

関西医科大学 一般

2012 年度 入 学 試 験 問 題

英 語 (問 題)

注 意

- 1) 英語の問題冊子は 8 ページあり，問題は 4 問である。白紙・空白の部分は下書きに使用してよい。
- 2) 別に解答用紙 1 枚があり，解答はすべてこの解答用紙の指定欄に記入すること。指定欄以外への記入はすべて無効である。
- 3) 解答用紙の所定欄に受験番号を記入せよ。氏名を記入してはならない。
また，＊印の欄には何も記入してはならない。
- 4) 問題冊子，解答用紙はともに持ち出してはならない。
- 5) 途中退場または試験終了時には，解答が他の受験生の目に触れないよう，解答用紙の上に問題冊子を重ねるなど十分配慮の上，監督者の許可を得た後に退出しなさい。

I 日本文の内容に合うように、[]内の語句を並べかえて、正しい英文にしてください。解答は*の位置に来る語のみを記しなさい。(ただし、大文字にすべき語も小文字で記してある。)

1. ヒポクラテスは、臨床医学の発展に重要な貢献をもたらした。

[clinical / development / hippocrates / key / made / a / contribution / of / the / to / medicine] .

[_____ * _____] .

2. 彼は、結核と間違えられそうなカラ咳が出ている。

[cough / developed / tuberculosis / be / a / may / has / for / that / mistaken / dry / he] .

[_____ * _____] .

3. 彼女は、何週間も仕事に来ていない。

[few / she / a / weeks / quite / has / been / work / from / for / away] .

[_____ * _____] .

4. 彼は、書類の紛失を報告する勇気がなかった。

[documents / report / he / loss / of / brave / enough / not / the / was / to] .

[_____ * _____] .

5. これは、遺伝子治療やワクチン開発のための有望な方法である。

[vaccine / promising / therapy / a / this / method / development / is / and / for / gene] .

[_____ * _____] .

Ⅱ 本文の内容に合うように、[]内の語句に、それぞれ指示されたアルファベットから始まる語を1語補って、正しい英文にしてください。解答は補った語と、並びかえたときのその語の位置の番号で記しなさい。(ただし、大文字にすべき語も小文字で記してある。)

1. 民主主義は、自らの人生に影響する決定において全ての人が平等の発言権をもっているという政治形態である。

Democracy is [form/in/a/which/people/of/all/have/g から始まる語] an equal say in the decisions that affect their lives.

Democracy is [① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨] an equal say in the decisions that affect their lives.

2. ビジネスでは、優位に立つことが重要である。

In business, [is/important/get/the/it/to/hand/u から始まる語].

In business, [① ② ③ ④ ⑤ ⑥ ⑦ ⑧].

3. 医者、は、普段、患者の具体的な症状を観察し、その病歴を調べることから診断を始める。

Physicians usually begin diagnosis by observing the [the/investigating/patient/for/case/and/specific/history/s から始まる語].

Physicians usually begin diagnosis by observing the [① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨]

4. 医者に相談せずに治療を中断してはいけない。

[do/without/the/not/discontinue/treatment/c から始まる語] your doctor.

[① ② ③ ④ ⑤ ⑥ ⑦] your doctor.

5. 現代日本における大衆文化の顕著な特徴の一つとなった「可愛さ」は、江戸時代にさかのぼると主張する研究者もいる。

Some researchers claim that [popular/“cuteness”/feature/which/become/of/a/culture/has/p から始まる語] in modern-day Japan, can be traced back to the Edo period.

Some researchers claim that [① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩] in modern-day Japan, can be traced back to the Edo period.

Ⅲ 次の英文を読んで、設問に答えなさい。

In 1990, world-famous physicist Stephen Hawking read papers of his colleagues proposing their version of a time machine, but he was immediately skeptical. His intuition told him that time travel was not possible because there are no tourists from the future. Hawking also raised a challenge to the world of physics. There ought to be a law, he proclaimed, making time travel impossible.

The embarrassing thing, however, was that no matter how hard physicists tried, they could not find a law to prevent time travel. Apparently, time travel seems to be consistent with the known laws of physics. Unable to find any physical law that makes time travel impossible, Hawking has recently changed his mind. He made headlines in the British papers when he said, "Time travel may be possible, but it is not practical."

