

平成 20 (2008) 年度

慶應義塾大学入学試験問題

医 学 部

外 国 語 (英 語)

注 意

1. 受験番号と氏名は解答用紙の 2 カ所の記入欄にそれぞれ記入してください。
2. 受験番号は所定欄の枠の中に 1 字 1 字記入してください。
3. 解答は、必ず所定の解答欄に記入してください。数字を書き入れる解答欄 [A] と、記述用の解答欄 [B] に分かれています。
4. この問題冊子の総ページ数はこのページを含めて 12 ページです。
5. 若干の語句 (* のついたもの) については NOTES で取り上げられていますので参考にしてください。
6. この問題冊子は、試験終了後に持ち帰ってください。

[I] 次の和文の下線部の内容を英語で書き表しなさい。ただし、下線部（1）は解答用紙にある書き出しの英語に続けなさい。

(1) あらゆる状況であらゆる患者に最善の治療を提供するのに十分な資金がある保健医療制度 (health care system) は、世界のどこにも存在しない。医療に比較的大きな額を使っている国でさえそうである。よりすぐれた新しい治療法がつねに開発されている。英国では、平均すると毎月ほぼ三つの新薬が認可を受けている。そのほとんどが、既存の治療法に比べて何らかの利益をもたらすものであり、中には人々の寿命を延ばすものもある。これらの新薬の多くは高価である。さらなる利益のためにさらなる費用を払う価値があるのはどのような場合か。(2) この問いは、民営の制度であろうと、公的資金による制度であろうと、すべての保健医療制度によつて問われなければならない。

[II] 次の各群 (A) ~ (E) の 3箇所の括弧には同じ語が入る。その語を解答欄に書きなさい。

(A) (1) As is often the () in medical research, some of Dr. Brand's most important discoveries about Hansen's disease came about not as the result of systematic pursuit but through accident.
(2) Religious persecution is at the root of people fleeing their country. A () in point is colonial India.
(3) No () of rabies* has been reported in our country since 1960.

(B) (1) He left a note to the () that he would not be coming back.
(2) Parents worry about the () of websites on their adolescent's behavior.
(3) She lay quietly waiting for the sleeping pills to take ().

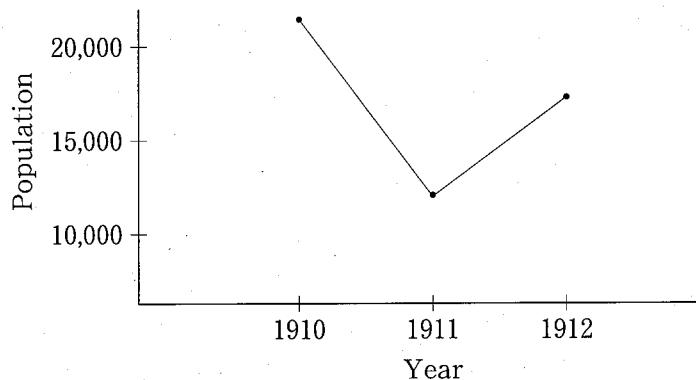
(C) (1) Critics () out that the prince, on his income, should be paying tax.
(2) The supports beneath the iron bridge have decayed to the () where they are hazardous.
(3) Let's stick to discussing whether the road should be built at all. The exact cost is beside the ().

(D) (1) Some people are enthusiastic about raising a fund in support of a good (), such as a charity.
(2) Eating much fat is considered to () heart disease.
(3) There is still wide disagreement among doctors as to the () of the disease.

(E) (1) It took them some time to () out the answer to an algebra question.

(2) A six-() number is between 100,000 and 999,999.

(3) See the () given below, which shows changes in the population of Town A between 1910 and 1912:



[III] 次の英文を読んで設問に答えなさい。

"I approve of your magazine and what it stands for," writes a subscriber, "but I am shocked by references (ア) computers and the internet. I thought you were (イ) books and reading. Please remain old-fashioned."

That sums up a misunderstanding—and a fear—common among many book-lovers (and old-fashioned people). ⁽¹⁾The same confusion was behind an invitation I received to speak at a gathering of librarians on "The rise of the computer, the death of the book." But books are not dead, or dying, or even a bit poorly, they have never been in better fettle*.

