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I Read the text and answer the questions.

[1] The Born Free Foundation, a charity that campaigns for animals to be kept in the wild, did a survey of 2,000 people from across the United Kingdom (UK).

[2] Their results showed 76% of those surveyed said they wanted the UK government to, over time, stop allowing large animals to be kept at zoos.

[3] The foundation says this shows there is (1) “a tide of public support” for their campaign to keep animals out of zoos, and that it’s something “politicians and decision-makers can no longer afford to ignore.”

[4] However, not everyone agrees. The British and Irish Association of Zoos and Aquariums (BIAZA) — that represents zoos in the UK — said that the figure from the Born Free Foundation “doesn’t seem to relate to the real world.”

[5] It says 35 million members of the public visit zoos and aquariums in the UK on a normal year and as a result “it is overwhelmingly clear that the Great British public supports good zoos and aquariums to care for animals and to make our planet a better and wilder place.”

[6] A poll published in 2019 found that 66% of respondents thought zoos had a positive impact on animal conservation.

What are the arguments for zoos ?

[7] Those in favour of zoos argue that they are important for education and conservation.

[8] It’s legally required for zoos in the UK to be a place of learning — a law passed in 1981, called the Zoo Licensing Act, requires zoos to educate the public, rather than just be places for entertainment.

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[9] When you go to one, you'll see lots of information about the animals you come across, and activities are set up to encourage more active learning about them. (2) Many people see this as a good thing, as the more a person knows about animals, the better and more likely they are to protect them.

[10] Conservation means the act of protecting animals and other forms of wildlife from (3) going extinct. Supporters of zoos think that they're key in keeping some of the rarest animal species alive. BIAZA said, "We're in the midst of an ongoing, global extinction crisis. The UN estimates more than one million species could be wiped out in our lifetime. Good zoos are on a mission to halt and reverse this."

What are the arguments against zoos ?

[11] One argument is that you'll never be able to exactly replicate an animal's home environment if they're not from the UK. For example, African elephants can be found in zoos across the UK, but the hot climate in the countries they call home is very different to the changeable and often cold weather in the UK.

[12] The UK's largest animal welfare charity, the RSPCA¹, believes strongly that elephants shouldn't be kept in zoos for this reason — it said in a report published in 2002: "For most elephants the European climate may be too cold and wet — sometimes they spend up to 16 hours confined indoors in cold weather."

[13] A spokesperson said, "The RSPCA believes that animals should only be kept in captivity (4) _____ good welfare can be assured — and for some species this may never be possible. "Animals need to be kept in a way that meets the needs and normal biological requirements of their species, in sufficient space containing the necessary shelter, cover and environmental stimulus so as not to cause distress or suffering."

[14] Some people think we just don't need zoos anymore. With technology like CGI, robotics, and virtual reality, conservationists will soon be able to create immersive experiences where

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someone could not only learn about animals, but walk among them in their natural habitat. National Geographic reported that there are already some programmes that allow you to experience life as the animal itself.

注1 The RSPCA (The Royal Society for the Prevention of Cruelty to Animals) 英国王立動物虐待防止協会

[Adapted from BBC, February 21, 2023, <<https://www.bbc.co.uk/newsround/64660428>>]

〈Questions〉

1. What does underlined part (1) indicate in paragraph [3] ?
- a. A lot of people think that zoos must not keep animals.

b. Fewer people support the conservation of animals.

c. More and more people are willing to participate in surveys on zoos.

d. The number of people visiting zoos in the UK is increasing each year.
2. Under the Zoo Licensing Act, zoos must ensure that:
- a. visitors will be entertained

b. visitors will learn about animals

c. visitors will protect animals

d. visitors will ride lots of animals
3. Translate underlined part (2) into Japanese.
4. Which of the following is closest in meaning to underlined phrase (3) in paragraph [10] ?
- a. becoming sick

b. being born

c. dying out

d. receiving treatment

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5. Why does the RSPCA argue against keeping African elephants in zoos?

- It is because they are ...
- a. a common and popular species in zoos that attract many visitors
 - b. a rare species that zoos do not have to protect
 - c. a species that can easily adjust to different climates
 - d. a species that is not suited to the European climate

6. Which of the following fits best in blank (4) in paragraph [13]?

- a. and
- b. because
- c. if
- d. yet

7. According to paragraph [14], which of the following is true?

- a. Many people think that we should increase zoos.
- b. Technology like virtual reality enables us to hunt animals.
- c. There are already some programmes through which we can experience the life of animals.
- d. We can currently learn how animals live through technology like CGI and robotics.

II Read the text and answer the questions.

[1] Huge amounts of plastic end up in rivers and oceans every year, harming the environment and potentially also human health. But what if we could pull it out of water with the power of magnets?

[2] As a child, Fionn Ferreira spent hours exploring the coastline near his hometown of Ballydehob in south-west Ireland. But he was shocked by the large amounts of plastic litter he found strewn across the beach and in the sea.

