

# 英 語 問 題

## 注意事項

はじめに、これを読みなさい。

1. この問題用紙は 15 ページあります。ただし、ページ番号のない白紙はページ数に含みません。
2. 解答用紙に印刷されている受験番号が正しいかどうか、受験票と照合して確認しなさい。
3. 監督者の指示にしたがい、解答用紙の氏名欄に氏名を記入しなさい。
4. 解答は全て解答用紙の所定欄に記入またはマークしなさい。解答欄は裏にもあります。
5. 1 問につき 2 つ以上マークしないこと。2 つ以上マークした場合には、その解答は無効になります。
6. 解答は必ず鉛筆またはシャープペンシル(いずれも HB・黒)で記入しなさい。
7. 訂正する場合は、消しゴムできれいに消し、消しくずを残さないこと。
8. 解答用紙は、絶対に汚したり折り曲げたりしないこと。
9. 解答用紙は持ち帰らず、必ず提出しなさい。
10. 問題用紙は必ず持ち帰ること。
11. 試験時間は 70 分です。
12. マークシート記入例

良い例	悪い例
	

[ I ] 次の英文を読んで設問に答えなさい。

Risks are all around us. A nearby sneeze may raise your risk of catching the flu. Being overweight boosts the odds you'll get diabetes.\* Smoking increases your risk for many kinds of cancer. And if you pay attention to news headlines, you may worry that you're at risk of food poisoning, Zika infection,\* shark attacks, and more. How can you know which health risks apply to you?

Health risks can sometimes be confusing, but they're important to understand. Knowing the risks you and your family face can help you find ways to avoid health problems. It can also keep you from worrying over unlikely threats. Using the advice of your doctor and knowing the risks and benefits of a medical treatment can help you make informed decisions.

"Understanding health risks is key to making your own health care decisions," says Dr. William Elwood, a psychologist and behavioral scientist at the National Institute of Health (NIH). "It gives you perspective on potential harms and benefits so you can make smart choices based on facts and not fears."

[ ア ] A health risk is the chance<sup>(A)</sup> that something will harm or otherwise affect your health. Risk doesn't mean that something bad will definitely happen. It's just a possibility. Several characteristics, called risk factors, affect whether your health risks are high or low.

Your personal health risk factors include your age, sex, family health history, lifestyle, and more. Some risk factors can't be changed, such as your genes or ethnicity;       <sup>(B)</sup> are within your control, like your diet, physical activity, and whether you wear a seatbelt.

[ イ ] When you see health statistics, consider the types of people being described. If they're not similar to you, or if the category is very broad, then your risks may be different. A general statement like "More than half of Americans over age 45 will develop heart disease at some point" is based on a statistical       <sup>(C)</sup> across the entire U.S. population. If you're younger than

45, your heart disease risk will generally be much lower. The more risk factors you have (e.g., smoking, high blood pressure, or diabetes), the greater your risk. Exercise and a healthy diet, on the other hand, can make your chance of developing heart disease lower than for most other people.

“In many ways, our perception of risk is irrational,” says Elwood. “We sometimes worry over something that’s extremely unlikely, like an outbreak of Ebola disease\* in the U.S. And we ignore steps we can take to prevent what’s much more likely to harm us, like heart disease or cancer.”

[ ウ ] Even doctors sometimes have trouble with risk concepts. That’s why the NIH supports research to improve how medical staff and others communicate health risks and prevention strategies to patients and the public.

“Math in general is hard for a lot of people. Yet math is often hidden in everyday activities that affect our health,” says Dr. Russell Rothman, a physician and scientist at Vanderbilt University in Nashville. Rothman’s research focuses on helping people understand and work with numbers so they can reduce their risks of diabetes and excess weight, including childhood obesity.\*

[ エ ] Studies show that the way we hear and understand health statistics can be influenced by how the numbers are described, or how they’re “framed.” Different descriptions can affect how clear the information is and also what emotions it stirs. For example, a statement such as “More than 20% of Americans will eventually die of cancer” might sound less scary from a different perspective: “Nearly 80% of Americans will not die of cancer.” The same information might seem clearer described as a ratio: “More than         (D)         eventually.” Research shows that pictures or diagrams are often the most understandable—for instance, showing five human figures with one in a different color.