Once (ア : consider) to be science fiction or fringe science, time travel has suddenly become a playground for theoretical physicists. The reason for all this confusion and excitement is that Einstein's equations allow many kinds of time machines. (Whether they will survive the challenges from the quantum theory, however, is still in doubt.) In Einstein's theory, in fact, we often encounter something called "closed time-like curves", which is the technical term for paths that allow for time travel into the past. If we followed the path of a closed time-like curve, we would set out on a journey and return before we left.

A possible time machine involves a wormhole. There are many solutions to Einstein's equations that connect two distant points in space. But since space and time are intimately intertwined in Einstein's theory, this same wormhole can also connect two points in time. Theoretically, by falling down the wormhole, you could journey into the past. But passing (イ) the wormhole at the center of a black hole is a one-way trip. As physicist Richard Gott has said, "I don't think there's any question that a person could travel back in time while in a black hole. The question is whether he could ever emerge to brag about it."

Time travel poses, however, all sorts of problems, logical, social, and technical. The most difficult one is the so-called “grandfather paradox”: what happens if we travel back in time and kill our own grandparents or parents before we are born? This is a logical impossibility because it implies that we would not have been born and thus could not have gone back in time to commit the murder. Difficult as it may sound, there are, however, ways to resolve this paradox.

First, perhaps, you simply repeat past history when you go back in time, therefore fulfilling the past. In this case, you have absolutely no free will and are forced to complete the past as you know it.

Second, you have free will, so you can change the past but within limits. Your free will is not allowed to create a time paradox. Whenever you try to kill your parents before you are born, a mysterious force prevents you from actually doing this.

Third, the universe splits into two universes. On one time line, the people whom you killed look just like your parents, but they are different because you are now in a parallel universe. This latter possibility, which is also explored in the famous Hollywood movie *Back to the Future*, seems to be consistent with the quantum theory.

The key to understanding time travel and the possibility to put it into practice is a theory of everything. Such a theory would unite the four forces of the universe and enable to calculate what would happen when we entered a time machine. Only a theory of everything could successfully calculate all the radiation effects created by a wormhole and definitively settle the question of how stable wormholes would be when we entered the time machine. But even then, we might have to wait for centuries or even longer to actually build a machine to test these theories.

(Adapted from Michio Kaku, *Physics of the Impossible*, New York: Anchor Books, 2009, pp. 221-228)

playground : (ここでは)活動の場

quantum theory : 量子論

theory of everything : 万物の理論

設問

(1) 次の英文が、本文の内容と一致している場合には T を、一致していない場合には F を記しなさい。

1. Stephen Hawking believed from the beginning that time travel is possible.
2. The known laws of physics clearly rule out the possibility of time travel.
3. Many theoretical physicists nowadays consider time travel a serious topic of research.
4. Physicists have already built wormholes which make time travel possible.
5. Richard Gott thinks that one could use a black hole for safely traveling back in time.
6. The “grandfather paradox” is a clear proof that time travel is impossible.
7. According to the third solution to the “grandfather paradox”, a time traveler could create a parallel universe.
8. The definitive answer to the possibility of time travel could only be provided by a theory of everything.

(2) (ア)の語を適切な形に直しなさい。直す必要のない場合はそのまま記しなさい。

(3) (イ)に入る最も適切な語を記しなさい。

IV 次の英文を読んで、設問に答えなさい。

Little more than two decades ago, it was virtually inconceivable that taking a pill would be the treatment for peptic ulcers, i.e., sores in the lining of the stomach and small intestines. Prior to the mid 1980s, most physicians and laypersons were convinced that ulcers were caused primarily by stress. They also believed that spicy food, excess stomach acid, smoking, and alcohol consumption played important secondary roles in ulcer formation. Today, we know otherwise, thanks to the pioneering work of Barry Marshall and Robin Warren, who received the Nobel Prize for their groundbreaking research that radically changed our thinking about ulcers and their treatment.

