

英 語〔問 題〕

(100点・80分)

注 意 事 項

1. 試験開始の合図があるまで、この問題冊子の中を見たり、裏返したりしてはいけません。
2. この問題冊子は16ページあり、解答用紙は1枚（両面）です。
試験中に問題冊子・解答用紙の印刷不鮮明、ページの落丁などに気付いた場合は、手を挙げて監督者に知らせなさい。
3. 試験開始後、ただちに解答用紙の所定記入欄に、氏名・受験番号・誕生日をそれぞれ正しく記入し、さらに受験番号・誕生日をその下のマーク欄にマークしなさい。
4. 受験番号・誕生日が正しくマークされていない場合は、採点できないことがあります。
5. 解答は、解答用紙の解答欄に各設問で指示された方法で記入しなさい。
マーク方式は、例えば、

20

と表示のある問いに対して②と解答する場合は、次の(例)のように解答番号20の解答欄の②にマークしなさい。

(例)

解答番号	解 答 欄
20	① ● ③ ④

6. 問題冊子の余白等は、下書きなどに適宜利用してよいが、各設問で指示された解答は、必ず解答用紙の解答欄に指示された方法で記入しなさい。
7. 試験終了後、提出は解答用紙のみとし、問題冊子は持ち帰りなさい。

Part I 次の英文を読んで設問に答えなさい。

Why would humans want to live underwater? One reason could be to escape from climate change catastrophes on land. The burning of fossil fuels has been increasing the danger and uncertainty of life on Earth, with more frequent disasters, such as hurricanes, droughts, floods, forest fires, and heat waves. Crop yields such as corn and wheat are reduced, leaving less food available. The year 2023 was the hottest on record since measurements began in 1850. Earth's livable land area is disappearing as polar ice caps melt, resulting in rising ocean levels, which start to cover low-lying lands. Hence, there is a higher strain on available resources.

However, will building homes underwater be a good option? Only a small part of the Earth's surface (about 29%) is land, so why not live in the oceans, which are about 71%? Abundant sea life is close-by, including various types of fish, such as tuna, salmon, and mackerel, and seaweeds. These foods are rich in nutrients especially proteins, vitamins, and minerals. In addition, one can have an excellent view of sea life in the aqua blue water. Those who like snorkeling or scuba diving would be in heaven. Temperatures would not be too hot or too cold, since the sea shields one from outside air. Droughts, floods, forest fires, and heat waves would have a less ⁽⁶⁾ disastrous impact.

Besides crews in submarines, are there people living under the water now? In the past, there have been several underwater habitats constructed including MarineLab, SEALAB, and Conshelf. These have been used by different universities and NASA to conduct research on living underwater, and to train astronauts for space environments. This is because living underwater has similar conditions to space, such as being in a small, closed area. The experiments helped expand knowledge of underwater technology and the functions of sea life. In addition, they increased public awareness of oceanographic research and created motivation for the conservation and sustainability of our oceans.

The only actively functioning underwater research laboratory now is Aquarius

near Key Largo in Florida, designed as a research station for coral reefs. It was also used by NASA for astronaut training. Aquarius can accommodate six researchers, called “aquanauts”. It was built in 1986 in Texas. In 1989, Aquarius was damaged by Hurricane Hugo and had to be sent to North Carolina for restoration. It has been deployed in the Florida Keys since 1993.

The Aquarius laboratory is about the size of a bus measuring 14 meters long by three meters wide, and sits on the seabed. The shape is a long round tube that works best for withstanding the high pressures 20 meters beneath the surface of the ocean. It is constructed of strong materials. A 100-tonne weight holds it down to keep it from floating up to the ocean surface, while a thick cable is used to obtain electrical power and Wi-Fi. To enter, you swim to an entry hatch at the bottom of Aquarius, then go headfirst above the water line into the rooms. The air inside is pressurized in the airlocks to about 2.5 times higher than outside air to keep water out.

Aquarius has everything needed for living. In the front is the wet porch, where you take a shower with fresh water to rinse off the salt water. Then there is a small eating space where you can use a microwave and get fresh hot water. Meals are prepared from dehydrated foods like those used in space. Further in, there are a table and seats, a counter, and windows where you can view the underwater scenery. The toilet has a shower curtain that has some, but not great privacy. Waste is put in a bag and brought back to land to be disposed of. In the back are six bunk beds. Under the floor, there is an escape hatch with extra scuba tanks for use in emergencies.

