

外国語（英語）（100点 60分）

注意事項

1. この問題冊子は全部で10ページである。落丁、乱丁、印刷不鮮明の箇所などがあった場合には申し出ること。
2. 解答には黒鉛筆を用い、ボールペン、色鉛筆、万年筆などを使用してはならない。
3. 解答用紙はマーク式解答用紙1枚である。
4. 解答用紙の指定欄に座席番号（数字）、氏名を記入し、さらに座席番号をマークすること。
5. 誤ってマークした場合は、消しゴムで完全に消してからマークしなおすこと。
6. 一つの解答欄に二つ以上マークした場合、その解答欄の解答は無効となる。
7. マーク式解答用紙は、折り曲げたり、破ったり、汚したりしないこと。
8. この問題冊子の余白は自由に利用してよい。
9. 試験終了後、この問題冊子は持ち帰ること。

解答上の注意

問題の各問いには解答番号が表示されている。解答は対応する解答番号の解答欄に、それぞれ1箇所マークすること。

例えば、

 と表示されている問いに対して ⑤ と解答する場合は、次の（例）のように、解答番号60の解答欄の⑤のマーク位置に解答用紙のマーク例に従ってマークすること。

（例）

60	①	②	③	④	●	⑥	⑦	⑧	⑨	⑩
----	---	---	---	---	---	---	---	---	---	---

1 次の英文の空所 1 ~ 10 に入る最も適当なものを、①~④からそれぞれ一つずつ選び、解答欄にマークしなさい。

1. Our manager is going to take a paid holiday next Monday, 1 she won't be able to attend the workshop.

- ① as if ② until ③ so ④ before

2. Temperatures fell by about 2° C in northern Europe in the 16th and 17th centuries, creating what 2 as the little ice age.

- ① know ② was knowing ③ is known ④ knew

3. Before starting a vegetable garden, I had my children 3 up some sites online.

- ① look ② looked ③ to looking ④ to be looked

4. We have to use the stairs because the elevator is out of 4 .

- ① work ② office ③ accord ④ order

5. What have I done 5 like this?

- ① treat ② to treat ③ treated ④ to be treated

6. The teleworking rate among full-time employees in Japan was 28.5% as 6 February 2022.

- ① on ② of ③ and ④ at

7. By the end of the century, air conditioning could increase the UK's power consumption by up to an 7 15% during the summer.

- ① estimate ② estimating ③ estimated ④ estimation

8. If only he told us the truth in the first place, things wouldn't have gone so wrong.

- ① has ② had ③ will have ④ have

9. I owe I am now to all of you.

- ① which ② that ③ what ④ whose

10. In 2022, the official height of Mt. Everest was revised to 8848.86 meters, ever recorded.

- ① high ② highs ③ higher ④ the highest
-

II 次の各日本文の意味を表すように、() 内の語句を並べかえて空所を補う時、
11 ~ 20 に入る最も適当なものを ①~⑤ からそれぞれ一つずつ選
び、解答欄にマークしなさい。

1. 他の乗客の皆さまのご迷惑にならないよう、携帯電話のご使用はお控えくださ
い。

You should ___ using 11 so ___ 12 to ___ other passengers.
(① disturb ② not ③ avoid ④ as ⑤ cellphones)

2. グリーンさんが昨日の会議で行ったプレゼンはとてもためになった。

The ___ 13 ___ at the meeting yesterday 14 ___ beneficial.
(① was ② Mr. Green ③ presentation ④ very ⑤ gave)

3. この赤いネクタイはきっとあなたの青いシャツによく似合いますよ。

I am sure ___ 15 ___ goes 16 ___ your blue shirt.
(① red ② this ③ with ④ tie ⑤ well)

4. われわれがゴルフを始めて10年になります。

It is 17 ___ ___ 18 ___ golf.
(① took ② since ③ ten years ④ up ⑤ we)

5. 誰の助けも借りずにこの課題を明日までに終えるのは無理だと思う。

I ___ 19 ___ 20 ___ this assignment by tomorrow without
any help.
(① possible ② think ③ to finish ④ it ⑤ don't)

Ⅲ 次の会話文を読み、空所 ～ に入る最も適当なものを、①～⑤からそれぞれ一つずつ選び、解答欄にマークしなさい。

A: Hi, Paul. What's up? Hey, did you get your tickets to go back to the UK yet?

