





あ

英 語 問 題

はじめに、これを読みなさい。

1. この問題冊子は 14 ページある。ただし、ページ番号のない白紙はページ数に含まない。
2. 解答用紙に印刷されている受験番号が正しいかどうか、受験票と照合して確認すること。
3. 監督者の指示にしたがい、解答用紙の氏名欄に氏名を記入すること。
4. 解答は、すべて解答用紙の所定欄にマークするか、または記入すること。所定欄以外のところには何も記入しないこと。
5. 問題に指定された数より多くマークしないこと。
6. 解答は、必ず鉛筆またはシャープペンシル(いずれも HB・黒)で記入のこと。
7. 訂正する場合は、消しゴムできれいに消し、消しくずを残さないこと。
8. 解答用紙は、絶対に汚したり折り曲げたりしないこと。
9. 解答用紙はすべて回収する。持ち帰らず、必ず提出すること。ただし、この問題冊子は、必ず持ち帰ること。
10. 試験時間は 70 分である。
11. マークの記入例

良い例	悪い例
	  

I 次の文章を読んで、以下の問に答えなさい。（*の付いた語句については、文末に注があります。）

In a recent interview about *Blue Planet II* *, Sir David Attenborough describes a sequence in which an albatross* arrives at its nest to feed its young. “And what comes out of the mouth?” he says. “Not fish, and not squid — which is what they mostly eat. Plastic.”

It is, as Attenborough says, heartbreaking. It’s also strange. Albatrosses forage* over thousands of kilometers in search of their preferred prey, which they pluck from the water with ease. How can such capable birds be so easily fooled, and come back from their long voyages with nothing but a mouthful of plastic?

It’s small comfort to discover that albatrosses are not alone. At least 180 species of marine animals have been documented consuming plastic, from tiny plankton to gigantic whales. Plastic has been found inside the guts of a third of UK-caught fish, including species that we regularly consume as food. It has also been found in other mealtime favorites like mussels and lobsters. a, animals of all shapes and sizes are eating plastic, and with 12.7 million tons of the stuff entering the oceans every year, there’s plenty to go around.

The prevalence of plastic consumption is partly a consequence of this sheer quantity.⁽⁷⁾ In zooplankton*, for example, it corresponds with the concentration of tiny plastic particles in the water because their feeding appendages* are designed to handle particles of a certain size. “If the particle falls into this size range it must be food,” says Moira Galbraith, a plankton ecologist at the Institute of Ocean Sciences, Canada.

Like zooplankton, the tentacled*, cylindrical creatures known as sea cucumbers* don’t seem too fussy about what they eat as they crawl around the ocean beds,⁽⁷⁾ scooping sediment* into their mouths to extract edible matter. However, one analysis suggested that these bottom-dwellers can consume up to 138 times as much plastic as would be expected, given its distribution in the sediment.

For sea cucumbers, plastic particles may simply be larger and easier to grab with their feeding tentacles than more conventional food items, but in other species there are indications that plastic consumption is more than just a passive process.^(±) Many animals appear to be choosing this diet. To understand why animals find plastic so appealing, we need to appreciate how they perceive the world.

“Animals have very different sensory, perceptive abilities to us. In some cases they’re better and in some cases they’re worse, but in all cases they’re different,” says Matthew Savoca at the NOAA* Southwest Fisheries Science Center in Monterey, California.

One explanation is that animals simply mistake plastic for familiar food items — plastic pellets, for example, are thought to resemble tasty fish eggs. But as humans we are biased by our own senses. To appreciate animals’ love of plastic, scientists must try to view the world as they do.

Humans are visual creatures,^(±) but when foraging many marine animals, including albatrosses, rely primarily on their sense of smell. Savoca and his colleagues have conducted experiments suggesting that some species of seabirds and fish are attracted to plastic by its odor. Specifically, they implicated dimethyl sulfide (DMS)*, a compound known to attract foraging birds, as the chemical cue emanating from* plastic. Essentially, algae* grows on floating plastic, and when that algae is eaten by krill* — a major marine food source — it releases DMS, attracting birds and fish that then munch on the plastic instead of the krill they came for.

Even for vision, we can’t jump to conclusions when considering the appeal of plastic. Like humans, marine turtles rely primarily on their vision to search for food. However, they are also thought to possess the capacity to see UV light, making their vision quite different from our own.