Computers have not killed off the book and will not. What they can do is to co-exist peacefully alongside books, because they are two very different things, with very different functions. ⁽²⁾Indeed, among the first people to embrace the internet wholeheartedly were members of the world-wide community of antiquarian booksellers.

I run a small publishing company and produce this magazine virtually single-handed, and that is only possible because of the computer. I can liaise* with free-lance designers and printers via the computer, keep my database of subscribers and customers on it, sell our books via our website as well as in the traditional ways—and it does not matter a jot* that I am in a barn in the middle of Gloucestershire. I can do it alone and in a tenth of the time it would

have taken even five years ago. I can keep costs down because of the computer. I can find out about other literary ventures, and we can provide mutual support (ウ) a global basis, via the computer.

The computer frees me to spend more time writing books, reading them, publishing them, and editing this magazine about them—delighting (エ) them in fact.

But no computer is going to replace a book to be read and loved and kept on a shelf. It may well be more convenient to access factual information via a computer and the internet, but it will never be a substitute (オ) curling up with a mug of cocoa and a beautiful book, an interesting book, a riveting* book, a rare book, a book which transports me, fires my imagination, expands my horizons, enriches my soul—or just diverts me in an entertaining way for an hour. ⁽³⁾ The elderly lady who borrows two romantic novels a week from her library would not want to access those on a cumbersome* screen which gives her eye-strain and is expensive and charmless; a mother cuddling a toddler on her knee, a father sitting beside the night-light with his five year old, sharing a picture book or reading aloud a wonderful story, are not going to find downloading some electronic words onto the desktop as delightful, intimate, friendly, quiet, cosy—and it's far quicker and cheaper to take down a book from the shelf, too.

⁽⁴⁾ Some librarians—not all, of course—have embraced the new computer and information technology with such enthusiasm that they believe that it can and will replace the book, and they have begun to throw out the baby* with the bathwater. Many British Council libraries abroad have got rid of their books altogether and replaced them (カ) rows of computer terminals—a terrible, not to say misguided, act of vandalism*.

設問

- 1 ① 下線部 (1) the same confusionを, 著者はどこどこに見出したのか, 本文の第1段落と第2段落に基づいて, 2点をそれぞれ15字程度の日本語で答えなさい。
② 下線部 (1) the same confusion の内容を30字程度の日本語で述べなさい。
- 2 下線部 (2) を和訳しなさい。
- 3 下線部 (3) を和訳しなさい。
- 4 下線部 (4) を, it の指す内容を明らかにして和訳しなさい。

5 本文中の(ア)～(カ)に入れるのにふさわしい語をそれぞれの選択肢1～3の中から1つ選び、その番号を解答欄[A]の所定の位置に書き入れなさい。

(ア)	1 as	2 of	3 to
(イ)	1 against	2 for	3 off
(ウ)	1 for	2 on	3 with
(エ)	1 for	2 in	3 on
(オ)	1 for	2 of	3 to
(カ)	1 at	2 from	3 with

[IV] 次の英文を読んで設間に答えなさい。

What exactly *is* scientific explanation? What exactly does it mean to say that a phenomenon can be 'explained' by science? This is a question that has exercised philosophers since Aristotle, but our starting point will be a famous account of scientific explanation put forward in the 1950s by the American philosopher Carl Hempel. Hempel's account is known as the *covering law* model of explanation, for reasons that will become clear.

The basic idea behind the covering law model is straightforward. Hempel noted that scientific explanations are usually given in response to what he called 'explanation-seeking why questions'. These are questions such as 'why is the earth not perfectly spherical?', 'why do women live longer than men?', and the like—they are demands for explanation. To give a scientific explanation is thus to provide a satisfactory answer to an explanation-seeking why question. If we could determine the essential features that such an answer must have, we would know what scientific explanation is.

Hempel suggested that scientific explanations typically have the logical structure of an argument, i.e. a set of premisses followed by a conclusion. The conclusion states that the phenomenon that needs explaining actually occurs, and the premisses tell us why the conclusion is true.