How then can we obtain reliable information about health risks? Start by talking with your doctor about your health risks. Ask how you can reduce your risks. And look to trustworthy websites for reliable health information.

\*diabetes 糖尿病    \*Zika infection ジカ感染

\*Ebola disease エボラ出血熱    \*obesity 肥満

(Adapted from 'Understanding Health Risks: Improve Your Chances  
for Good Health', *NIH News in Health*, October 2016)

1. 次の各問の答を①～④の中から1つ選び、その番号を解答欄にマークしなさい。

(1) 下線部(A) chance の具体的な内容に最も近いものはどれか。

- ① conception    ② likelihood    ③ odd    ④ capability

(2) 空欄(B)に入る最も適切なものは次のどれか。

- ① another    ② some    ③ the others    ④ others

(3) 空欄(C)に入る最も適切なものは次のどれか。

- ① average    ② center    ③ validity    ④ software

(4) What information is NOT given in the passage?

- ① You are likely to avoid obesity if you study mathematics.  
② You might get diabetes if you gain weight.  
③ Your risk of cancer is likely to increase if you smoke.  
④ You might catch the flu if a bystander sneezes.

(5) The author of the passage states that how the numbers are described or framed is significant. Why is it significant?

- ① Because it can get rid of our boredom.  
② Because we need to better understand what numbers show.  
③ Because we need to be good with numbers.  
④ Because it serves to lower the risk of developing heart disease.

(6) According to the passage, what should we primarily do to know about our health risks?

- ① Exercise and follow a healthy diet
- ② Consult a doctor
- ③ Take a different perspective
- ④ Work with numbers

(7) Which of the following is consistent with the passage?

- ① Genes are one controllable factor to reduce health risks.
- ② Dr. William Elwood, a physician at the NIH, states that knowing health risks enables you to make good health care decisions.
- ③ In the U.S., heart disease is quite as likely as Ebola.
- ④ Risk is a matter not of certainty but of possibility.

2. この英文に次の1文を入れる, 最も適切な場所はどこか。

Talking about health risks can make them more understandable.

- ① [ ア ]      ② [ イ ]      ③ [ ウ ]      ④ [ エ ]

3. 空欄(D)には, (ア)~(ク)の語句全てを用いて並び替えた英文が入る。3番目と6番目にくる単語および語句の組みあわせで適当なものを1つ選び, その番号を解答欄にマークしなさい。

(ア) in	(イ) of	(ウ) one	(エ) die
(オ) will	(カ) five	(キ) cancer	(ク) Americans

- ① 3番目 キ      6番目 ク
- ② 3番目 イ      6番目 ウ
- ③ 3番目 カ      6番目 エ
- ④ 3番目 ア      6番目 オ

〔Ⅱ〕 次の英文を読んで設問に答えなさい。

In the northwest Indian village of Ajrakhpur, 37-year-old Sufiyan Khatri stirs several smelly pots: one of bubbling blue liquid, another simmering fruit skins and a third containing a thick, black liquid of old bicycle parts fermenting with sugar cane. The mixtures are used to dye textiles with a traditional method called *ajrakh*. Khatri, who learned the craft from his grandfather, shares his last name with many Muslim textile artisans in the region who brought their craft to India from Sindh in Pakistan. Khatri means “one who fills with color.” He is one of more than 50 artisans in the village producing the textiles as a main source of income.

And he’s been pleased to have welcomed some new assistants: earthworms. Their job is to deal with dangerous materials in the dyes that are not only bad for the environment but also make it impossible to reuse the wastewater for the next round of dyeing. Thousands of the little creatures live inside a water filter called a “vermifilter.” That’s the term for a treatment system that cleans dye-tainted water. It was installed last May with support from the nongovernmental organization KHAMIR (Kutch Heritage, Art, Music, Information and Resources). The group connects the artisans of the Kutch district with outside resources and markets.

The filter is a few feet from Khatri’s studio. It is constructed out of dozens of bright blue plastic crates packed with organic materials including cotton roots, dirt, and all of those earthworms. Sprinklers spray cloudy blue water from attached tanks into the crates. The water trickles through the dirt. The worms feed on toxic dyes in the wastewater and produce waste that is not poisonous. <sup>(A)</sup> The water is filtered through the waste, the cotton roots, and other materials and comes out a pale yellow — and clean enough to reuse in the textile process.