In 1983, Marshall and Warren pinpointed a link between peptic ulcers and a curved bacterium, named *Helicobacter pylori* or *H. pylori*, lurking in the lining of the stomach and intestines. The two scientists first discovered that *H. pylori* infection was common in people with ulcers, but uncommon in people without ulcers. To demonstrate that the microscopic invader was the culprit in producing ⁽⁷⁾ ulcers, Marshall bravely (some might say foolishly) swallowed a cocktail of the organisms and developed a stomach irritation known as gastritis for several weeks. Still, Marshall's daring experiment wasn't conclusive. He ended up (イ) a bad stomach ache, but no ulcer. So he was not exactly able to show a direct tie between *H. pylori* and ulcer formation. This result actually isn't all that surprising given that although the bacterium is present in about half of all people, only about 10–15 % of people who are infected by the organism develop ulcers.

The definitive link between *H. pylori* and ulcer formation came when independent researchers across the world cultured the bacterium, and demonstrated that treating *H. pylori* infection with strong antibiotics reduced the recurrence of ulcers dramatically. This finding was important because drugs that merely neutralize or inhibit the production (ウ) stomach acid can

effectively treat ulcers in the majority of cases, but 50–90 % of ulcers recur after treatment stops. The fact that antibiotics decreased the recurrence of ulcers by 90–95 % provided strong evidence that *H. pylori* caused ulcers.

However, since the great majority of people infected with *H. pylori* don't develop ulcers, scientists realized that other influences (ㄧ : must) play a role, too. They discovered that excessive use of medications like aspirin and ibuprofen can produce ulcers by irritating the stomach lining. They also came to understand that stress, too, probably plays a role in ulcers, although studies show that the widespread belief that stress *by itself* causes ulcers is wrong. For example, psychological distress is associated with higher rates of ulcers in human and non-human animals. Moreover, stress is linked to a poor response to ulcer treatment, and stressful events, (オ : include) earthquakes and economic crises, are associated with increases in ulcers. Additionally, people with generalized anxiety disorder, a condition marked by worrying too much of the time about many things, are at heightened risk for peptic ulcers.

We now understand the fact that stress may contribute to the development of ulcers in terms of a *bio-psycho-social perspective*, which proposes that most medical conditions depend on the complex interplay of genes, lifestyles, immunity, and everyday stress. Stress may also exert an indirect effect on ulcer formation by triggering such behaviors as alcohol use and lack of sleep, which make ulcers more likely.

The verdict is still out regarding the precise role that stress plays in ulcer formation, although it is clear that stress isn't the only or even most important influence. In all likelihood, stress, emotions, and the damage generated by disease-producing organisms combine to create conditions ripe for the growth of *H. pylori*. So if you're having stomach problems, don't be surprised if your doctor suggests that you learn to relax — as he pulls out a pen and pad to write you a prescription for powerful antibiotics.

(Adapted from Scot O. Lilienfeld et al., *50 Great Myths of Popular Psychology*, Malden and Oxford: Wiley-Blackwell, 2010, pp. 126-129)

peptic ulcer : 消化性潰瘍

gastritis : 胃炎

recurrence : 再発

設問

(1) 次の英文が、本文の内容と一致している場合にはTを、一致していない場合にはFを記しなさい。

1. Before 1983, most people believed that ulcers were caused mainly by stress.
2. *H. pylori* infection is frequently found in people who do not suffer from ulcer.
3. The successful treatment of *H. pylori* infection with strong antibiotics provides clear evidence that the bacterium plays a major role in ulcer formation.
4. We know now for sure that stress alone causes ulcers.
5. Nowadays, the most likely explanation for the causes of ulcer is *H. pylori* infection accompanied by such factors as stress, excessive use of medication irritating the stomach lining, etc.

(2) 下線部(ア)の意味に最も近いと思われるものを、次のA～Dの中から一つを選び、記号で答えなさい。

- A. person or thing responsible for causing a problem
- B. person or thing unrelated to the problem under discussion
- C. person or thing familiar to everyone
- D. person or thing discovered for the first time

(3) (イ)と(ウ)に入る最も適切な語を記しなさい。

(4) (エ)と(オ)の語を適切な形に直しなさい。直す必要のない場合はそのまま記しなさい。