(あ)

Hempel's answer to the problem was three-fold. Firstly, the premisses should entail the conclusion, i.e. the argument should be a deductive one. Secondly, the premisses should all be true. Thirdly, the premisses should consist of at least one general law. General laws are things such as (A), and so on; they contrast with particular facts such as (B), and so on. General

laws are sometimes called 'laws of nature'. Hempel allowed that a scientific explanation could appeal to particular facts as well as general laws, but he held that at least one general law was always essential. So to explain a phenomenon, on Hempel's conception, is to show that its occurrence follows deductively from a general law, perhaps supplemented by other laws and/or particular facts, all of which must be true.

(v)

Schematically, Hempel's model of explanation can be written as follows:

General laws
Particular facts
⇒
Phenomenon to be explained

The phenomenon to be explained is called the *explanandum*, and the general laws and particular facts that do the explaining are called the *explanans*. The explanandum itself may be either a particular fact or a general law. In the example above, it was a particular fact—the death of my plant. But sometimes the things we want to explain are general.

(vi)

So the structure of a scientific explanation is essentially the same, whether the explanandum, i.e. the thing we are trying to explain, is particular or general.

It is easy to see why Hempel's model is called the covering law model of explanation. For according to the model, the essence of explanation is to show that the phenomenon to be explained is 'covered' by some general law of nature. There is certainly something appealing about this idea. For showing that a phenomenon is a consequence of a general law does in a sense take the mystery out of it—it renders it more intelligible. And in fact, scientific explanations do often fit the pattern Hempel describes.

(vii)

Hempel was aware that not all scientific explanations fit his model exactly.

(viii)

Hempel drew an interesting philosophical consequence from his model

about the relation between explanation and prediction. He argued that these are two sides of the same coin. Whenever we give a covering law explanation of a phenomenon, the laws and particular facts we cite would have enabled us to predict the occurrence of the phenomenon, if we hadn't already known about it.

(か)

The converse was also true, Hempel thought: every reliable prediction is potentially an explanation.

(き)

Though the covering law model captures the structure of many actual scientific explanations quite well, it also faces a number of awkward counter-examples. These counter-examples fall into two classes. On the one hand, there are cases of genuine scientific explanations that do not fit the covering law model, even approximately. These cases suggest that Hempel's model is too (C)—it excludes some *bona fide** scientific explanations. On the other hand, there are cases of things that *do* fit the covering law model, but intuitively do not count as genuine scientific explanations. These cases suggest that Hempel's model is too (D)—it allows in things that should be excluded.

設問

- 1 次の英文 (a) ~ (d) は本文中の (A) (B) のいずれかに入る例である。解答欄に、(A) の例であれば A と、(B) の例であれば B と、大文字で書き入れなさい。
 - 'a body's acceleration varies inversely with its mass'
 - 'all metals conduct electricity'
 - 'the plant on my desk contains chlorophyll'
 - 'this piece of metal conducts electricity'
- 2 本文中の (C) (D) に入る適当な形容詞を次の中から選び、解答欄に記号で書き入れなさい。ただし、同じ記号を複数回使用してはならない。
 - consistent
 - contradictory
 - liberal
 - strict
- 3 本文中の (あ) ~ (き) に入れるのにふさわしい文章を、つぎの A ~ G から選んで、解答欄に記号で書き入れなさい。ただし、同じ記号を複数回使用してはならない。

