

# 外国語

「英語コミュニケーションⅠ，英語コミュニケーションⅡ，  
英語コミュニケーションⅢ，論理・表現Ⅰ，  
論理・表現Ⅱ，論理・表現Ⅲ」

英語コミュニケーションⅠ, 英語コミュニケーションⅡ,  
英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

[ 1 ]

次の英文を読んで、～にあてはまるもっとも適切なものを、下の①～④から一つずつ選び、解答用紙～にマークしなさい。\*の付いている語句は注を参照しなさい。

Science fiction stories have long imagined a world populated with robots. In *The Jetsons*, a family cartoon from the 1960s, Rosie the Robot was a helpful, middle-aged servant. The Jetson family loved her so much that they could never replace her with a newer model. In darker stories, robots are heartless machines of cold efficiency. In the film *Minority Report* (2002), spider-like robots surround an apartment building, carefully looking for a criminal wanted by the police. A mother calmly tells her terrified child that the robots are not looking for her. The scene, both heartwarming and frightening, makes us wonder if robots will be our enemies or our friends.

Dr. David Hanson, a robot designer, thinks robots can be our friends, maybe even our best friends, but not if they look and act like spiders. To make robots more acceptable to humans, he's working on a long-term project to develop reasonably priced "robots with character." He wants robots that empathize with you — that is, robots that understand you and build a relationship. To do this, robots must be able to see your face, differentiate you from others, and understand your moods. Furthermore, these friendly robots must be able to make appropriate facial expressions. They must look similar to humans.

Several of Hanson's robots are incredibly realistic. His Albert HUBO robot consists of a head, which he developed, and a walking robot body made at the Korea Advanced Institute of Science and Technology. The head looks just like that of the famous physicist Albert Einstein and has amazingly realistic facial expressions. But more importantly, it makes these expressions in response to the behavior of the people around it. In a demonstration at the Technology, Entertainment, Design (TED) conference in Long Beach, California, in 2009, Hanson's robot smiled and frowned in response to Hanson's facial expressions.

Getting robots to smile back at a human smile took some doing. Says Hanson, "I developed a series of technologies that allowed robots to make more realistic facial expressions than previously achieved." Human facial expressions are powered by several dozen muscles. To copy, or mimic, the action of these muscles, Hanson's robot faces contain 28 tiny motors covered by a sponge-like material he developed, called Frubber. When attached to the motors, Frubber moves and acts like human skin.

The robots also need to recognize facial expressions quickly. At the Machine Perception Laboratory at the University of California San Diego, researchers are developing technology that can detect and follow human faces. Working with that group, Hanson developed the Character Engine, software that allows the machine to recognize where people are looking, track head positions, and mimic or learn facial expressions.

英語コミュニケーションⅠ, 英語コミュニケーションⅡ,  
英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

And of course, the robots must be able to speak and give relevant responses. Sometimes Hanson's robots give answers that seem memorized. The question "Do you think?" triggers a funny answer that reminds us that much of what humans say is predictable and does not require much thinking. Obviously, that is the programmer teasing us. But as the robot learns more about us, it uses that knowledge and information from the Internet to come up with new things to say.

By combining programming genius with movie-inspired \*animatronics, Hanson has launched an ambitious effort to make robots seem like us. Even more extreme is Professor Hiroshi Ishiguro's work at Osaka University in Japan. His animatronic Geminoid robots are so realistic that many people feel uncomfortable around them. Other scientists prefer a less realistic approach. At the Center for Robotics and Intelligent Machines at the Georgia Institute of Technology, researchers are making robots with cute, childlike faces and humanlike movements, but the machines are obviously robots. Hanson has favored this approach in designing Zeno, a smaller doll-like robot suitable as a companion for children.

Are friendly robots dangerous? Sherry Turkle, a psychologist at the Massachusetts Institute of Technology, thinks so. In her book, *Alone Together: Why We Expect More from Technology and Less from Each Other* (2011), she warns that robots may disappoint us and leave us lonelier if they take our attention away from human friends. Turkle's concerns may seem exaggerated. The same complaint, after all, could be made about books or television. But before dismissing her, are you sure you will be able to resist those big, cute robot eyes listening to every word you say? In the end, we may be better served by scary spiders than a lovable Rosie.

Adapted from *Inside Reading 4*, Oxford University Press

[Notes]

\*animatronics = the art of making robots that look like real people or animals, used in films and entertainment

(1) What does the author suggest by comparing *The Jetsons* and *Minority Report*? 1

- ① That robots have always looked scary in science fiction films and TV shows
- ② That science fiction films and TV shows are almost always about loving families
- ③ That robots can be seen as helpful or frightening, depending on the film or TV show
- ④ That robot designs in older TV shows are more realistic than in twenty-first-century films

(2) What is the main idea of paragraph 2? 2

- ① Dr. Hanson is creating robots that are movie characters.
- ② Dr. Hanson thinks robots shouldn't look and act like insects.
- ③ Dr. Hanson wants robots to connect with people in humanlike ways.
- ④ Dr. Hanson's robots should be able to appropriately follow human commands.