B: Hi, Lucy. No. Not yet. The prices seem to have nearly doubled compared to the last time I looked.

A: Ah, yes. I heard that there was going to be a price increase from this month. That's why I got mine from that same website a couple of weeks ago. The tickets were still pretty expensive, though.

B: I really want to go to my sister's wedding in September this year.

A: Have you tried looking at the prices of other airlines? If you're OK with that, you might find a good deal.

B: That's a good idea. Have you ever used a cheaper airline?

A: Yes. When I went to the US last year, I went with YasuJet. The food was pretty bad and I was only permitted to take one suitcase.

B: That's the most important thing, I guess. Well, I'd better get home and start checking. Otherwise, those cheaper airline tickets will be sold out!

A: Good idea. I'm sure you'll find something. Good luck!

- ① You might not get a direct flight.
- ② I got there safely and on time, though.
- ③ I don't know what to do.
- ④ Actually, I checked the J-Jet website this morning.
- ⑤ I'll have a check online when I get home.

- IV** 次の英文を読み、各設問の答えとして最も適当なものを、①～④からそれぞれ一つずつ選び、解答欄にマークしなさい。

In recent years, researchers from many different areas of study have been examining the effectiveness of positive thinking. According to some studies, just thinking in a positive way can help to relieve stress. Rather than thinking of the negative things that may happen or have already happened in your day, thinking of the good things that may happen or have happened will not only raise your mood, but may also have health benefits. Other more radical studies have looked at the benefits of laughter yoga. Laughter yoga was first developed by an Indian physician. Although methods vary, the basic technique is as follows: First, you should breathe in deeply. Then, when you breathe out, you should try to laugh out loud. Simple, isn't it? Some research has shown that laughter yoga, practiced for just 10 minutes per day, can help to make people of all ages feel more energized, as the activities increase the amount of oxygen to your brain. What is perhaps the most interesting thing is that the laughter doesn't have to be genuine. The next time you are feeling low, why not try thinking positively, or even laughing out loud to see if your mood can change?

1. What does the article say about positive thinking?

26

- ① It becomes more difficult as people become older.
- ② If you have a stressful job, it is hard to do.
- ③ You should do it just once per day.
- ④ It can help to reduce stress levels.

2. What does the article say about ways to improve one's health?

27

- ① It is important to eat healthy food.
- ② You don't need to study about the benefits of a healthy lifestyle.
- ③ Copying people's eating habits in India can help.
- ④ Thinking about good things that happen in your day can be effective.

3. What does the article say about how to do laughter yoga? 28

- ① It should be done in the morning, if possible.
- ② You should laugh as loudly as you can while holding your breath.
- ③ You should laugh out loud at the same time as you breathe out.
- ④ You should contact your physician before trying to do it.

4. What is said about the most appropriate age for people to be able to benefit from laughter yoga? 29

- ① Anyone can benefit from laughter yoga.
- ② The older, the better.
- ③ Anybody over the age of 10 can benefit.
- ④ People over the age of 60 are at the best age to benefit from this exercise.

5. What does the article say is an interesting fact about laughter yoga? 30

- ① The laughter does not need to be real.
 - ② It doesn't work if you are in a bad mood.
 - ③ It isn't very popular outside of India.
 - ④ It should not be used in conjunction with positive thinking.
-

□ V 次の英文を読んで、設問に答えなさい。

A way of covering a robotic finger with living human cells has been developed by Japanese scientists. Researchers at the University of Tokyo were able to give the artificial digit skin-like texture, as well as making it water-repellent and self-healing. The new breakthrough is more than a little reminiscent of the T-800 Terminator played by Arnold Schwarzenegger in the sci-fi film franchise, whose fictional hunter-killer robot featured “living tissue over a metal endoskeleton” that helped it infiltrate groups of human resistance fighters battling the evil Skynet AI. Professor Shoji Takeuchi, □ 31 □, said: “The finger looks slightly ‘sweaty’ straight out of the culture medium. Since the finger is driven by an electric motor, it is also interesting to hear the clicking sounds of the motor in harmony with a finger that looks just like a real one.”

