

# 英 語

## 注 意

1. 問題は全部で11ページである。
2. 解答用紙に氏名・受験番号を忘れずに記入すること。(ただし、マーク・シートにはあらかじめ受験番号がプリントされている。)
3. 解答はすべて解答用紙に記入すること。
4. 問題冊子の余白等は適宜利用してよいが、どのページも切り離してはいけない。
5. 解答用紙は必ず提出のこと。この問題冊子は提出する必要はない。

### マーク・シート記入上の注意

1. 解答用紙(その1)はマーク・シートになっている。HBの黒鉛筆またはシャープペンシルを用いて記入すること。
2. 解答用紙にあらかじめプリントされた受験番号を確認すること。
3. 解答する記号・番号の○を塗りつぶしなさい。○で囲んだり×をつけたりしてはいけない。

解答記入例(解答が1のとき)

1	<input checked="" type="radio"/>	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	<input type="radio"/> 8	<input type="radio"/> 9	<input type="radio"/> 0
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4. 一度記入したマークを消す場合は、消しゴムでよく消すこと。×をつけても消したことになる。
5. 解答用紙をよごしたり、折り曲げたりしないこと。

1 次の英文を読み、以下の問いに答えなさい。

The Great Pacific Garbage Patch is a collection of marine debris in the North Pacific Ocean. Marine debris is litter that ends up in oceans, seas, and other large bodies of water.

The Great Pacific Garbage Patch, also known as the Eastern Pacific Garbage Patch and the Pacific Trash Vortex, lies in a high-pressure area between the U.S. states of Hawaii and California. This area is in the middle of the North Pacific Subtropical Gyre.

An ocean gyre is a circular ocean current formed by the Earth's wind patterns and the forces created by the rotation of the planet. The area in the center of a gyre tends to be very calm and stable. The circular motion of the gyre draws in debris. Debris eventually makes its way into the center of the gyre, where it becomes trapped and builds up. A similar garbage patch exists in the Atlantic Ocean, in the North Atlantic Gyre.

The motion of the gyre prevents garbage and other materials from escaping. The amount of material in the Great Pacific Garbage Patch accumulates because much of it is not biodegradable. Many plastics, for instance, do not wear down; they simply break into tinier and tinier pieces.

For many people, the idea of a “garbage patch” conjures up images of an island of trash floating on the ocean. In reality, these patches are usually made up of tiny bits of plastic, called microplastics. Microplastics that make up the majority of garbage patches can't always be seen by the naked eye. Satellite imagery of oceans doesn't show a giant patch of garbage.

The existence of the Great Pacific Garbage Patch was predicted by many oceanographers and climatologists. However, the actual discovery of the patch was made by a racing boat captain, Charles Moore. Moore was sailing from Hawaii to California after competing in a yachting race. Crossing the North Pacific Subtropical Gyre, Moore and his crew noticed millions of pieces of plastic surrounding his ship.

Any kind of trash can get into the ocean — from glass bottles to aluminum cans to medical waste. The vast majority of marine debris, however, is plastic. Scientists have collected up to 750,000 bits of plastic in a single square kilometer (or 1.9 million bits per square mile) of the Great Pacific Garbage Patch.

Plastic products can be very harmful to marine life in the gyre. For instance, loggerhead sea turtles often mistake plastic bags for jellyfish, their favorite food. And many marine mammals and birds, such as albatrosses, have become strangled by the plastic rings used to hold six-packs of soda together.

Marine debris can also disturb marine food webs in the North Pacific Subtropical Gyre. As microplastics and other trash collect on the surface of the ocean, they block sunlight from reaching plankton and algae below. Algae and plankton are the most common autotrophs in the marine food web. Autotrophs are organisms that can produce their own nutrients from oxygen, carbon, and sunlight.

If algae and plankton communities are threatened, the entire food web may change. Animals such as fish and turtles that feed on algae and plankton will have less food. If those animals start to die, there will be less food for predator species such as tuna, sharks, and whales.

The Great Pacific Garbage Patch collects marine debris from North America and Asia, as well as ships traveling through the area. Trash from the coast of North America takes about six years to reach the Great Pacific Garbage Patch, while trash from Japan and other Asian countries takes about a year.