When a person enters Aquarius, changes occur in the body. First, people’s voices may sound squeaky due to the higher air pressure. After a long stay, when the aquanauts leave Aquarius, they must be careful since they become used to living in the high-pressure environment. Their bodies must be slowly decompressed by airlock to return to normal air pressure on land. To do this, the hatches are closed and the pressure inside is lowered very slowly to normal, taking 17 hours. If the pressure is lowered too fast, the aquanauts will get a sickness called the bends,

which causes bubbles to be formed in the body, and if untreated, could cause death. However, for visitors going down for only two or three hours, the pressure can be lowered in about three minutes.

Dealing with unpredictable weather is an additional obstacle that Aquarius must overcome to ensure the safety of its research activities. Aquarius has faced a growing danger from a rising number of hurricanes and storms, resulting in fires and destruction inside Aquarius. How can energy sources be obtained to maintain temperature, water, oxygen, lighting, and other essentials for survival in challenging circumstances? In spite of the tough challenges ahead, there exist numerous arguments in support of researching underwater habitation. The supporters think that it has an important function in exploring the marine ecosystem, and discovering tourism and business possibilities. For them,⁽⁷⁾ underwater habitat is a fantastic idea, not an empty dream.

*airlocks 減圧室

から の質問の答えとして最も適切なものを選び、その番号をマークしなさい。

According to the passage, what is the problem of rising sea levels?

- ① Livable areas and resources are decreasing.
- ② It causes fish stocks to quickly decline.
- ③ Large amounts of population suffer from water shortage.
- ④ Increased wetlands cause the spread of diseases.

According to the passage, what is NOT considered an advantage to live underwater?

- ① accessing affluent food resources
- ② experiencing the beauty of the ocean
- ③ enjoying sports in the water
- ④ escaping from natural disasters

Which one of the following is true about the description of Aquarius?

- ① Crews in Aquarius include its designers and builders.
- ② It is designed to resist water pressure on its body.
- ③ It is kept floating deep in the water for research.
- ④ The air pressure inside Aquarius is the same as that of outside.

What activity is NOT allowed to be done inside Aquarius?

- ① using electronic devices
- ② preparing meals
- ③ disposing of waste
- ④ seeing the underwater world

5

When should the air pressure inside Aquarius be carefully controlled?

- ① When using water for cooking and taking a shower
- ② When entering and exiting Aquarius
- ③ When getting a sickness in Aquarius
- ④ When having a long stay in Aquarius

6

Which is the closest in meaning to the underlined word (6)?

- ① accidental
- ② continuous
- ③ destructive
- ④ surprising

7

What does the underlined word (7) refer to?

- ① the tough challenges
- ② numerous arguments
- ③ the supporters
- ④ business possibilities

8

下の表は、この文章のメインポイントを段落ごとに順番に並べたものです。本文の流れに沿って、空欄に適する選択肢をひとつ選び、その番号をマークしなさい。ただし、同じ選択肢は一度しか使えません。

Disappearing land and its resources

Benefits of living underwater

8-1

The disposition of Aquarius

8-2

Accommodations and living activities in Aquarius

8-3

Future perspectives of living underwater

- ① Aquarius's structural features
- ② Experiments in living underwater
- ③ Strategies for aquanauts training
- ④ The process of constructing underwater habitats
- ⑤ Technical difficulties for underwater research
- ⑥ Aquarius's communication systems
- ⑦ Underwater research with Aquarius
- ⑧ Changing bodily functions caused by air pressure

9

最後の段落には下記の質問の答えがあります。その答えを日本語で要点を押さえて述べなさい。解答は解答欄に書きなさい。

9-1

According to the passage, what challenges does Aquarius face?

9-2

According to the passage, why do some people support the research for underwater living?

Part II 次の英文の空欄 **10** から **18** に入る最も適切な単語を選択肢から選び、その番号をマークしなさい。ただし、同じ選択肢は一度しか使えません。

Some people say that breaking a mirror is thought to bring misfortune. Do you find this idea **10** or rational? There are many types of superstitions around the world. For example, in America, it is generally believed that knocking on wood brings good luck. In China, people say that eating noodles on one's birthday can increase the **11** of living longer. In Western countries, the number 13 is considered to bring bad luck while in Eastern Asia, the number 4 makes people feel **12** and uncomfortable. Almost everyone in the world believes in such superstitions to some **13**. Superstitions are strong and often irrational beliefs that **14** our actions. You may think that superstitions are only for the elderly, but perhaps most of us have experienced wearing special socks or pants on a day when there was an important exam or interview, thinking that there should be a certain link between them. Probably, we are more superstitious than we **15**. The way superstitions **16** goes like this: When people do something **17**, a lucky event happens to them. When they do the same thing a few weeks later, another lucky event occurs. The connection between those events gradually strengthens. As a result, they believe that repeating the same action will bring good luck, even though there is no **18** connection between them.