Qamar Schuyler at The University of Queensland, Australia, has got into turtles’ heads by modeling their visual capabilities and then measuring the visual characteristics of plastics as turtles see them. She has also examined the stomach

contents of deceased* turtles to get a sense of their preferred plastics. Her conclusion is that while young turtles are relatively indiscriminate, older turtles preferentially target soft, translucent* plastic. Schuyler thinks her results confirm a long-held idea that turtles mistake plastic bags for delicious jellyfish.

Besides b, there are other senses animals use to find food. Many marine animals hunt by echolocation*, notably toothed whales and dolphins. Echolocation is known to be incredibly sensitive, and yet dozens of sperm whales* and other toothed whales have been found dead with stomachs full of plastic bags, car parts and other human detritus*. Savoca says it's likely their echolocation misidentifies these objects as food.

"There's ⁽⁷⁾ this misconception that these animals are dumb and just eat plastic because it is around them, but that is not true," says Savoca. The tragedy is that all these animals are highly accomplished hunters and foragers, possessing senses honed by millennia of evolution to target what is often a very narrow range of prey items. "Plastics have really only been around for a tiny fraction of that time," says Schuyler. In that time, ⁽⁸⁾ they have somehow found themselves into the category marked 'food'.

Because plastic has something for everyone. It doesn't just look like food, it smells, feels and even sounds like food. Our rubbish comes in such a range of shapes, sizes and colors that it appeals to a similarly diverse array of animals, and this is the problem. Schuyler recalls someone asking, "why don't we make all the plastics blue?", seeing as experiments suggest this color is less popular among turtles. But other studies have shown that for other species the opposite is true.

So if there is no ⁽⁹⁾ "one size fits all" solution, no aspect of plastic that we can easily change to prevent animals from eating it, then what can we take from our foray* into the minds of plastic-eaters? Savoca hopes that tragic stories like Attenborough's albatross will help to turn the consumer tide against disposable plastics and encourage people to empathize* with these animals. Ultimately this will help to cut off the supply of junk food pouring into the oceans.

出典： Josh Gabbatiss, “Why marine animals can’t stop eating plastic” (BBC blog, March 2018) (一部省略・変更しました。)

注 *Blue Planet II* : BBC 製作のテレビ番組 albatross : アホウドリ
forage : (食料を) 探し回る zooplankton : 動物プランクトン
appendage : 肢 tentacled : 触手のある sea cucumber : ナマコ
sediment : 沈殿物 NOAA : アメリカの海洋気象局
dimethyl sulfide (DMS) : 有機硫黄化合物の一種
emanate from : ~から生じる algae : 藻類 krill : オキアミ
deceased : 死んだ translucent : 半透明の echolocation : 反響定位(音波の反響によって物体の位置や形を測定すること)
sperm whales : マッコウクジラ detritus : ゴミ foray : 探索
empathize : 感情移入する

(問 1) 下線部(ア)(イ)(ウ)(エ)(オ)(ク)の内容に最も近いものをそれぞれ1つ選び、その番号を解答欄にマークしなさい。

(ア) there’s plenty to go around

1. a lot of nutritious food is provided
2. more than enough plastic is supplied
3. plastic doesn’t dissolve easily
4. whales travel around the world

(イ) this sheer quantity

1. a third of UK-caught fish
2. a tremendous amount of zooplankton
3. 180 species of marine animals
4. 12.7 million tons of plastic

(ウ) don't seem too fussy about what they eat

1. are particular about the food they eat
2. are very concerned about the amount they eat
3. don't eat old and rotten stuff
4. don't care about what they consume

(エ) a passive process

1. the search for food on the ocean bed
2. the strategy of camouflage
3. the unintentional eating of plastic
4. the wait for preferred prey

(オ) Humans are visual creatures

1. Humans are able to have better sight because of their optical technology
2. Humans fall in love when they come across faces they visually like
3. Humans heavily rely on the sense of vision
4. Humans can create colorful artifacts

(カ) "one size fits all" solution

1. producing a kind of plastic that all animals hate
2. producing a kind of plastic that appeals to a diverse range of animals
3. producing as many colors of plastic as possible
4. producing only large pieces of plastic

(問 2) , に入れるのに最もふさわしいものを1つ選び、その番号をそれぞれ解答欄にマークしなさい。

1. By contrast
2. Fortunately
3. However
4. In short

1. birds and fish
2. odor and sound
3. sight and smell
4. turtles and jellyfish

(問 3) 以下の I 群の動物がプラスチックを食べる理由を II 群からそれぞれ 1 つ選び、その番号を解答欄にマークしなさい。

I 群

- (A) sea cucumbers
- (B) birds and fish
- (C) adult turtles
- (D) whales and dolphins

II 群

1. A chemical signal leads these creatures to eat plastic by mistake.
2. The dimensions of plastic are easy for these creatures to get their tentacles around.
3. These creatures are failing to visually distinguish between plastic and their prey.
4. These creatures can't tell apart plastic and their prey using the sound waves they emit.