The ability to       (B)       water is critical for the village, which consumes over 52,000 gallons of water every day to maintain an annual output of over

460,000 square feet of hand-printed cloth. Each piece is washed at least three times in community water tanks. And the artisans say they create colors by “playing with water” — adding varying amounts of ingredients like fruit skins and then bringing the mixture to a boil. Hundreds of years ago, ajrakh artisans had plenty of water to play with. However, with ground water levels in northwest India increasingly falling due to       (C)      , Ajrakhpur’s artisans are concerned about the future of their industry. “If we don’t get water,” Khatri says, “we stop our work.”

However, signs that something is wrong are already visible on Khatri’s textiles. As water levels decrease, minerals in the water like iron become more concentrated, which can leave dark spots on prints after the artisans wash them. And there are more serious problems: The release of dyes into the environment is a main source of water pollution. Khatri prides himself on using natural dyes, but many artisans       (D)       water polluted by synthetic dyes — and dispose of it in open drains.

Khatri says artisans appreciate that the worms have already cut their water costs. But the output of the filter — about 13,500 gallons per day — is       (E)       what they need to meet a growing demand for their textiles. The Indian government has approved a grant from India’s Ministry of Textiles to build a vermifilter in Ajrakhpur three times the size of the current one. It will be completed in the next two years. And it may pave the way for more worms in India and around the world. Vermifiltration technology was first made available in Chile in the 1990s. The largest systems are in South America, where they are mainly used for treating industrial wastewater, according to Kevin Jeffery, managing director of Wastewater Wizard Limited. He calls vermifiltration “a revolutionary approach to wastewater treatment.”

There are limitations, says Professor Ralf Otterpohl, director of the Institute of Wastewater Management and Water Protection at Hamburg University of Technology. One of the biggest ( ① ) is that the worms ( ② ) warm soil  
(F)

temperatures to ( ③ ). Plus, he adds, this type of technology is most suitable for small-scale production.

(Adapted from 'Worms Land A Great Job Working With Gorgeous Indian Textiles', by Shaina Shealy, May 20, 2017, *NPR News*)

1. 次の各問の答を①～④の中から1つ選び、その番号を解答欄にマークしなさい。

(1) 下線部(A) feed on の意味に最も近いものは次のどれか。

- ① taste                      ② finish off                      ③ consume                      ④ support

(2) 空欄(B), (C), (D)に入る組み合わせとして最も適切なものは次のうちどれか。

- ① (B) reuse                      (C) overuse                      (D) use  
② (B) overuse                      (C) use                      (D) reuse  
③ (B) use                      (C) overuse                      (D) reuse  
④ (B) reuse                      (C) use                      (D) overuse

(3) 空欄(E)に入る語として最も適切なものは次のうちどれか。

- ① regarded    ② consistent with  
③ indifferent to    ④ far from

2. 本文の内容について、次の質問に対する最も適切な答を①～④の中から1つ選び、その番号を解答欄にマークしなさい。

(1) According to the passage, which of the following seems to be true?

- ① Sufiyan Khatri will soon become thirty-seven years old.  
② Both natural and synthetic dyes are not environmentally friendly.  
③ All of Khatri's textiles are washed more than three times.  
④ Khatri's new assistants earn a modest income.



(2) According to the passage, how many more vermifilters of the same size are necessary at a minimum to meet the increasing demand for the village's textile production?

- ① one                      ② two                      ③ three                      ④ four

(3) According to the passage, which of the following is NOT true?

- ① Vermifiltration technology was first introduced in South America in the last decade of the twentieth century.
- ② The process of blending varying amounts of ingredients to make colors is called "playing with water."
- ③ Khatri, whose name means "one who fills with color" in the local language spoken in northwest India, was named after his grandfather.
- ④ The nongovernmental organization KHAMIR gave support to install a vermifilter, a water filter that cleans dye-tainted water.

