

試 験 問 題

英 語

注 意

1. 試験開始の合図があるまで、この問題冊子を開いてはいけません。
2. 試験開始の合図があったら、1 ページから 6 ページまで順序正しくそろっているかどうかを確かめなさい。不備の場合は着席のまま手をあげなさい。
3. 解答はすべて**解答用紙**に記入しなさい。
4. 試験時間は **45 分間**です。
5. この問題冊子は持ち帰りなさい。

解答用紙記入上の注意

1. 解答用紙の所定欄に受験番号と氏名を書き、マークしなさい。
2. 解答は黒鉛筆(HB)を使用して、下の良い例にならってマークしなさい。

マーク例	
良い例	悪い例
	   

3. 各解答欄に 2 つ以上マークした場合は無効です。
4. 解答を訂正する場合は、プラスチック消しゴムで完全に消し、消しきずが紙面に残らないようにしなさい。
5. 解答用紙を汚したり、折り曲げたりしてはいけません。

問題【Ⅰ】～【Ⅴ】の解答番号 1 ～ 30 にあてはまるものとして最も適切な選択肢を選びなさい。

【Ⅰ】 次の英文を読み、その内容にもとづいて設問に答えなさい。

Nano- and microplastics (NMPs), which can be as small as one thousandth of a millimeter in diameter or as large as five millimeters, seem to be everywhere — in the water, soil, and air. While many creative strategies have been attempted to get rid of these plastic bits, one unexpectedly effective solution for cleaning up drinking water, specifically, might be as simple as making a cup of tea or coffee. Boiling and filtering calcium-containing tap water could help remove nearly 90% of the NMPs present.

Contamination* of water supplies with NMPs has become increasingly common. The effects of these particles on human health are still under investigation. Some advanced drinking water filter systems capture NMPs, but simple, inexpensive methods are needed to significantly help reduce human plastic intake*. So, researchers wanted to see whether boiling could be an effective method to help remove NMPs from both hard and soft tap water.

The researchers collected samples of hard tap water, and added different amounts of NMPs to them. Samples were boiled for five minutes and allowed to cool. Then, the team measured the free-floating plastic content. Boiling hard water, which is rich in minerals, will naturally form a substance known as calcium carbonate (CaCO_3). Results from these experiments indicated that as the water temperature increased, CaCO_3 formed crystalline* structures, which encapsulated* the plastic particles. One of the researchers says that over time, these structures would build up, and then they could be filtered out to remove the NMPs. He suggests any remaining CaCO_3 floating in the water could be removed by pouring it through a simple filter.

In the tests, the encapsulating effect was greater in harder water — in a sample containing 300 milligrams of CaCO_3 per liter of water, up to 90% of free-floating NMPs were removed after boiling. However, even in soft water samples (less than 60 milligrams CaCO_3 per liter), boiling still removed around 25% of NMPs. The researchers say that this work could provide a simple, yet effective, method to reduce NMP intake.

出典：“Want fewer microplastics in your tap water? Try boiling it first,” ACS PresPacs, February 28, 2024 (<https://www.acs.org/pressroom/presspacs/2024/february/want-fewer-microplastics-in-your-tap-water.html>) を一部改変

(注) contamination 汚染 intake 摂取量 crystalline 結晶の
encapsulate ～を包み込む

1. What was used in the experiment to simulate NMP contamination in tap water? 1

- ① Bottled mineral water
- ② Tap water with NMPs added
- ③ Water collected from a polluted river
- ④ Rainwater stored in plastic containers

2. What is true about NMPs? 2

- ① They exist in various sizes.
- ② They are usually formed in contaminated water.
- ③ They cannot be removed by any type of filter system.
- ④ Their effect on human health is already clear.

3. What effect does CaCO_3 have in removing free-floating NMPs? 3

- ① It breaks down plastic particles.
- ② It prevents microplastics from forming.
- ③ It confines plastic particles.
- ④ It turns plastic into harmless substances.

4. What is correct about the results of the experiment? 4

- ① Over 90% of the NMPs were removed.
- ② When boiled, more NMPs were removed from soft water than hard water.
- ③ Plastic particles melted when boiled.
- ④ Boiling both types of water removed some NMPs.

