

英 語

試験時間60分

[注 意]

1. この問題冊子は指示があるまで開いてはいけない。
2. 受験番号が正しく記入・マークされていない場合は0点となる。
3. 解答はすべて解答用紙の所定欄にマークすること。例えば、問題文中に

10

 と表示のある問いに対して③と解答する場合は、次の(例)のように **解答番号10の解答記入欄の③**にマークすること。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る。

(例)

解答 番号	解答記入欄 (マーク)									
10	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

4. 問題冊子の各ページの余白は自由に使用してよいが、どのページも切り離してはいけない。
5. 試験終了後、解答用紙は通路側に置くこと。なお、問題冊子は持ち帰ること。

英 語
(解答番号

1

 ~

52

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〈マーク式についての注意〉

1. 機械が読み取って採点するので、折り曲げたり汚したりしないこと。
2. マークはHBの鉛筆で枠の中を濃く塗りつぶすこと。
3. 1つのマーク欄には1つしかマークしないこと。
4. 訂正はプラスチック消しゴムでよく消し、消しきらずはきれいに取り除くこと。
5. 所定欄以外には何も書かないこと。

問題 I 次の英文を読んで、後に続く各問の答えとして最も適切なものを、それぞれの①～④の中から一つずつ選び、マークして答えなさい。

A new study examines possible harm caused by microscopic pieces of plastic that end up inside people's bodies. These materials—known as microplastics and nanoplastics—can enter the body through the air or in food or drinks. Tiny plastic pieces have received widespread attention in the media. But so far, very little research has been done on how the substances affect human heart health. The new study suggests the buildup of such plastics inside the body can increase the risk of stroke, heart attack or death. But the researchers noted the evidence presented cannot prove a direct link between tiny plastic materials and heart problems.

The study involved 257 people who had medical operations to clear blocked blood vessels in their necks. Italian researchers examined the fatty buildup the doctors removed from the carotid arteries, which supply blood and oxygen to the brain. Using two methods, they found evidence of plastics—mostly nanoplastics that cannot be seen—in the artery plaque of 150 patients. No evidence of plastics was seen in 107 patients.

The team followed these people for three years. During that time, 30 individuals, or 20 percent of the group with plastics, had a heart attack, stroke, or died from any cause. These rates dropped to about 8 percent among those with no evidence of plastics. The researchers also found more evidence of inflammation in individuals with tiny plastic bits in their blood. Inflammation is the body's reaction to injury and is thought to raise the risk of heart attacks and strokes.

However, the researchers admitted there remain some problems with their study. For example, the study was so small that it only looked at people with narrowed arteries who were already at risk for heart attacks and stroke. And the patients with the plastics had more heart disease, diabetes and high cholesterol than those without plastics. They were also more likely to be men or smokers. Both of those groups generally have higher rates of heart disease. The researchers also noted they may have missed some important elements that could change the results.

Philip Landrigan of Boston College, who wrote the research results in the *New English Journal of Medicine*, said it is the first study suggesting a

connection between microplastics or nanoplastics and disease in humans. “And it needs urgently to be either examined further or disproven by other studies done by other investigators in other populations,” he said.

Steve Nissen, a heart expert at the Cleveland Clinic in the state of Ohio who was not part of the study, also said that the study is a wake-up call. “Perhaps we need to take the problem of microplastics more seriously. As a cause for heart disease? Not proven. As a potential cause? Yes, maybe,” Nissen added.

[Adapted from <https://learningenglish.voanews.com/> (一部省略)]

【出典：Are Tiny Plastic Particles in Our Bodies Harmful?】

(注1) microscopic = 顕微鏡でしか見えないほど微細な

(注2) microplastics and nanoplastics = 直径5 mm以下のプラスチック粒子と直径がナノメートル単位のプラスチック粒子

(注3) buildup = 蓄積, 堆積

(注4) blood vessel = 血管

(注5) fatty = 脂肪質の

(注6) carotid artery = 頸動脈 《artery = 動脈》

(注7) plaque = 血管壁にみられる塊

(注8) inflammation = 炎症

(注9) diabetes and high cholesterol = 糖尿病と高コレステロール値

(注10) disprove = 論破する

(1) According to the passage, the researchers 1.

- ① compared the amount of plastic particles contained in various food products
- ② found that plastic particles collected in our bodies may cause disease
- ③ developed a food product made from recycled plastic
- ④ proved that microplastics cause heart disease

(2) According to the passage, patients who participated in the study all .

- ① had problems supplying oxygen and blood to their hearts
- ② had buildups of plastic particles in their arteries
- ③ were overweight men who smoked a lot
- ④ had substances removed from their blood vessels

(3) The passage does **not** say that .