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[3] Around the world, humans produce an estimated 300 million tonnes of plastic waste every year, and at least 10 million tonnes end up in our oceans — (1) the equivalent of a rubbish truck load every minute.

[4] (2) But it was the plastic that Ferreira couldn't see that really concerned him. Microplastics are fragments smaller than five millimetres and either come directly from the products we use or are created as larger plastic objects break down in the environment. They have been found at the bottom of the world's deepest ocean trench and lodged in Arctic sea ice.

[5] “I got really anxious when I found out about microplastics,” says Ferreira, who is now aged 20 and a chemistry student at Groningen University in the Netherlands. “These plastics are going to be in our environment for thousands of years. We are going to be dealing with them long after we stop using plastic.”

[6] As he learned more about the environmental impact of microplastics in the environment, Ferreira began to look for ways to combat them. And it was an unexpected discovery on his local beach that gave him the idea for a new way to remove these tiny plastics from the oceans.

[7] Microplastics are found in our clothes, cosmetics and cleaning products. One load of laundry can release an average of 700,000 microplastic fibres. Less than a millimetre in length, these fibres make their way into rivers and oceans, where they are eaten by fish and even corals. Because of their (3) _____ size, microplastics are able to pass through filtration systems and end up everywhere, making it very difficult to (4) _____ them.

[8] In a 2018 study, plastic contamination was also found in bottled water, with 93% of 259 bottled water samples containing microplastics.

[9] Chemicals used in plastic have been linked to a range of health problems including cancer and heart disease.

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[10] “The urgency of the plastic problem has not yet hit people,” says Ferreira. “Plastic pollution is a public health issue. You are not just drinking the plastic, but also the chemicals that are added to it. Plastic attracts heavy metals and brings these into our system.”

[11] The amount of plastic in the environment is projected to get much worse. Plastic production is expected to increase by 60% by 2030 and triple by 2050. By then, there could be more plastic than fish in the ocean, according to the Ellen MacArthur Foundation, a UK non-profit organisation that promotes reusing materials rather than throwing them away.

[12] At the age of 12, Ferreira became determined to find a solution to remove microplastics from water. He started by designing his own spectrometer¹, a scientific instrument that uses ultraviolet light² to measure the density of microplastics in solutions.

[13] “I could see there were a lot of microplastics in the water,” he says. “There needed to be a way to combat this.”

[14] It was on his local beach that Ferreira (5)_____ with a solution that could extract microplastics from water. “I found some oil spill residue with loads of plastic attached to it,” he says. “I realised that oil could be used to attract plastic.”

[15] Ferreira mixed vegetable oil with iron oxide powder³ to create a magnetic liquid. He then blended in microplastics from a wide range of everyday items, including plastic bottles, paint and car tyres, and water from the washing machine.

[16] After the microplastics attached themselves to the magnetic liquid, Ferreira used a magnet to remove the solution and leave behind only water.

[17] Ferreira is currently in the process of designing a device that uses the magnetic extraction method to capture microplastics as water flows past it. The device will be small enough to fit inside waterpipes to continuously extract plastic fragments as water flows through them. He has also been working on a system that could be fitted to ships so they can extract plastics from the oceans.

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注1 spectrometer 分光器

注2 ultraviolet light 紫外線

注3 iron oxide powder 酸化鉄粉

[Adapted from BBC, August 26, 2021,
〈<https://www.bbc.com/future/article/20210825-how-to-fight-microplastic-pollution-with-magnets>〉]

〈Questions〉

1. Which of the following is closest in meaning to underlined phrase (1) in paragraph [3] ?

a. the large number on
b. the opposite side of
c. the same amount as
d. the similar type for
2. Translate underlined part (2) into Japanese.
3. Which combination fits best in (3) and (4) in paragraph [7] ?

a. (3) : flexible (4) : build
b. (3) : large (4) : break
c. (3) : tiny (4) : avoid
d. (3) : visible (4) : find
4. Which of the following is **NOT** one of the reasons why Ferreira is worried about microplastics ?

a. People are drinking plastic and the chemicals it contains.
b. People do not yet understand how urgent the problem is.
c. People will have to live with plastics in their environment for a very long time.
d. People will stop using plastics after thousands of years.

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5. What does the Ellen MacArthur Foundation promote?
- a. Changing the economy by creating materials

b. Reusing materials rather than discarding them

c. Slowing the economy by recycling materials

d. Throwing away materials in the circular economy
6. Which of the following fits best in blank (5) in paragraph [14] ?
- a. broke up

b. came up

c. gave up

d. messed up
7. Which of the following is **NOT** one of Ferreira’s ideas for removing microplastics?
- a. Using a small device to extract microplastics from flowing water in pipes

b. Using a spectrometer to destroy microplastics before they can enter the oceans

c. Using magnetic liquid to remove microplastics from water

d. Using the magnetic extraction method in the oceans

III Write your response to the following question in English in approximately 50 words:

Many people say we should ban zoos. Do you agree or disagree? Include your reasons.

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III