

英 語

(解答番号 ~)

〔 I 〕 次の英文を読んで、問 1 ~ 問 4 に答えなさい。

(解答番号は ~) (32点)

How does air pollution affect people differently?

Air pollution doesn't affect everybody the same way. Young people, elderly people, and people who are already sick are hurt more by bad air quality. In the U.S., air quality is often worse in some neighborhoods than others. Structures like highways and power plants are often next to minority neighborhoods. The noise, smoke, and *exhaust get into people's homes and can make them sick.

Inequality in *exposure to air pollution is (ア) problem. In most places, air quality is better than it used to be. But people of color still get exposed to more air pollution than white people do. That means the way the government has tried to improve air quality has not made things fairer. We wanted to know if there are certain kinds of polluters that are especially unfair. If we know that a specific pollution source is causing inequality, working to fix that source could help make things fairer.
(a)

Methods

We focused on a kind of pollution called PM2.5. PM2.5 consists of very tiny *particles — smaller than 2.5 millionths of a meter! Our bodies can filter out large particles like dust, (イ) PM2.5 particles are so small that when you breathe them in, they can go deep into your lungs. Some can even cross into your bloodstream. Over time, this can make you sick! Because PM2.5 is dangerous to your health, governments keep track of how much of it is in the air.

We used an air quality model (computer program) to figure out how much pollution came from each source. The model includes 5,434 different pollution sources, which we grouped into 14 categories. We only looked at human-caused emissions, so we didn't include wildfire smoke, for example.

We used data from ^(b)the U.S. Census American Community Survey to find out how many people live in each area. Census data also lets us know the race and ethnicity of people in each area.

Results

We found that for nearly all types of pollution and nearly all places, people of color had unfair extra exposure to pollution. Industry, small cars and trucks, construction, and heavy-duty diesel vehicles cause the largest total pollution inequality. We also found two exceptions: white people on average have slightly more exposure to pollution from agriculture and coal power plants.

Discussion

Our results show that it's not just one kind of pollution source that causes inequality. Almost every pollution source affects people of color more than white people. That means that fixing one or two pollution sources isn't enough to end inequality. We checked whether the differences are due to differences in wealth. We also looked at whether it was (ウ) in small towns compared to big cities. Our results were basically the same for all states, cities, and rural areas, and for all income levels. The total amount of pollution from each source depends on the part of the country.

Inequality in air pollution in the United States didn't happen randomly.^(c) The history of racism in the U.S. is an important part of the story. City planners put highways (工)^(A) black and other minority neighborhoods. From the 1930s to the 1970s, the U.S. government told banks that lending

money to people in minority neighborhoods was too risky. Without loans from banks, people couldn't get enough money to buy houses. This was part of a practice called *redlining. It's illegal now, but people are still feeling the effects. Our data showed that people who live in redlined neighborhoods are exposed to more air pollution than average.

Conclusion

Air pollution is a big problem. Most people in the world live with air quality that's worse than World Health Organization guidelines recommend. Many things will need to change to make air quality better. In many places in the United States, air quality is much better now than it was even 20 years ago, but the inequality in air pollution exposure (オ). Individual choices can help, like choosing to ride a bike instead of driving a car. But not everyone is able to ride a bike to get to school or shopping or work, and in many places, it is unsafe.

The biggest changes come when people work together to make their communities better. This could mean:

- making public transport more convenient, cleaner, and safer;
- planning cities around bicycles and pedestrians instead of around cars;
- passing laws to stop the biggest polluters;
- closing coal power-plants and requiring solar, wind, and other renewable energy;
- requiring electric vehicles or low-emission engines for cars, trucks, and off-road engines such as ships and construction equipment.

Look around at your community. What do you think would make it a better, safer, and fairer place to live?

- *〔注〕 exhaust : 排気ガス exposure : さらされること
 particle : 粒子
 the U.S. Census American Community Survey : アメリカの国勢調査
 redlining : (金融機関による)貸付や保険引き受け拒否

問1 空所(ア)～(オ)に入れるのに最も適した語(句)を①～④の中からそれぞれ一つ選び、その番号をマークしなさい。

- | | | | |
|-----|--------------------|----------------------|---|
| (ア) | ① a minor | ② a new | |
| | ③ an abstract | ④ an old | 1 |
| (イ) | ① because | ② but | |
| | ③ so | ④ unless | 2 |
| (ウ) | ① clear | ② continuous | |
| | ③ different | ④ indispensable | 3 |
| (エ) | ① all the way to | ② far from | |
| | ③ in opposition to | ④ in the middle of | 4 |
| (オ) | ① has appeared | ② has been solved | |
| | ③ hasn't gone away | ④ will stay the same | 5 |