選択肢

- | | | |
|-----------|--------------|------------|
| ① affect | ② arise | ③ chances |
| ④ extent | ⑤ insecure | ⑥ real |
| ⑦ realize | ⑧ ridiculous | ⑨ specific |

Part III 次の英文と図表を読んで、19 から 22 の質問の答えとして最も適切なものを選び、その番号をマークしなさい。

The crisis of global warming and climate change is leading to a great ecological impact such as deforestation and loss of biological species. Countries across the world are putting efforts into forest management to protect nature and biodiversity. However, the progress in this area is inconsistent and results are mixed. Different areas of the world face different challenges. The recent data on the re-forestation and protection of biodiversity in Eastern Asian countries are presented in Figures 1 and 2. The information demonstrates how the process of restoring forests and establishing areas to protect biodiversity has been progressing. Let's compare the situation in Japan with other countries!

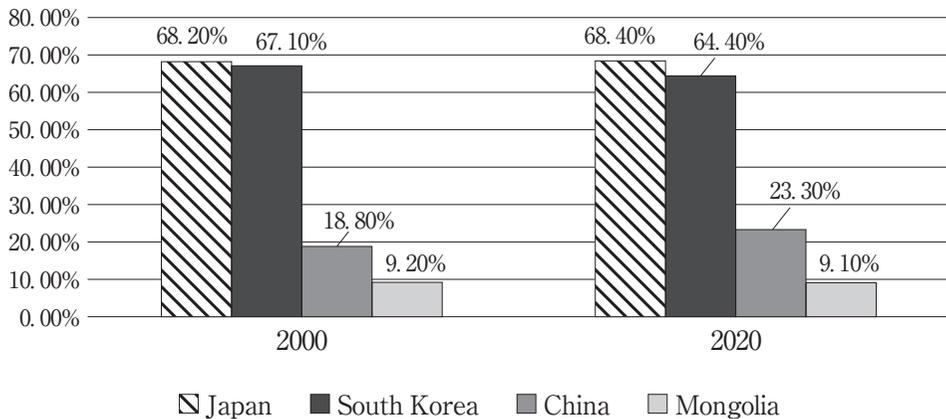


Figure 1. The proportions of land area covered by forest between 2000 and 2020

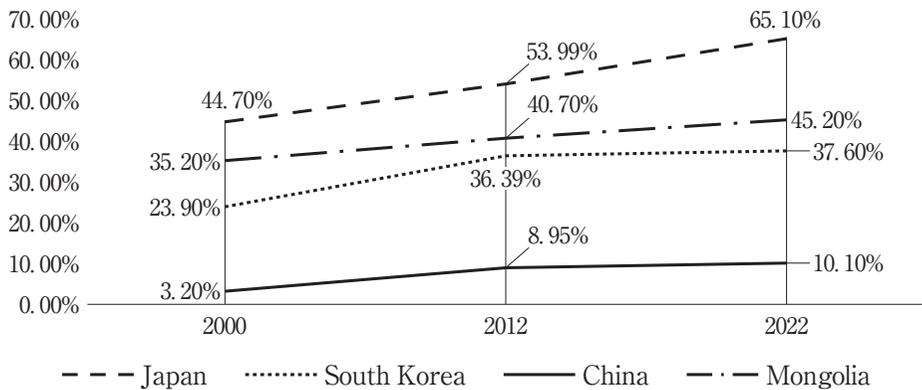


Figure 2. The proportions of terrestrial key biodiversity areas (KBAs) that are protected

Despite the global efforts in forest management and species preservation, the situation is still critical. Global forest areas continue to decline worldwide mostly due to the expansion of agriculture and urbanization. This leads to the inevitable impact on biodiversity with numerous species becoming extinct. Therefore, this is one of the SDG goals requiring more combined global effort to ensure its achievement.

Source: <https://unstats.un.org/sdgs>

19

What is mainly discussed in the passage?

- ① approaches to protect nature in four major countries
- ② lists of ecological challenges in both developed and developing countries
- ③ current state of forest management and preservation of wildlife
- ④ trends of nature-saving acts in the 20th century

20

Which of the following is probably true regarding the proportions of land area covered by forest in Figure 1?