英語コミュニケーションⅠ, 英語コミュニケーションⅡ,  
英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

(3) The expression took some doing in paragraph 4 is closest in meaning to .

- ① caused problems for other robot systems
- ② required special skill and effort to achieve
- ③ happened naturally without much planning
- ④ was somewhat easier to program than expected

(4) What is the Character Engine designed to do?

- ① To store information about human facial expressions
- ② To help the robot follow and respond to human faces
- ③ To control the robot's decision-making during conversations
- ④ To coordinate speech with motor movements in the robot's body

(5) Why do Hanson's robots sometimes give memorized answers?

- ① They are unable to connect to other systems for help.
- ② They have been programmed only with short-term replies.
- ③ They are still in the process of collecting and using new information.
- ④ They rely on the processing of facial expressions instead of spoken language.

(6) What does the author show by describing robots like Geminoid and Zeno?

- ① That Japanese robots are better than American robots
- ② That Geminoid robots are the only type used in schools
- ③ That people disagree about how realistic robots should look
- ④ That robots should always look cute and childlike to be accepted

(7) What is Sherry Turkle's main concern about friendly robots?

- ① They might take away the words people say.
- ② They might become disappointed and lonelier.
- ③ They might cause people to make more complaints.
- ④ They might take away our ability to build real friendships.

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[ 2 ]

次の [ 8 ] ~ [ 18 ] にあてはまるもっとも適切なものを, 下の語群から一つずつ選び, 解答用紙 [ 8 ] ~ [ 18 ] にマークしなさい。ただし, 同じものは二度以上使えません。文頭に来る語も小文字にしてあります。

(1)

問題文に関する著作権の都合上, 非公開となります

(2)

Most people love the taste of chocolate. Some enjoy the sweet milk [ 14 ], and others prefer it strong and dark. But most chocolate lovers agree — there is no other food like it. It has a wonderful, rich taste which stays in your [ 15 ]. Did you know that chocolate has more than 300 different flavors in it? It is no [ 16 ] that chocolate is now more and more popular all around the world. But what is chocolate, and where did it first come from? Chocolate is made from the beans of cacao plants. Cacao first grew in the rainforest [ 17 ] of Central and South America, and people began to use the beans a very long time ago. The tree has large fruits called pods, and these hold the beans inside. The scientific [ 18 ] for the cacao tree, *Theobroma cacao*, tells us about the wonderful food that comes from it. *Theobroma* means “food of the gods.”

- ① mouth                      ② name                      ③ region                      ④ room  
⑤ version                      ⑥ wonder

Adapted from *Chocolate*, Oxford University Press

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英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

[ 3 ]

次の  ～  にあてはまるもっとも適切なものを, 下の①～④または①～⑤から一つずつ選び, 解答用紙  ～  にマークしなさい。

(1)

A: Can we get together to study for the test at two o'clock? Or is three better for you?

B: Actually, I'll be in club activities until four thirty.

A:

B: OK. I'll bring some cold drinks and snacks. See you shortly.

- ① Fine. We should do this again next week.
- ② Sure. Let's finish the science project tomorrow.
- ③ Let's meet then. I'll wait for you in our classroom.
- ④ No problem. I'll be taking the math test next Wednesday.

(2)

A: Let's see. To go from Tokyo to Kathmandu, you'll have to change planes in Bangkok.

B: Isn't there a direct flight? I need to get there as soon as possible.

A: No, but you could change planes in Hong Kong instead. In fact, that would put you in Nepal one hour earlier.

B:

A: Yes, there's one at ten in the morning.

- ① Good. What time does that flight arrive?
- ② Fine. Can you get me on a flight tomorrow?
- ③ Excellent. How many flights do I have to take?
- ④ Great. Can I leave after work tomorrow evening?

英語コミュニケーションⅠ, 英語コミュニケーションⅡ,  
英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

(3)

A:

B: Certainly, sir. A staff member will bring them right away.

A: I'd like some more soap, too.

B: How many bottles would you like?

- ① Will you kindly send an ironing board to Room 603?
- ② Could you please bring two extra towels to Room 603?
- ③ Can you have someone bring my dry cleaning to Room 603?
- ④ May I request that some ice be sent as soon as possible to Room 603?

(4)

A: The posters arrived from the printers this morning. By the way, how many copies did you order?

B: Thirty.

A:

B: It's OK. We can use them in art class.

- ① Oh, great. That's perfect.
- ② Oh, no. That's not going to be enough.
- ③ Oh dear. That's twice as many as I need.
- ④ Oh, well. I guess I can order some more today.

英語コミュニケーションⅠ, 英語コミュニケーションⅡ,  
英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

(5)

A: Look at all this rain! I'm really getting tired of it.