問2 下線部(a)~(e)の語の意味に近いものを①~④の中からそれぞれ一つ選び、その番号をマークしなさい。

- | | | | |
|-----|----------------|---------------|---------------------------------|
| (a) | ① attach | ② correct | |
| | ③ limit | ④ prepare | <input type="text" value="6"/> |
| (b) | ① disasters | ② fires | |
| | ③ gases | ④ waves | <input type="text" value="7"/> |
| (c) | ① accidentally | ② properly | |
| | ③ thoroughly | ④ totally | <input type="text" value="8"/> |
| (d) | ① accustomed | ② efficient | |
| | ③ forbidden | ④ recommended | <input type="text" value="9"/> |
| (e) | ① drivers | ② passengers | |
| | ③ visitors | ④ walkers | <input type="text" value="10"/> |

問3 本文の内容を考えて、次の(あ)~(え)に最も適したものを①~④の中からそれぞれ一つ選び、その番号をマークしなさい。

(あ) Which of the following was NOT considered in their research?

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- ① How many people live in each area
- ② How much pollution came from each source of pollution
- ③ Non-human-caused emissions
- ④ The race and ethnicity of people in each area

(い) According to the Results section, the total amount of pollution in an area varies depending on 12.

- ① whether people of color live in the area or not
- ② whether the area is a large city or a rural area
- ③ whether the area's residents are engaged in agriculture or not
- ④ whether the area's residents use diesel vehicles or not

(う) The underlined part (A) refers to 13.

- ① human rights activists' efforts to prevent racism
- ② the arguments over how to solve environmental problems including air pollution
- ③ the fact that in some neighborhoods air quality is worse than in others
- ④ the method they chose to know the main cause of air pollution in each area

(え) According to the Conclusion section, to improve air quality, 14.

- ① individual choices can be helpful but they are not enough on their own
- ② laws to stop using renewable energy are needed
- ③ people should design cities where people can't get around by car
- ④ people should live in places recommended by World Health Organization guidelines

問4 次の①～⑤の中から本文の内容と一致するものを二つ選び、その番号をマークしなさい。

- ① Structures like highways and power plants which cause air pollution are often built avoiding minority neighborhoods.
- ② Thanks to the efforts the government has made, air quality is almost the same in every area in the U.S.
- ③ White people are more exposed to two types of pollution than people of color.
- ④ According to the research, very few sources of pollution cause inequality.
- ⑤ The main population in redlined neighborhoods are people of color, who are suffering from air pollution worse than in white neighborhoods.

〔Ⅱ〕 次の英文を読んで、問1～問4に答えなさい。

(解答番号は 17 ～ 30) (28点)

London taxis — from black to green

Think of London, and what iconic images come into your mind? Big Ben? Tower Bridge? Soldiers in red uniforms? Or do you think of red buses? Or black taxis? All of these are icons which people often think of, when they think of London.

Only two cities in the world are (ア) their taxis: London and New York. New York's iconic taxis are usually yellow; London's are black. But why black?

Many years ago, when London's first motor taxis appeared, almost all cars were painted black. This was the age when in America, Henry Ford, who built Ford cars, famously said: "You can have any colour you like, (イ) it's black!". In Ford's time, almost all cars were black.... Everywhere!

Things are different today; cars come in all colours, even London taxis. There are red ones and green ones, ones with pictures on them and ones with advertising all over them; but there are still plenty of "(ウ)" too.

London's traditional taxis are very special cars, and they are different from ordinary cars. They are specially built as taxis, with a section at the front only for the driver, and a section at the back for passengers. They have lots of room for luggage, and they can turn 180° in a very small circle (about 8 metres).

However, London taxis are changing fast. Most taxis have diesel engines, and they (エ). Since November 2021 London taxis must all meet the *Euro-6 emissions standards. Basically, this means that there are no longer any taxis in London built before 2008. Many taxi-drivers are unhappy, because London taxis are built to last for 20 years or more!

More changes are already coming; before long all London taxis will have

to be ZEVs (zero emission vehicles); they will have to (オ). London's biggest taxi company, which has 4,000 cabs, was planning to be all electric by 2023.

Becoming electric is the biggest change to London's taxis in over 100 years. Some new London taxis are now just ordinary *SUVs; but others still look like traditional taxis. And a lot of them are still black!