- ① They were mostly sustained from 2000 to 2020 in these four countries.
- ② Japan and China successfully expanded them due to the prevention laws.
- ③ More land areas preserved forests in 2020 compared to 2000.
- ④ South Korea reduced it due to the expansion of human activities.

21

Which of the following can be said from Figure 2?

- ① Japan marked a rise to double the proportion of KBAs between 2000 and 2022.
- ② The trend of the proportion of KBAs in South Korea has become more gradual since 2012.
- ③ China had a sharp increase of KBAs from 2000 to 2012.
- ④ About four to five percent of forest area in Mongolia was KBAs in 2022.

22

Which of the following shows the author's position on nature preservation?

- ① Current problems in global forest areas must be analyzed more critically.
- ② Preservation of biodiversity cannot be accomplished without international collaboration.
- ③ Saving forests and animals has a significant impact on extinct species.
- ④ The government should stop agriculture and urbanization to save our nature.

Part IV 次の **23** から **26** の会話の空欄に入る最も適切な表現を選び、その番号をマークしなさい。

23

Amy : Do you think a good social life is important for staying healthy?

Beth : ().

Amy : What makes you think that way?

Beth : Well, if I do not have friends around, I will have fewer opportunities to laugh. I have been laughing to keep my mental health in good condition.

Amy : You have a point, and mental health is also connected to physical health.

Beth : Yes, exactly. That's why I believe having time for social life is very important.

- ① Definitely
- ② Falsely
- ③ Questionably
- ④ Vaguely

24

Ayano : What sort of music do you like to listen to?

Ben : I like instrumental music, especially clarinet solos.

Ayano : Oh, really? That's so cool! I used to play the clarinet when I was in junior high school.

Ben : Really? Then, is there any type of music you do not like?

Ayano : I honestly do not like pop music.

Ben : (). We surely have something in common.

- ① I agree to disagree
- ② I can't agree at all
- ③ I completely disagree
- ④ I couldn't agree more

25

Steve : I'm very proud of my son Carl, who was athletic and tried dangerous sports when he was young.

Jack : What sports did he try?

Steve : He started cycling at the age of two, swimming at four, climbing mountains at six, and karate when he was seven.

Jack : What a super kid athlete you had! But wasn't he afraid of such dangerous sports? Did he get seriously injured?

Steve : Yes, many times. ().

Jack : That's why he was able to learn how to manage the risks and get the skills he needs to be safe while practicing dangerous sports.

- ① But I still encouraged him to try with risky sports
- ② But they did cause him to lose motivation
- ③ So he asked me to try some safer sports
- ④ So I discouraged him from working hard for them

Emily : The train is coming soon. We are finally on the move.

Jason : Do you think we have time to pick up some snacks and drinks?

Emily : No. No time for that. Jason, I don't want to miss the train.

Jason : Relax, Emily. Some food and drinks will help us enjoy our travel, you know.

Emily : I know, but it's only a one-hour ride. ().

Jason : All right. It might be better to just wait for the train.

- ① We should take the next train for lunch
- ② We don't need them while on board
- ③ Food services are not available on the train
- ④ It might be difficult for us not to eat anything

Part V 次の各英文を読み、その内容を理解した上でカッコ内の語句をすべて使って、27 および 28 の下線部を正しく並べ換えなさい。ただし、他の語句を加えてはいけません。解答は作成した部分のみを解答欄に記入すること。

27

I hate waiting in line, especially when I am in a situation where I have to wait for services in uncomfortable, and overcrowded locations, such as checkout lines at grocery stores, hotels, or ATMs. Such long waiting situations make me feel irritated, bored, or stressed out. Waiting for just half an hour sometimes makes me want to change my plan or decision to complete an important daily task. I know waiting is a part of our daily life, but I cannot stand wasting my time on unproductive activities. I am afraid (this / not be / develop / able to / important / that / social skill / I will), which is needed to be a good citizen.

28

Kathy, a friend of mine, refuses to watch movies or read books that put her in depressing or tragic situations. She claims that she is worried that they might represent negativity in her actual life and that she doesn't want to be around those emotions since they prevent her from experiencing happiness to the fullest. I totally disagree with Kathy. I believe that stories that are depressing, heartbreaking, or disastrous are crucial to my growth and mental health. I can safely experience and process complex emotions virtually thanks to these stories. I can (my own / reading sad stories / with / learn / deal / grief and tragedies / by / how to). I feel relieved when I read about human suffering through depressing tales because it makes me feel sorry for other people.