No one knows how much debris makes up the entire patch. The North Pacific Subtropical Gyre is about 19 million square kilometers (7 million square miles). It is too large for scientists to trawl the entire surface. In addition, not all of the trash floats on the surface. Denser debris can sink to the middle or bottom of the water. We have no way to measure this unseen litter.

Because the Great Pacific Garbage Patch is so far from any country's coastline, no nation will take responsibility or provide the funding to clean it up. <sup>14</sup> Many international organizations, however, are dedicated to preventing <sup>A</sup> the patch from growing any further.

Cleaning up marine debris is not as easy as it sounds. Many pieces of debris are the same size as small sea animals, so nets designed to scoop up trash would catch these creatures as well. Even if we could design nets that <sup>B</sup> would just catch garbage, the size of the oceans makes this job too time-consuming to consider. And no one can reach trash that has sunk to the ocean floor.

Many expeditions have traveled through the Great Pacific Garbage Patch. Charles Moore, who discovered the patch in 1997, continues to raise awareness <sup>15</sup> through his own environmental organization, the Algalita Marine Research Foundation.

All the floating plastic in the Great Pacific Garbage Patch inspired National Geographic Emerging Explorer David de Rothschild and his team at Adventure Ecology to create a large catamaran made of plastic bottles: the *Plastiki*. The sturdiness of the *Plastiki* displayed the strength of plastics and the threat they pose to the environment when they don't decompose. In 2010, the crew successfully navigated the *Plastiki* from San Francisco, California, to Sydney, Australia.

Notes:

vortex 渦, gyre (海流の)旋回, biodegradable 生物分解性のある,  
conjure(s) up …を思い起こさせる, oceanographer(s) 海洋学者,  
climatologist(s) 気候学者, loggerhead sea turtle(s) アカウミガメ,  
jellyfish クラゲ, albatross(es) アホウドリ,  
strangle(d) 窒息死させる, algae < alga 藻類, nutrient(s) 栄養物,  
predator 捕食者, trawl トロール網で取る, catamaran いかだ舟,  
decompose 分解する

〔1〕 下線部A, Bを日本語にきなさい。(解答用紙その2)

〔2〕 1～15の質問に対して最も適切だと思われるものをひとつ選び, その番号をマークきなさい。(解答用紙その1)

1. The Great Pacific Garbage Patch is in

- (1) the Eastern Atlantic Garbage Patch.
- (2) the Atlantic Trash Vortex.
- (3) a high-pressure area between Hawaii and California.
- (4) oceans, seas, and other large bodies of water.

2. An ocean gyre is caused by

- (1) both the wind patterns and the rotation of the Earth.
- (2) either the Earth's wind patterns or its rotation.
- (3) the Earth's wind patterns.
- (4) the rotation of the Earth.

3. The Great Pacific Garbage Patch continues to grow in size because plastics

- (1) gradually become bigger and bigger.
- (2) in the ocean do not change in size.
- (3) naturally turn into smaller substances which are not harmful to marine life.
- (4) continue to flow into this area and do not change into other substances.

4. The Great Pacific Garbage Patch was actually discovered by
- (1) several people.
  - (2) many oceanographers and climatologists.
  - (3) the captain of a racing boat.
  - (4) the crew of the *Plastiki*.
5. Most of the marine debris is made up of
- (1) glass bottles.
  - (2) aluminum cans.
  - (3) medical waste.
  - (4) plastic.
6. Plastic can be dangerous to marine life. For example,
- (1) jellyfish mistake plastic bags for their food.
  - (2) loggerhead sea turtles mistake plastic rings for jellyfish.
  - (3) marine mammals and birds become strangled by plastic rings.
  - (4) albatrosses use plastic rings to catch fish.
7. If microplastics and other trash keep blocking sunlight from reaching plankton and algae below the surface of the ocean,
- (1) the entire food web may change.
  - (2) plankton and algae will become the most common autotrophs in the marine food web.
  - (3) autotrophs will produce more of their own nutrients.
  - (4) marine animals will eat more plankton and algae.

