 55% ends up in a landfill. Therefore, knowledge about different types of plastic could help reduce waste and contribute to an increased awareness of the environment.

Your presentation poster draft:

Do you know the plastic recycling symbols?

What are plastic recycling symbols?

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Types of plastic and recycling information

Type	Symbol	Description	Products
1		This type of plastic is common and generally easy to recycle.	drink bottles, food containers, etc.
2		This type of plastic is easily recycled 45 .	heart valves, artificial joints, chairs, toys, etc.
3		This type of plastic is 46 .	shower curtains, pipes, flooring, etc.
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Plastics with common properties

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問 1 Under the first poster heading, your group wants to introduce the plastic recycling symbols as explained in the passage. Which of the following is the most appropriate? 44

- ① They are symbols that rank the recyclability of plastics and other related problems.
- ② They provide information on the chemical make-up and recycling options of the plastic.
- ③ They tell the user which standards organization gave them certificates for general use.
- ④ They were introduced by ASTM and developed by the Society of the Plastics Industry.

問 2 You have been asked to write descriptions of Type 2 and Type 3 plastics. Choose the best options for 45 and 46.

Type 2 45

- ① and commonly known as a single-use plastic
- ② and used at a wide range of temperatures
- ③ but harmful to humans
- ④ but unsuitable for drink containers

Type 3 46

- ① difficult to recycle and should not be burned in the yard
- ② flammable; however, it is soft and cheap to produce
- ③ known to be a non-toxic product
- ④ well known for being easily recyclable

問 3 You are making statements about some plastics which share common properties. According to the article, which two of the following are appropriate? (The order does not matter.)

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- ① Boiling water (100°C) can be served in Type 1 and Type 6 plastic containers.
- ② It is easy to recycle products with Type 1, 2, and 3 logos.
- ③ Products with the symbols 1, 2, 4, 5, and 6 are suitable for food or drink containers.
- ④ Products with Type 5 and Type 6 markings are light in weight.
- ⑤ Type 4 and 5 plastics are heat resistant and are widely recycled.
- ⑥ Type 6 and 7 plastics are easy to recycle and environmentally friendly.