(問 4) 以下の I 群の人物を表す記述として最も適切なものを II 群からそれぞれ 1 つ選び、その番号を解答欄にマークしなさい。

I 群

- (A) David Attenborough
- (B) Moira Galbraith
- (C) Matthew Savoca
- (D) Qamar Schuyler

II 群

1. This person explains how plastic particles are being consumed by microscopic animals.
2. This person has researched a case of mistaken identity where clear plastic is being eaten instead of a transparent prey.
3. This person highlights the plight of one creature that ventures out over tremendous distances to capture food for its young, only to bring back plastic.
4. This person is interested in how a particular chemical emission can lead to confusion in sea birds and fish.

(問 5) 下線部(カ)の示す内容を45字以内の日本語で説明しなさい(句読点も1字と数える)。答えは記述解答欄に記入すること。

(問 6) 下線部(キ)が指し示す一語を本文から抜き出し、記述解答欄に記入しなさい。

II 次の文章を読んで、以下の間に答えなさい。（*の付いた語句については、文末に注があります。）

A cycling session at Queen Mary Homeless Women's Hostel in London starts with some reflection in the tearoom. Eleven women discuss how they're doing this week, how the cycling went for them last week and what they're hoping to build on in today's session. Then they push their bikes to a local basketball court to practice in the safety of an off-road environment. Supported by instructors from Westminster Council's training team, they practice riding by themselves; pushing off, cycling in a straight line, looking over one shoulder, turning, keeping going.

Small achievements are important and depend on the starting point of each woman; for some, keeping going is a key goal to address physical fitness, for others it is balance or specific cycling skills. They are all working towards Bikeability Level 1 which enables them to control a bike safely enough to progress on to quiet roads, making turns and negotiating traffic. In some sessions the women learn about map-reading and planning journeys, pumping up tires and other basic maintenance.

Sometimes they are tired, emotional or sluggish* from their medication. Sometimes they are upbeat, chatty and excited for their weekly dose of cycling. But they are all determined.

"I love being part of the cycling club," says Brandy, who has been living at the hostel for two years. "The club has given me the chance to ride a bike, which I hadn't done since I was a child."

"I now am able to explore our city's parks and green spaces on my bike. Cycling helps me relax, stimulates my mind. It also makes me a bit tired in the evening, which means I can get a good night's sleep."

Last year Queen Mary approached Sustrans* to provide support in setting up and running a cycling club for women. We (Sustrans) worked for the first time with women facing significant challenges. Many have low levels of fitness. All

have survived challenging situations ranging from social isolation to dependence and abusive relationships.

The hostel staff, who are experienced mental health practitioners, were keen to develop cycling to boost* the women's personal confidence and help give them access to other spheres of society, such as college, community groups or paid employment. The hostel is moving away from a traditional medicalized model of mental health to a more holistic* model of wellbeing; and thinks cycling could be a really useful tool in helping move the residents towards more independent living.

After the success of a 10-week pilot project, mostly funded by the hostel themselves, the cycle club has recently received funding of £10,000 from Cycling Grants London to continue the club for another three years.

According to the Mental Health Foundation, homelessness and mental health often go hand-in-hand. Poor housing or homelessness can increase the chances of developing a mental health problem, or aggravate an existing condition.

Studies have shown that physical activity, including walking and cycling, can be used to overcome and even prevent stress, depression and anxiety. It can be as effective as medication and counseling, and a cheaper route to mindfulness.

Women, however, are less likely than men to take part in physical activity and cycling is no exception. Women in the UK make nearly three times fewer cycling journeys than men.

Recent research suggests the two main causes for this are logistical barriers* — mostly because women still undertake the majority of childcare and household tasks — and fear of judgment emanating from social pressure around appearance.

