

第1問 次の英文はある紹介記事の前文である。これを読んで下の設問に答えよ。

① The public face of scientific genius tends to be old and graying. We think of Albert Einstein's disorderly hair, Charles Darwin's majestic beard, Isaac Newton's wrinkled face—not to mention the balding celebrities* who accept their Nobel Prizes in Stockholm each December. Yet the truth is that the breakthroughs that fire our imagination and change our lives are usually made by men and women who are still in their 30s or 40s—and that includes Einstein, Newton and Darwin. It's no surprise, really; younger scientists are less invested than their elders in the intellectual dogma of the day. They (a) authority instinctively. They don't believe it when they're told a new idea is crazy, so they're free to do the impossible.

To get a preview of the unsettling truths science will be uncovering in this new century, then, it makes sense to look at young researchers in the most creative phase of their careers, when formal education is complete but eminence still hovers indistinctly in the future. Scientific insiders already know who the most promising young thinkers are, and now you can meet some of them as well: a biologist looking in steaming hot springs for clues to the origin of life; an astrophysicist* searching (b) evidence of the “antigravity” force that Einstein once dismissed; a neuroscientist* studying (c) the brain, despite what all the textbooks said, *can* grow new cells. The impact of their work may not be fully appreciated for decades, if not longer. But then (d)) and his peculiar theory of relativity almost exactly a century ago.

注 celebrities 高名な人たち

astrophysicist 天体物理学者

neuroscientist 神経科学者

問1 下線部①を日本語で要約せよ。長さは2行以内とする。

問2 下から最も適切な単語を選んで空所 (a) を埋めよ。

{abuse, grant, possess, question, receive}

問3 下から最も適切な単語を選んで空所 (b) および空所 (c) を埋めよ。

{at, for, in, with, what, who, how}

問4 下の語を正しく並べ替えて空所 (d) を埋めよ。

{man, have, the, you, obscure, same, about, could, said, young, an}

問5 上記の英文はどのような人びとを紹介する記事の前文か。本文中の語句をうまく組み合わせて英語で答えよ。長さは7語以内とする。

第2問 次の英文を読んで設問に答えよ。

Electronic computer memory is classified into ROM and RAM. ROM stands for “read only” memory. More strictly it is “write once, read many times” memory. The pattern of 0’s and 1’s is “burned” into it once and for all upon manufacture. It then remains unchanged throughout the life of the memory, and the information can be read any number of times. Other electronic memory, called RAM, can be “written to” as well as read. What the letters RAM actually stand for is misleading, so I won’t mention it. The point about RAM is that you can put any pattern of 1’s and 0’s into any part of it that you like, on as many occasions as you like. Most of a computer’s memory is RAM. As I type these words they are going straight into RAM, and the word-processing program controlling things is also in RAM, although it could theoretically be burned into ROM and then never subsequently altered. ROM is used for a fixed set of standard programs, which are needed again and again, and which you can’t change even if you wanted to.

DNA is ROM. It can be (a) millions of times over, but only written to once—when it is first assembled at the birth of the cell in which it resides. The DNA in the cells of any individual is “burned in,” and is never altered during that individual’s lifetime, except by very rare random deterioration*. It can be copied, however. It is ③ duplicated every time a cell divides. The pattern of A, T, C and G nucleotides* is faithfully copied into the DNA of each of the trillions* of new (b) that are made as a baby grows. ④ When a new individual is conceived, a new and unique pattern of data is “burned into” his “DNA ROM,” and he is then stuck with that pattern for the rest of his (c). It is copied into all his cells (except his ⑤ [rì:prədák tiv] cells, into which a random half of his DNA is copied).

注 deterioration 悪化、劣化

nucleotide ヌクレオチド (生化学用語)

trillion 兆 (10の12乗)

- 問1 下線部①は何を指し示すか。本文中の語句を使って答えよ。
- 問2 下線部②は何を指し示すか。本文中の語句を使って答えよ。
- 問3 下線部③の“duplicated”と同じ意味を表す単語を本文から抜き出して解答欄に記入せよ。
- 問4 下線部④を和訳せよ。
- 問5 下線部⑤の発音記号を英単語で表記せよ。
- 問6 本文中に使用されている語を使って空所 (a)、(b)、(c) を埋めよ。
- 問7 ROM について最初の段落で述べられていることを日本語で要約せよ。長さは2行以内とする。

第3問 次の英文を読んで下の設問に答えよ。

Recently the *Washington Post* printed an article explaining how the appliance manufacturers plan to drive consumers insane.

Of course they don't SAY they want to drive us insane. What they SAY they want to do is have us live in homes where "all appliances are on the Internet, sharing information" and appliances will be "smarter than most of their owners." For example, the article states, you would have a home where the dishwasher "can be turned on from the office," the refrigerator "knows when it's out of milk," and the bathroom scale "transmits your weight to the gym."

I frankly wonder whether the appliance manufacturers, with all due respect, have been smoking crack*. I mean, did they ever stop to ask themselves WHY a (i), after loading a dishwasher, would go to the office to start it? Would there be some kind of career benefit?

Listen, (ii): We don't NEED a dishwasher that we can communicate with from afar. If you want to improve our dishwashers, give us one that senses when people leave dirty dishes on the kitchen counter and shouts, "Put those dishes in the dishwasher right now." Likewise, we don't (a) a refrigerator that knows when it's out of milk. We already (b) a foolproof system for determining if we're out of milk: we ask our wife.

As for a scale that transmits our weight to the gym: Are they crazy? We don't want our weight transmitted to our own EYEBALLS! What if the gym transmitted our weight to all these other appliances on the Internet? What if, God forbid, our refrigerator found out our weight? We'd never get the door (c) again!

注 crack 麻薬 (コカイン)

問1 下線部①を和訳せよ。

問2 下線部②の“they”は何を指し示すか。本文中の英語で答えよ。

問3 本文中の1語を使い、必要なら語形を変えて、空所(i)を埋めよ。

問4 本文中の2語を使って空所(ii)を埋めよ。

問5 下の語群から最も適切な単語を選んで空所(a)、(b)、(c)を埋めよ。

{ask, have, need, know, open, warm}

第4問 空所 (a) ~ (e) に最も適切と思われる単語を入れよ。

A: How many cigars do you smoke a day?

B: About ten.

A: What do they cost you?

B: (a) dollars apiece.

A: My, that's twenty dollars a day. How long have you (b) smoking?

B: Thirty years.

A: Twenty dollars a day (c) thirty years is a lot of money.

B: Yes, it is.

A: Do you see that office building on the corner?

B: Yes.

A: If you had (d) smoked in your life, you might have owned that fine building.

B: Do you smoke?

A: No, I never did.

B: Do you (e) that building?

A: No.

B: Well, I do.

第5問 次の日本語はアメリカのある大教室での会話である。これを読んで、なぜそれがおかしいかを英語で説明せよ。長さは解答欄を満たす程度とする。

先生：ドアの近くで立っている人、ジョン王がマグナ・カルタを認めたのはいつですか。

若者：わかりません。

先生：わからないって。じゃあ、テニスコートの誓いとは何かね。

若者：知りません。

先生：じゃあ、ヘンリー八世が宗教改革において果たした役割は？

若者：わかりません。

先生：なんたることだ。ちゃんと調べておくよう先週の金曜日に言ったじゃないか。君は金曜日に何をしていたんだ。

若者：友だちとビールを飲んでいました。

先生：なんだって。私にそんなことを言うのか。それで合格すると思っているのかね。

若者：それはよくわかりませんがね、先生。ぼくはエアコンをなおしに来たんですよ。

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