8. According to the article, marine debris
- (1) cannot change marine food webs in the North Pacific Subtropical Gyre.
  - (2) always floats on the surface of the ocean.
  - (3) can sink to the bottom of the sea.
  - (4) from Japan and other Asian countries takes longer to reach the Great Pacific Garbage Patch than debris from the coast of North America.
9. The word which has the least similar meaning to “garbage” is
- (1) debris.
  - (2) current.
  - (3) litter.
  - (4) trash.
10. The phrase “this area” means
- (1) the Great Pacific Garbage Patch.
  - (2) Hawaii.
  - (3) California.
  - (4) the South Pacific Subtropical Gyre.
11. The phrase “makes its way” means to
- (1) stop.
  - (2) return.
  - (3) turn.
  - (4) travel.

12. The word “it” means

- (1) debris.
- (2) gyre.
- (3) the center of the gyre.
- (4) the circular motion of the gyre.

13. The phrase “food webs” means

- (1) nets made by a spider to catch insects.
- (2) the systems on the Internet to find information about food.
- (3) combinations of food chains in an ecosystem.
- (4) the processes of how marine debris is changed into food.

14. The word “it” means

- (1) a nation.
- (2) the funding.
- (3) a country’s coastline.
- (4) the Great Pacific Garbage Patch.

15. The phrase “raise awareness” means to

- (1) continue meaningful expeditions.
- (2) improve the public’s knowledge about an issue.
- (3) increase the amount of natural debris.
- (4) promote international yacht racing.



2

以下のそれぞれの定義に従って、指定された頭文字で始まる最も適切な単語を書きなさい。(ただし、解答は与えられた頭文字から書くこと)

(解答用紙その2)

(解答例)

someone who is trained in science, especially someone whose job is to do scientific research

⇒(s        )

正解 (scientist)

1. a 100-year period counted forward or backward from the year of Jesus Christ's birth

⇒(c        )

2. a period of time in history starting from a particular time or event

⇒(e        )

3. an idea or set of ideas that is intended to explain something about life or the world, especially an idea that has not yet been proven to be true

⇒(t        )

4. the soft movable part inside your mouth that you use for tasting and speaking

⇒(t        )

5. a raised area at a railway station, from which passengers have access to the trains

⇒(p        )

3

次の会話文を読んで、以下の問いに答えなさい。

Bill: Where have you been lately? I haven't seen you on campus for a while.

Taro: I've been pretty ( 16 ) with a research project.

Bill: Oh, really? What are you researching?

Taro: I've been ( 17 ) several new technologies.

Bill: Technologies? I'm not sure I follow you.

Taro: Technologies connected with solar energy. I'm especially interested in solar panels.

Bill: Okay. So what's new with solar panels?

Taro: ( 18 ), a lot is happening in this area.

Bill: Are you working on a new type of solar panel with your professor?

Taro: ( 19 ), but not exactly.

Bill: You've lost me.

Taro: Well, he's working on a project to bring solar power to our campus. I'd like to get involved and help if I could. I'm hoping that we can ( 20 ) a way for our university to use solar power on campus.

Bill: To help reduce global warming?

Taro: That's right. You've got it!

〔1〕 下の選択肢 1～0の中から，上の空欄 16～20 に最も適切だと思われるものをひとつ選び，その番号をマークしなさい。(文頭に来る選択肢も全て小文字で表している。)(解答用紙その1)

- |                        |               |
|------------------------|---------------|
| 1. as a matter of fact | 6. throw over |
| 2. lost                | 7. in time    |
| 3. work out            | 8. tied up    |
| 4. eventually          | 9. sort of    |
| 5. checking out        | 0. make sure  |

〔2〕 次の文で，会話文の内容と一致するものは1を，一致しないものは2をマークしなさい。(解答用紙その1)

21. Bill has not met Taro recently.
22. According to Taro, he's been busy with his research regarding solar energy.
23. Neither Bill nor Taro is interested in solar power.
24. Taro's professor has little interest in using solar panels at the university.
25. Taro is concerned about global warming.

4 次の日本語の文を表す英文を，与えられた書き出しを使って完成させなさい。

(解答用紙その2)

わが国の物価は10年前の2倍になっている。

The cost of living...