*〔注〕 Euro-6 emissions standards : ユーロ 6 排出ガス基準

SUV : スポーツ用多目的車。スポーツや悪路に強い利便性の高い車。

問 1 空所(ア)~(オ)に入れるのに最も適した語(句)を①~④の中からそれぞれ一つ選び、その番号をマークしなさい。

- | | | | |
|-----|-------------------------------------|------------------------|----|
| (ア) | ① dropped by | ② familiar with | |
| | ③ famous for | ④ looked up to | 17 |
| (イ) | ① after | ② as long as | |
| | ③ because | ④ so that | 18 |
| (ウ) | ① black cars | ② colourful cars | |
| | ③ Ford cars | ④ painted cars | 19 |
| (エ) | ① are cheap | ② are domestic | |
| | ③ cause pollution | ④ have more horsepower | 20 |
| (オ) | ① be imported from outside the EU | | |
| | ② be in colours other than black | | |
| | ③ run on electricity or on hydrogen | | |
| | ④ run only on fixed routes | | 21 |

問2 下線部(a)~(e)の語(句)の意味に近いものを①~④の中からそれぞれ一つ選び、その番号をマークしなさい。

- | | | | |
|-----|------------------------|-----------------|----|
| (a) | ① fresh | ② positive | |
| | ③ symbolic | ④ urban | 22 |
| (b) | ① are engaged | ② are offered | |
| | ③ enter | ④ get along | 23 |
| (c) | ① a part of a building | ② space | |
| | ③ storage | ④ territory | 24 |
| (d) | ① challenge | ② contribute to | |
| | ③ encounter | ④ reach | 25 |
| (e) | ① as well | ② immediately | |
| | ③ in advance | ④ soon | 26 |

問3 本文の内容を考えて、次の(あ)、(い)に最も適したものを①~④の中からそれぞれ一つ選び、その番号をマークしなさい。

(あ) Which of the following is true about London's traditional taxis?

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- ① They are all owned by one company.
- ② They are different from regular cars.
- ③ They are not allowed to advertise.
- ④ They were originally yellow.

(い) What does the underlined sentence (A) suggest? 28

- ① London taxi drivers are accustomed to changing their cars every twenty years.
- ② London taxi drivers are happy to help protect the global environment.
- ③ London taxi drivers are worried about changing their traditions.
- ④ London taxi drivers don't want to get rid of their cars when they are still in good condition.

問4 次の①～⑤の中から本文の内容と一致するものを二つ選び、その番号をマークしなさい。

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30

- ① When motor taxis appeared in London many years ago, black cars were chosen for their luxurious appearance.
- ② When you take a London taxi, you cannot sit next to the driver.
- ③ Some manufacturers started to build cars that met Euro-6 emissions standards before 2008.
- ④ All taxi companies in London were planning to shift to electric cars by 2023.
- ⑤ London taxis are becoming electric cars, which is the biggest change in about a century.

〔Ⅳ〕 次の(ア)~(カ)の日本語の意味を表すように、①~⑤の語(句)を並べ替えて英文を完成し、2番目と4番目に来る語(句)の番号をマークしなさい。ただし文頭に来るものも小文字になっています。(解答番号は ~) (20点)

(ア) 友達が多いほど、人生は豊かになるというのは本当だろうか。

Is it true , the richer your life becomes?

- ① friends ② have ③ more
④ the ⑤ you

(イ) 学生たち全員が昨日そのイベントに参加したわけではなかった。

yesterday.

- ① all ② joined ③ not
④ the event ⑤ the students

(ウ) あなたはどこでコンピュータを修理してもらいましたか。

Where ?

- ① did ② get ③ repaired
④ you ⑤ your computer

(エ) 今あなたに話したことを、ナンシーに言わないと約束できますか。

Can you I just told you?

- ① Nancy ② not ③ promise
④ to tell ⑤ what

(オ) 今日の午後、どこに行くべきか知っていますか。

Do you this afternoon?

- ① go ② know ③ should
④ we ⑤ where

(カ) そこで起こったことはすべて驚くべきことだった。

Everything .

- ① amazing ② had ③ happened there
④ that ⑤ was

(キ) 電気がついてやっと聴衆は席を立った。

It was _____ **53** _____ **54** _____ that the audience left their seats.

- ① came ② not ③ on
④ the lights ⑤ until

(ク) もう仕事に遅刻してはいけないよ。

You _____ **55** _____ **56** _____ for work again.

- ① be ② better ③ had
④ late ⑤ not

(ケ) カナダはインドの約3倍の広さがある。

Canada _____ **57** _____ **58** _____ as India.

- ① as ② is ③ large
④ three ⑤ times

(コ) あなたの助けがなかったら、私はそのプロジェクトに成功しなかったでしょう。

Without your help, _____ **59** _____ **60** _____ the project.

- ① have ② I ③ in
④ succeeded ⑤ wouldn't