- [A] For example, we might wish to explain why exposure to the sun leads to skin cancer. This is a general law, not a particular fact. To explain it, we would need to deduce it from still more fundamental laws—presumably, laws about the impact of radiation on skin cells, combined with particular facts about the amount of radiation in sunlight.
- [B] For example, Newton explained why the planets move in ellipses* around the sun by showing that this can be deduced from his law of universal gravitation, along with some minor additional assumptions. Newton's explanation fits Hempel's model exactly: a phenomenon is explained by showing that it had to be so, given the laws of nature plus some additional facts. After Newton, there was no longer any mystery about why planetary orbits are elliptical*.
- [C] For example, if you ask someone why Athens is always immersed in smog, they will probably say 'because of car exhaust pollution'. This is a perfectly acceptable scientific explanation, though it involves no mention of any laws. But Hempel would say that if the explanation were spelled out in full detail, laws would enter the picture. Presumably there is a law that says something like 'if carbon monoxide is released into the earth's atmosphere in sufficient concentration, smog clouds will form'. The full explanation of why Athens is bathed in smog would cite this law, along with the fact that car exhaust contains carbon monoxide and Athens has lots of cars. In practice, we wouldn't spell out the explanation in this much detail unless we were being very pedantic*. But if we were to spell it out, it would correspond quite well to the covering law pattern.
- [D] Thus suppose someone asks why sugar dissolves in water. This is an explanation-seeking why question. To answer it, says Hempel, we must construct an argument whose conclusion is 'sugar dissolves in water' and whose premisses tell us why this conclusion is true. The task of providing an account of scientific explanation then becomes the task of characterizing precisely the relation that must hold between a set of premisses and a conclusion, in order for the former to count as an explanation of the latter. That was the problem Hempel set himself.

[E] To illustrate, suppose scientists predict that mountain gorillas will be extinct by 2010, based on information about the destruction of their habitat. Suppose they turn out to be right. According to Hempel, the information they used to predict the gorillas' extinction before it happened will serve to explain that same fact after it has happened. Explanation and prediction are structurally symmetric.

[F] To illustrate, consider again Newton's explanation of why planetary orbits are elliptical. This fact was known long before Newton explained it using his theory of gravity—it was discovered by Kepler. But if it had not been known, Newton would have been able to predict it from his theory of gravity, for his theory entails that planetary orbits are elliptical, given minor additional assumptions. Hempel expressed this by saying that every scientific explanation is potentially a prediction—it would have served to predict the phenomenon in question, had it not already been known.

[G] To illustrate, suppose I am trying to explain why the plant on my desk has died. I might offer the following explanation. Owing to the poor light in my study, no sunlight has been reaching the plant; but sunlight is necessary for a plant to photosynthesize; and without photosynthesis a plant cannot make the carbohydrates it needs to survive, and so will die; therefore my plant died. This explanation fits Hempel's model exactly. It explains the death of the plant by deducing it from two true laws—that sunlight is necessary for photosynthesis, and that photosynthesis is necessary for survival—and one particular fact—that the plant was not getting any sunlight. Given the truth of the two laws and the particular fact, the death of the plant *had* to occur; that is why the former constitute a good explanation of the latter.

[V] Describe your hero—either actual (for example, your parent or an Olympic athlete) or fictional (for example, a character in a film or a novel)—in English in about 80 words. Explain why you admire him or her.

[NOTES]

baby / noun

IDIOMS *throw out the baby with the bathwater*: (informal) to lose something that you want at the same time as you are trying to get rid of something that you do not want

bona fide / adjective

[usually before noun] (from Latin) genuine, real or legal; not false

cumbersome / adjective

1 large and heavy; difficult to carry; bulky 2 slow and complicated

ellipse / noun

(technical) a regular oval shape, like a circle that has been squeezed on two sides

elliptical / adjective

(geometry) connected with or in the form of an ellipse

fettle / noun

IDIOMS *in fine/good fettle*: (old-fashioned, informal) healthy; in good condition

jot / noun

[sing.] *not a/one jot*: used to mean 'not even a small amount' when you are emphasizing a negative statement: *There's not a jot of truth in what he says* (= none at all).

liaise / verb

liaise with (a person) : to work closely with somebody on something of common concern

pedantic / adjective

(disapproving) too worried about small details or rules

rabies / noun

[U] a disease of dogs and other animals. Infected animals can pass the disease to humans by biting them.

riveting / adjective

(approving) so interesting or exciting that it holds your attention completely

vandalism / noun

[U] the crime of destroying or damaging something, especially public property, deliberately and for no good reason

[出典]

[I] トニー・ホープ, 『医療倫理』(岩波書店, 2007年) に基づく [一部変更].

[III] Susan Hill, 'Editorial', *Books and Company* (1999), pp. 5-6.

[IV] Samir Okasha, *Philosophy of Science* (Oxford University Press, 2002), pp. 40-45.