3. 下線部(F)は「最大の課題の1つは、ミミズが繁殖するためには温かめの土壌温度が必要なことである。」という意味である。空欄①～③にそれぞれ適当な英語を1語入れなさい。

4. 本文に関連した以下の文章を読んで設問に答えなさい。

Vermifiltration is an innovative wastewater treatment process that uses worms to treat water loaded with ( a ) pollutants. It is considered to be an innovative technology that provides a ( b ) solution for the simultaneous treatment of wastewater as well as solid waste reduction and treatment. In this paper, an overview of vermifiltration systems in liquid waste management is presented. The paper starts by giving an overview of the vermifiltration process and then provides details of ( c ) studies and technologies used to treat wastewater using the vermifiltration process. The vermifiltration systems are compared with other biological treatment systems and the key factors influencing the process and the treatment efficiency of the process are critically reviewed. The scope and improvements to the process are finally suggested.

(Adapted from 'Vermifiltration Systems for Liquid Waste Management',  
by Karthika Krishnasamy, Jaya Nair, Robert James  
Hughes, October 1, 2013, *Environmental XPRT*)

- (1) 空欄(a), (b), (c)に入る最も適切な単語を枠内の①～③から1つずつ選び、その番号を解答欄にマークしなさい。ただし、同じものを2度以上使ってはならない。

① current	② organic	③ sustainable
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- (2) 上の英文のタイトルとして最も適切なものは次のどれか。

- ① Challenges for Future Studies in Vermifiltration
- ② Suggestions for the Effective Treatment of Wastewater
- ③ A Short History of Vermifiltration Systems in Liquid Waste Management
- ④ Innovation in Liquid Waste Management Systems: Vermifiltration

〔Ⅲ〕 以下の空欄に入る最も適切なものを①～④の中から1つ選び、その番号を解答欄にマークしなさい。

- (1) Had I not missed the train, I ( ) in time for the meeting.  
① would arrive                      ② arrived  
③ would have arrived                ④ will arrive
- (2) I had to stop playing golf because my back ( ) so much.  
① hurt                      ② injured                      ③ hurted                      ④ injure
- (3) A football player scored three goals ( ) at the national tournament.  
① after another    ② at a time                      ③ continuous                      ④ in a row
- (4) This progress report is hardly convincing for ( ) of any quantitative surveys on the issue.  
① the rest                      ② the sake                      ③ purposes                      ④ lack
- (5) According to the consultant, our contract will remain ( ) until the end of the year.  
① in effect                      ② for effect                      ③ effectively                      ④ effectiveness
- (6) The Scandinavians, for ( ) skiing is a part of everyday life, were against the idea of Winter Olympic Games.  
① who                      ② whom                      ③ what                      ④ which
- (7) ( ) breakthroughs in medical technology, such diseases as asthma and rheumatism have become curable.  
① Despite                      ② Though                      ③ Thanks to                      ④ Regardless of

(8) Enrolment in early childhood education has been rising: between 2005 and 2014, enrolment of 3-year-olds in pre-primary education rose from 54% to 69% and enrolment of 4-year-olds rose from \_\_\_\_\_ (A) \_\_\_\_\_ % to \_\_\_\_\_ (B) \_\_\_\_\_ % across countries, on average with data for both years. Across OECD countries, during the same period, the enrolment rate of 20-to-24-year-olds in university education increased from 29% to 33%, on average. Students often take \_\_\_\_\_ (C) \_\_\_\_\_ to complete a university program than planned. Some 41% of full-time students who enter a bachelor's or equivalent program graduate within the program's usual duration, while 69% graduate within the usual duration \_\_\_\_\_ (D) \_\_\_\_\_ three years on average across countries with individual student data.

(Adapted from *Education at a Glance 2016, OECD Indicators*)

- |     |           |          |              |          |
|-----|-----------|----------|--------------|----------|
| (A) | ① 22      | ② 38     | ③ 73         | ④ 85     |
| (B) | ① 22      | ② 38     | ③ 73         | ④ 85     |
| (C) | ① shorter | ② longer | ③ lower      | ④ higher |
| (D) | ① plus    | ② minus  | ③ divided by | ④ times  |

[IV] 次の会話文を読んで設問に答えなさい。

Dinosaur Visit

*Some Japanese junior high students and their parents are in New York with a very specific purpose.*

*(stepping off the subway)*

Sota: Excellent, here we are! 81<sup>st</sup> Street! According to my phone, the museum entrance is down the street from here ...

Saki: I'm so excited! It's hard to believe we're finally going to meet them face to face!

*(inside the main entrance)*

Sota: OK, here we go. I got the app for my cell phone ... We're in the Theodore Roosevelt Rotunda.

Saki: Hey, do you think things really come to life at night in this museum?