- ① 30 patients with microplastic particles had heart attacks or strokes or died from other causes
- ② about 8 patients without microplastic particles died from heart disease or other causes
- ③ patients with microplastic particles who had heart disease commonly had inflammation
- ④ the rate of heart disease was lower among patients without microplastics

(4) The best title for this passage is “ ”.

- ① How Microplastics Build Up in Our Bodies
- ② Microplastic Materials Proven to Cause Strokes and Heart Attacks
- ③ Are Tiny Plastic Particles in Our Bodies Harmful?
- ④ Microplastics Linked to Lung and Blood Cancers

問題Ⅱ 次の英文を読んで、後に続く各問の答えとして最も適切なものを、それぞれの①～④の中から一つずつ選び、マークして答えなさい。

A group of scientists from the University of Kitakyushu in Japan has come up with an unusual solution to a messy problem. They've taken dirty ^(注1)diapers, and used them to replace some of the sand needed to build a house with concrete.

Concrete is one of the most common building materials in the world. It's used to construct many things, including roads, sidewalks, and buildings. Concrete is usually made by mixing together sand, water, and cement. But making concrete creates a lot of pollution, and it uses a lot of sand. Mining ^(注2)for sand creates other problems for the environment.

Siswanti Zuraida had an unusual idea. What if some of the sand in concrete could be replaced with used disposable ^(注3)diapers? Diapers are a huge source of pollution. In the US alone, over 8 billion pounds (3.6 billion kilograms) ^(注4)of them are thrown away each year. These end up taking up space in landfills. In other countries, dirty diapers can end up in rivers and creeks. ^(注5)One 2018 study in Indonesia showed that dirty diapers made up more than 20% of the trash pulled from rivers in 15 cities.

So Ms. Zuraida and her team set out to study the problem. They collected used diapers, cleaned them up, and treated the diapers with chemicals to get rid of any bad germs. ^(注6)Then the diapers were dried and shredded into small pieces that could be added to concrete. The researchers tested out their idea by making different mixes of concrete with various amounts of shredded ^(注7)diapers. They found that this new kind of concrete was just as safe and strong as regular concrete. It also didn't have any harmful germs in it.

Overall, the scientists say that diapers could replace some of the sand used in the concrete needed to build a house. In the parts of a house that support a lot of weight, 10% of the sand could be replaced with shredded diapers. In areas that don't have to support much weight, as much as 40% ^(注8)of the sand could be swapped out for diapers. The scientists didn't just test the strength of the concrete. They actually built a small concrete house to test their ideas in real life. The researchers think their idea could make it less expensive to build homes. After all, sand needs to be mined, which costs money. Used diapers are basically free, and there's no shortage of them.

Ms. Zuraida and her team are excited about their results, but they realize that there's still a lot of work to be done. If diapers are really going to be used in concrete, someone will have to figure out how to safely collect, clean, and store lots and lots of used diapers. The team is still trying to figure out how that might work. They are also studying how well diaper concrete is able to block out heat and sound. Perhaps the biggest challenge will be persuading people to use concrete made with diapers.

[Adapted from <https://newsforkids.net/> (一部省略)]

[出典：Building a House With...Diapers? Copyright 2023 by NewsForKids.net]

- (注1) diaper = オムツ
 (注2) mining = 採掘
 (注3) disposable = 使い捨ての
 (注4) landfill = 埋め立て地
 (注5) creek = 小川
 (注6) germ = 細菌
 (注7) shred = 細かく切る
 (注8) swap = 交換する

(1) Which of the following problems is the University of Kitakyushu expected to solve?

- ① Pollution caused by concrete production.
- ② Lack of cement for construction.
- ③ Overuse of water in concrete.
- ④ Noise pollution caused by mining.

(2) Which of the following is **not** mentioned as an example of something made using concrete?

- ① Sidewalks.
- ② Buildings.
- ③ Diapers.
- ④ Roads.

(3) What is Siswanti Zuraida's idea?

- ① To replace some of the sand in concrete with shredded diapers.
- ② To make diapers using sand.
- ③ To recycle diapers into paper products such as newspapers.
- ④ To treat diapers in landfills with chemicals.

(4) According to the passage, what is one concern of scientists regarding the use of diapers in concrete?

- ① The cost of hiring people to mine sand.
- ② The difficulty of removing the smell.
- ③ The challenge of collecting used diapers.
- ④ The shortage of water to make cement.

問題Ⅲ 次の(1)~(12)の文中の空所に入れるのに最も適切なものを、それぞれの①~④の中から一つずつ選び、マークして答えなさい。

(1) They decided to go swimming in the sea because it was a beautiful day.

- ① as ② so ③ such ④ very

(2) Somebody told me that only 60% of tsunamis are earthquakes.