B: You won't be pleased to hear that even more rain is predicted for tomorrow.

A:

B: Well, you can always go to the movies with me.

A:

B: That's a shame. You ought to change your mind.

A: I'll think about it and let you know. What's playing?

- ① I'm looking forward to it. It's unusual for this time of year.
- ② Will it be rainy next week, too? I'm going on a two-day hike!
- ③ Really? Then I'll have to cancel my tennis plans in the morning.
- ④ This weather makes me so irritated. I wouldn't be good company.
- ⑤ Why don't we go to the movies? There's a new comedy I've been dying to see.

(6)

A: Are you going to Hokkaido or Niigata this winter?

B: Neither. I want to spend my vacation some place warm. I was thinking about Okinawa.

A:

B: Yes, but that's too far to go for just one week, don't you think?

A: Is that all you get?

B: Well, we can't all be as lucky as you.

A: You really need to talk to your boss about more time off.

- ① Wow! I get three weeks' vacation at my job.
- ② Wow! I get four days off for my winter break.
- ③ I went to South Korea for a month last year. It was freezing!
- ④ What about Hawaii? It's always warm there, even in the winter.
- ⑤ I recommend going to Nagano. Luckily, it's just two hours away by rapid train.

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英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

[ 4 ]

次の [ 27 ] ~ [ 36 ] にあてはまるもっとも適切なものを, 下の①~④から一つずつ選び, 解答用紙 [ 27 ] ~ [ 36 ] にマークしなさい。

- (1) The teacher gave us [ 27 ] advice about how to write our final reports.  
① help                      ② helpful                      ③ helpfully                      ④ helps
- (2) By the time the lecture [ 28 ], almost all of the students had already left the classroom.  
① began                      ② begins                      ③ had begun                      ④ has begun
- (3) An important discovery [ 29 ] by the research team at the university yesterday.  
① announced                      ② announces                      ③ has announced                      ④ was announced
- (4) [ 30 ] the heavy rain, the campus festival was able to proceed as scheduled last Saturday.  
① Although                      ② Because                      ③ Despite                      ④ Whenever
- (5) The students [ 31 ] at the entrance at 9:00 a.m. sharp every Monday.  
① achieved                      ② approached                      ③ arrived                      ④ reached
- (6) The professor [ 32 ] corrected all the calculation errors in the thesis last weekend.  
① him                      ② himself                      ③ his                      ④ oneself
- (7) The lecture hall, [ 33 ] was built in 1975, now needs major renovation and new equipment.  
① what                      ② when                      ③ where                      ④ which
- (8) The new computer program performs [ 34 ] than the traditional method, especially with large data sets.  
① efficient                      ② more efficient                      ③ more efficiently                      ④ most efficiently
- (9) This is [ 35 ] accurate measurement device in our laboratory and is used for all experiments.  
① most                      ② much                      ③ the more                      ④ the most
- (10) It was his advisor [ 36 ] suggested the new approach that led to success.  
① who                      ② whom                      ③ who's                      ④ whose

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英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

[ 5 ]

次の (1) ~ (5) の意味を英語で表現するように①~⑥の語句を並べかえ, 最初から 2 番目と 4 番目の語句をそれぞれ一つずつ選び, 解答用紙  ~  にマークしなさい。ただし, 文頭に来る語も小文字にしてあります。

(1) 世界の出来事を新聞はたえず知らせてくれます。

(            ) (  ) (            ) (  ) (            ) (            ) all over the world.

① keep

② informed

③ newspapers

④ of the events

⑤ taking place

⑥ us

(2) 現代は気候危機の時代と言っても過言ではありません。

(            ) (  ) (            ) (  ) (            ) (            ) climate crisis.

① it is

② not

③ the age of

④ this is

⑤ to say that

⑥ too much

(3) 初秋のころほどその山が美しく見える時はありません。

(            ) (  ) (            ) (  ) (            ) (            ) beautiful as in the early autumn.

① at

② does

③ mountain look

④ no time

⑤ so

⑥ the

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英語コミュニケーションⅢ, 論理・表現Ⅰ, 論理・表現Ⅱ, 論理・表現Ⅲ

(4) 今世紀の終わりまでにバイオテクノロジーがどこまで進歩しているか見当もつきません。

(            ) (  ) (            ) (  ) (            ) (            ) by the end of this century.

- |                       |              |         |
|-----------------------|--------------|---------|
| ① biotechnology       | ② how far    | ③ is    |
| ④ may have progressed | ⑤ no telling | ⑥ there |

(5) 私たちは人型ロボットに関する新しい研究を促進するために、この研究所を設立しました。

We (            ) (  ) (            ) (  ) (            ) (            ) new research on humanoid robots.

- |                  |                    |             |
|------------------|--------------------|-------------|
| ① a view         | ② have established | ③ promoting |
| ④ this institute | ⑤ to               | ⑥ with      |