Sota: You mean like in that movie?

Saki: Yeah, the one with Rexie and Teddy. That would be cool if they did!

Kotone: Up to the 4<sup>th</sup> floor, you guys.

*(after stepping off the elevator)*

Kotone: OK, we parents are going to       (A)      . We'll be in the Hall of Advanced Mammals, which is —

Sota: Here on this floor. No problem, Mom.

Kotone: You       (B)       and give me a call or line me if you need anything.

Sota: Thanks, Mom. See you in a while.

Saki: OK. Bye, Mom.

Sota: There are two rooms here with dinosaurs. I want to go see Rexie in the Hall of Saurischian Dinosaurs.

*(They enter the hall and come face to face with T. Rex.)*

Saki: Wow! Look at that! Rexie is huge!

(Some boys of about the same age \_\_\_\_\_ (C) \_\_\_\_\_ the group of Japanese students.)

Tony: Hey, where you guys from?

Sota: Hello, we're from Japan.

Tony: Cool. I like your backpack.

Sota: Thanks — it's a Giants backpack.

Tony: Like from San Francisco?

Saki: No, but the colors are about the same. These Giants are from Tokyo.

Tony: Yeah? Are they any good?

Sota: (*laughs*) Are you kidding? They have a total of 22 championships plus nine more in the old league before that!

Tony: No way, dude! They have 31 championships? That's more than the Yankees! So \_\_\_\_\_ (D) \_\_\_\_\_ so many pictures and writing stuff in your notebook?

Sota: We have to because our teacher gave us summer homework.

Tony: Dude! Seriously? You have summer homework?

Saki: Sure, all Japanese students do.

Tony: Awesome! That T-Rex is so cool, really awesome.

Sota: So did you see that news last year about dinosaur feathers?

Tony: Yeah, I did. That was beyond cool.

Andy: You mean they found fossilized feathers? Whoa — \_\_\_\_\_ (E) \_\_\_\_\_?

Sota: No, no, this is real. They found feathers preserved in amber, and so now scientists are saying that —

Andy: So where'd they find them?

Tony: Andy, don't be rude, man. They found 'em in Myanmar, and they're from the middle of the Cretaceous Period, which was something like 99 million years ago.

Andy: So does it figure that Rex and Big Bird wore the same clothing?

Saki: (*giggling*) It must, but Big Bird is cuter!

Sota: And that wasn't the only thing they found. Scientists just (F) a bird preserved in amber.

Tony: Yeah, we heard about that in school. Our science teacher lets us (G), and we came on that.

Sota: Umm, (H), and I'll pull up a picture of it.

Andy: Whoa! Check out that foot!

Tony: Hey, you guys want to hang out with us? We're (I) Shake Shack and grab a bite.

Sota: Thank you. Where is that?

Andy: It's nearby, over on the corner of Columbus and 77<sup>th</sup>. Only a couple minutes from the Main Entrance.

Sota: Sure, that sounds like fun. Let me line my mom and tell her where we're going.

Tony: Say what? *Line* her?

Sota: Sure, that's what we use in Japan. You don't, I guess ...

Tony: No, we use Facebook, (J)mostly.

Saki: Let's exchange contact information. OK?

Tony: Sure, let's do that over burgers.

1. In Tony's comment about Facebook, what does (J) "mostly" mean?

- ① perhaps
- ② bigly
- ③ a large number of times
- ④ usually

2. Why do the parents say so little in this conversation?

- ① They're extremely shy.
- ② They go to a different place.
- ③ They can't because the kids talk too much.
- ④ Museum rules require visitors to speak quietly.

3. Based on this conversation, what do Sota and Tony have in common?

- ① Both like Big Bird from Sesame Street.
- ② Each thinks Andy is rude.
- ③ Both know quite a bit about one particular sport.
- ④ Both have summer homework.

4. 空欄(A)～(I)に入る最も適切なものを①～⑨の中から1つ選び、その解答欄に番号をマークしなさい。ただし、同じものを2度以上使ってはならない。

- ① reported having found
- ② you pulling my leg
- ③ give you guys some space
- ④ overhear this and turn toward
- ⑤ hang on a sec
- ⑥ how come you're taking
- ⑦ spend every Friday class trolling for science news
- ⑧ going to head over to
- ⑨ six stick together