- ① consisted of ② resulted from
③ made of ④ caused by

(3) We hope that by the time the game starts, it .

- ① will have stopped raining ② stops to rain
③ won't stop rain ④ would have been rain

(4) The meeting is scheduled to begin shortly 3 p.m.

- ① after ② against ③ toward ④ to

(5) can I improve my English quickly and effectively?

- ① Whether ② What ③ How ④ Who

(6) The teacher asked the student to attention during class.

- ① make ② pay ③ move ④ know

(7) George, that's the craziest thing that you have said!

- ① ever ② before ③ how ④ even

(8) She entered the building, her coat.

- ① wears ② wearing ③ wore ④ to wearing

(9) It's hard up for school on Monday morning.

- ① to get ② gotten ③ get on ④ got

(10) My friend avoided about his mistakes.

- ① talking ② to talk ③ talked ④ being talked

(11) Please me know when you are coming.

- ① watch ② show ③ tell ④ let

(12) She wrote an article was published in a famous newspaper.

- ① what ② that ③ who ④ whom

問題IV 次の(1)~(6)の日本語の意味を表すように、それぞれ下の①~⑦の語を並べかえて空所を補い英文を完成しなさい。ただし、語群では文頭に来るべき語(句)も小文字で示してある。解答は ~ に入るべきものをマークして答えなさい。

- (1) 多くの生徒は宿題をするのにインターネットをととても上手に利用している。

Many school _____ _____ _____ do their homework.

- ① use ② to ③ well ④ internet
⑤ very ⑥ children ⑦ the

- (2) あなたはたくさんの良い友達がいって恵まれている。

You _____ _____ _____.

- ① have ② many ③ lucky ④ good
⑤ are ⑥ to ⑦ friends

- (3) 私たちは、将来起こるかも知れない自然災害に備えるべきだ。

We should prepare _____ _____ _____ in the future.

- ① natural ② ourselves ③ which ④ for
⑤ disasters ⑥ happen ⑦ might

- (4) 市は花火大会を来週まで延期することに決めた。

The city _____ _____ _____ festival until next week.

- ① the ② has ③ put ④ fireworks
⑤ off ⑥ to ⑦ decided

- (5) オリンピックに参加することが彼らの大きな目標の一つである。

_____ _____ _____ their biggest goals.

- ① is ② participating ③ of
④ Olympics ⑤ one ⑥ the ⑦ in

- (6) 障がいのある人も暮らしやすい社会を築くべきである。

We should _____ _____ _____ live comfortably, too.

- ① where ② a ③ disabled ④ society
⑤ make ⑥ the ⑦ can

問題Ⅴ 次の(1)~(5)に与えられた定義に最も合う語句を、それぞれの①~④の中から一つずつ選び、マークして答えなさい。

(1) to make sure that a reservation, appointment, plan, or situation is okay

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① to declare ② to register ③ to inspect ④ to confirm

(2) a cup or statue-like object received for winning a contest

34

① a jewel ② a trophy ③ a crown ④ a medal

(3) being or looking completely the same

35

① parallel ② identical ③ even ④ distant

(4) water that spreads causing damage to an area that is usually dry

36

① a flood ② a tide ③ a sink ④ a waterfall

(5) bad, evil, painful, or not pleasant

37

① extreme ② tiring ③ nasty ④ boring

問題Ⅵ 次の英文を読んで、38 ~ 52 に入れるのに最も適切なものを、それぞれの①~④の中から一つずつ選び、マークして答えなさい。

※著作権の関係上、問題文は掲載しておりません。

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[Adapted from <https://learnenglish.britishcouncil.org/> (一部省略)]

(注1) queue = (人や車の) 待っている列

(注2) well-being = 幸福

(注3) contagious = 伝染性の

(注4) imaginative = 独創的な

(注5) interpersonal = 個人間の

(1)

- ① call ② offer ③ lend ④ spell

(2)

- ① kindness ② war ③ strangers ④ family

(3)

- ① profit-loss ② win-win ③ gain-loss ④ make-or-break

(4)

- ① submit ② apply ③ bring ④ mention

(5)

- ① in contrast ② by chance ③ by mistake ④ in addition

(6)

- ① over ② beyond ③ behind ④ beside

(7)

- ① thought ② taught ③ bought ④ allowed

(8)

- ① operate ② hit ③ become ④ register

(9)

- ① ties ② needs ③ ways ④ schools

(10)

- ① donating ② receiving ③ requesting ④ making

(11)

- ① environmental ② organizational
③ natural ④ general

(12)

- ① enjoy ② complain ③ act ④ yawn

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(13)

- ① attention ② action ③ pictures ④ rumors

(14)

- ① tiring ② typical ③ total ④ tasty

(15)

- ① phase ② possession ③ sign ④ turn