The expanding network of dedicated bike routes and schemes has increased cycling levels in London, yet the "build it and they will come" approach ignores the fact that not all individuals start from the same point. Targeted social interventions are an important, yet often forgotten, part of the package to achieving equity* of access to cycling.

In an ideal world, potentially transformative projects such as this one would not

be reliant on piecemeal* funding. Statutory provision* of social interventions such as this could be part of a preventive approach to the isolation and marginalization which contribute to mental health problems, as well as combating congestion* and air pollution.

出典：Lucy Colbeck and Emilie Charlesworth, "The cycling club helping homeless women regain independence" (*Guardian*, Friday 6 April 2018)
(一部省略・変更しました。)

注 sluggish：動きが鈍い Sustrans：歩行や自転車など持続可能な交通手段の使用を促進するイギリスの慈善団体
boost：高める holistic：ホリスティックな(部分的な治療に頼らず生活全体の改善を考える)
logistical barriers：制度的な障害
equity：公平性 piecemeal：散発的な statutory provision：法の整備
congestion：渋滞

(問 1) 下線部(ア)(イ)(ウ)の内容に最も近いものをそれぞれ1つ選び、その番号を解答欄にマークしなさい。

(ア) in the safety of an off-road environment

1. in a place where they can enjoy cycling without damaging nature
2. in a place where they can learn how to read maps
3. in a place where they can master riding skills in nature
4. in a place with no cars or walkers

(1) negotiating traffic

1. being well aware that they are still beginners
2. chatting with walkers and other riders while on their bikes
3. proceeding safely, minding other bikes, cars and walkers
4. stopping to worry about their ability to ride on a bike

(2) go hand-in-hand

1. are dealt with one by one
2. are often discussed but not solved
3. get ignored as being less urgent
4. have a close relationship with each other

(問 2) 波線部分を以下のように言い換えるとき、空欄(A)(B)に入れるのに最も適切な語をそれぞれ1つ選び、その番号を解答欄にマークしなさい。

In an ideal world, potentially transformative projects such as this one would not be reliant on piecemeal funding.

→It is a (A) that in the real world, a project with the power to bring about change such as this one (B) to rely on piecemeal funding.

- (A)
1. big surprise
 2. great pity
 3. welcome change
 4. wonderful discovery
- (B)
1. has
 2. has stopped
 3. has yet
 4. used

(問 3) 本文の内容に基づいて、(A)～(E)の質問の答として最も適切なものをそれぞれ1つ選び、その番号を解答欄にマークしなさい。

- (A) Which is true about Brandy?
1. She feels less stressed and more free than before.
 2. She has shut herself indoors.
 3. She is now too tired to sleep at night.
 4. She rode a bike for the first time in her life.

(B) Which is true about the Queen Mary Hostel?

1. It has succeeded in teaching the residents how to live a life following rules.
2. It is trying to help the residents toward independence and participation in society.
3. It is using the cycling club mainly for reducing the medical budget.
4. It still believes in the traditional mental health policy of medicine and consulting.

(C) From where did the cycling club of the Queen Mary Hostel receive funding to continue their activities?

1. Cycling Grants London.
2. Mental Health Foundation.
3. Sustrans.
4. Westminster Council.

(D) What does the phrase "build it and they will come" mean?

1. That even if you try to realize some important plans, bad things will happen.
2. That if you build a big facility, the environment around the area will be spoiled.
3. That you should keep on trying important challenges, even if they are very difficult to realize.
4. That when you provide good infrastructure, people will willingly use it.

(E) Why are “targeted social interventions” important?

1. Because interventions sometimes violate human rights.
2. Because it's urgent to improve the traffic systems and stop air pollution in London.
3. Because society values efficient delivery of packages by bicycle.
4. Because some people cannot benefit from new infrastructure without extra support.

(問 4) 本文の内容に基づいて、下の質問の答として最も適切なものをグループAとグループBからそれぞれ1つ選び、その番号を解答欄にマークしなさい。

What are the two reasons why women in the UK make nearly three times fewer cycling journeys than men?

[グループA]

1. Because men and women are different physically.
2. Because there is a tradition of cycling among women.
3. Because women are busier with domestic chores.
4. Because women tend to prefer public transportation.

[グループB]

1. Because cycling is more popular among women than men.
2. Because of concern about how they are seen by others.
3. Because there have been fewer hostels for female cyclists.
4. Because women prefer running to cycling.