Looking “real” like a human is one of the top priorities for humanoid robots that are often tasked to interact with humans in healthcare and service industries. Prof. Takeuchi said a human-like appearance can improve communication efficiency and evoke likeability. While current silicone skin made for robots can mimic human appearance, he explained that it (32) “falls short” when it comes to delicate textures such as wrinkles and lacks skin-specific functions. Previous attempts at fabricating living skin sheets to cover robots have also had limited success, since it is challenging to conform them to dynamic objects with uneven surfaces. Prof. Takeuchi said: “With that method, you have to have the hands of a skilled artisan □ 33 □. To efficiently cover surfaces with skin cells, we established a tissue moulding method to directly mould skin tissue around the robot, which resulted in a seamless skin coverage on a robotic finger.”

To craft the skin, the Tokyo team first submerged the robotic finger in a cylinder filled with a solution of collagen and human dermal fibroblasts, the two main components □ 34 □. Prof. Takeuchi says the study’s success lay in the natural tendencies of the collagen and fibroblast mixture, which shrank and

tightly conformed to the finger. Just like paint primers, the layer provided a uniform foundation for the next coat of cells - human epidermal keratinocytes - to stick to. The cells make up 90 per cent of the outermost layer of skin, giving the robot a skin-like texture and moisture-retaining barrier properties. Prof. Takeuchi said: “The crafted skin had enough 35 to bear the dynamic movements as the robotic finger curled and stretched. The outermost layer was thick enough to be lifted with tweezers and repelled water, 36 in performing specific tasks like handling electrostatically charged tiny polystyrene foam, a material often used in packaging.” When wounded, he said the crafted skin could even self-heal just like humans’ with the help of a collagen bandage, which gradually morphed into the skin and withstood repeated joint movements. Prof. Takeuchi said: “We are surprised by how well the skin tissue conforms to the robot’s surface. But this work is just the first step toward creating robots covered with living skin. The developed skin is much weaker than natural skin and can’t survive long without constant nutrient supply and waste removal.”

注

digit 指

water-repellent 撥水性がある

reminiscent ～を思い出させる

endoskeleton 内骨格

infiltrate 潜入する

culture medium 培養基

mould 輪郭（形）にぴったり合わせる

submerge 沈める

human dermal fibroblast ヒト皮膚線維芽細胞

paint primer 下塗り用のペンキ

human epidermal keratinocyte ヒト表皮角化細胞

tweezers ピンセット

electrostatically charged 静電気を帯びた

polystyrene foam 発泡ポリスチレン

self-heal 自己修復する (ここでは動詞として用いられている)

morph 変わる

1. 空所 , , , に入る最も適当なものを ①～④ からそれぞれ一つずつ選びなさい。

, , ,

- ① that make up the skin's connective tissues
- ② who can cut and tailor the skin sheets
- ③ who has authored a study on the new technique
- ④ which provides various advantages

2. 下線部 (32) の意味に最も近いものを ①～④ から選びなさい。

- ① is difficult to refuse
- ② works smoothly
- ③ is insufficient
- ④ continues to change

3. 空所 に入る最も適当なものを ①～④ から一つ選びなさい。

- ① length and hardness
- ② speed and stability
- ③ fluency and transparency
- ④ strength and elasticity

4. 以下の各文が本文の内容と一致していれば解答欄の①を、一致していなければ②をマークしなさい。

37

~

40

37

The robotic finger featured in this article was named after the character in the movie.

38

For humanoid robots looking after humans, it is important to look like them.

39

The robotic fingers covered with living skin are not suitable for using electrical appliances.

40

Before the breakthrough reported in this article, no one had ever thought of covering a robot with artificial materials.

(問題終わり)