5. Which of the following best describes the main goal of the study? 5

- ① To prove that plastic pollution does not affect human health
- ② To develop an eco-friendly water filtration system
- ③ To test a simple way to reduce human plastic intake from tap water
- ④ To promote the use of bottled water instead of tap water

- 【Ⅱ】 次の英文を読み, ～ に入る意味的に最も適切な語をそれぞれ下の①～⑤のうちから1つ選びなさい。ただし, 同じ語は2回以上使わないこと。

大問【Ⅱ】については著作権の都合上掲載できません。

- 【Ⅲ】 次の1～5の英文において, ～ に入れるのに文法・語法・意味上, 最も適切な語をそれぞれ下の①～⑤のうちから1つ選びなさい。ただし, 同じ語は2回以上使わないこと。

1. When you can't hear someone, we often say, " me."
2. After the big argument with my girlfriend, she said, "I .
3. After I stepped on his toe, I said that I was .
4. My mother often tells me to and forget, but it is not always easy to do.
5. He was late to work and had no , so his boss was very angry.

- ① apologize ② excuse ③ forgive ④ pardon ⑤ sorry

【Ⅳ】 次の 1～5 の文において、それぞれ下の①～⑥の語を並べかえて日本文と同じ意味の英文を完成させたとき、16 ～ 25 に入る最も適切な語を答えなさい。

1. 日本の技術者が血中の酸素濃度を測定する簡易な装置を発明した。

A Japanese engineer invented a simple 16 17 in the blood.

- ① concentration ② device ③ measure ④ oxygen ⑤ the
⑥ to

2. この博物館は、5 歳未満の人は入場無料です。

Admission to this museum 18 19 years of age.

- ① five ② for ③ free ④ is ⑤ those
⑥ under

3. 現在の状況を改善するために努力させてください。

Please let 20 21 situation better.

- ① current ② make ③ me ④ the ⑤ to
⑥ try

4. コンサート会場まで地下鉄に乗れば、雨を避けて濡れずに行かれます。

You can avoid the rain and 22 23 to the concert hall.

- ① by ② dry ③ stay ④ subway ⑤ taking
⑥ the

5. 地球温暖化についてどう思いますか？

What 24 25 ?

- ① are ② global ③ on ④ thoughts ⑤ warming
⑥ your

【V】 次の1～5の会話において、26 ～ 30 に入る最も適切な表現を、それぞれ下の①～④のうちから1つ選びなさい。

1. Teacher: You look so happy. What happened?

Student: I got into my first choice of university.

Teacher: That's great news, indeed! Congratulations!

Student: Thank you so much. 26

- ① I knew I would get in.
- ② I have no idea what I'm going to do now.
- ③ I hope to get a part-time job soon.
- ④ I was so worried.

Teacher: I don't know why. You've studied so hard these past three years.

Student: And you helped me learn so much, too. I'll be forever grateful.

2. Telsa: Raul, are you busy next week?

Raul: Not really, why?

Telsa: Candice and I want to throw a surprise birthday party for James. Can you help?

Raul: Sure! It sounds like it'll be fun.

Telsa: We're thinking of having it at his apartment. 27

- ① What do you think?
- ② How do you think?
- ③ When is a good time?
- ④ What is a good time for you?

Raul: Sounds good to me. I'm sure he'll be surprised.

3. Michiko: Patrick, which looks better on me? The blue dress or the red one?

Patrick: Hmm...that's a tough question. They both look great on you.

Michiko: Yeah, but which one do you think matches me better?

Patrick: You shouldn't worry about what others think. Which is more comfortable?

Michiko: 28

- ① The blue one is too fancy, so I prefer the red one.
- ② The red one is more expensive and I can't afford it.
- ③ The red one is tight on me, so I prefer the blue one.
- ④ The blue one is a little too short, so I prefer the red one.

Patrick: Comfort is important, so I would go with that one, too.

Michiko: Thanks, I agree. I'll get it.

4. Waiter: Welcome to our restaurant.

Customer: I'm really hungry. What do you recommend?

Waiter: Today's special is spaghetti with meat sauce.

Customer: I see. 29

- ① When will it be ready?
- ② What comes with it?
- ③ What comes with them?
- ④ How much is it?

Waiter: You have a choice of soup or salad and garlic bread.

Customer: Sounds good to me. I'll have it with a salad.

5. Worker A: I'm so tired of this project and can't wait until it's finished.

Worker B: Same here. The good news is we're almost done with it.

Worker A: 30 have you heard the news about our summer holiday?

- ① Speaking of what,
- ② Speaking of when,
- ③ Speaking of how,
- ④ Speaking of which,

Worker B: No, what did the boss say?

Worker A: She said we can have an extra three days off this summer.

Worker B: Great! I'm so tired. I really need the extra time off.