

# 筑波大学 前期

平成26年度 個別学力試験問題

## 外国語 (英語)

(120分)

- 人文・文化学群 (人文学類, 比較文化学類, 日本語・日本文化学類)  
社会・国際学群 (社会学類, 国際総合学類)  
人間学群 (教育学類, 心理学類, 障害科学類)  
生命環境学群 (生物学類, 生物資源学類, 地球学類)  
理工学群 (数学類, 物理学類, 化学類, 応用理工学類,  
工学システム学類, 社会工学類)  
情報学群 (情報科学類, 情報メディア創成学類,  
知識情報・図書館学類)  
医学群 (医学類, 看護学類, 医療科学類)

### 注 意

- 1 問題冊子は1ページから12ページまでである。
- 2 解答は解答用紙の定められた欄に記入すること。

I 次の英文を読んで、下の問いに答えなさい。

(星印(\*)のついた語には本文の後に注があります。)

Information is exploding so furiously around us and information technology is changing at such surprising speed (ア) we face a fundamental problem: how to orient ourselves in the new landscape? What, for example, will become of research libraries in the face of technological marvels such as Google? How to make sense of it all? I have no answer to that problem, but I can suggest an approach to it: look at the history of the ways information has been communicated. Simplifying things radically, you could say that there have been four fundamental changes in information technology (イ) humans learned to speak.

Somewhere, around 4000 BC, humans learned to write. Egyptian hieroglyphs go back to about 3200 BC, alphabetical writing to 1000 BC. According to scholars like Jack Goody, the invention of writing was the most important technological breakthrough in the history of humanity. It transformed mankind's relation to the past and opened a way for the emergence of the book as a force in history.  
(1)

The history of books led to a second technological shift when the codex  
(2)  
replaced the scroll sometime soon after the beginning of the Christian era. By the third century AD, the codex — that is, books with pages that you turn as opposed to scrolls that you roll — became crucial to the spread of Christianity. It transformed the experience of reading: the page emerged as a unit of perception, and readers were able to leaf through a clearly written text, one that eventually included differentiated words (that is, words separated by spaces), paragraphs, and chapters, along with tables of contents, indexes, and other reader's aids.

The codex, in turn, was transformed by the invention of printing with movable type in the 1450s. To be sure, the Chinese developed movable type around 1045 and the Koreans used metal characters rather than wooden blocks around 1230. But Gutenberg's invention, unlike those of the Far East, spread

like wildfire, bringing the book within the reach of ever-widening circles of readers. The technology of printing did not change for nearly four centuries, but the reading public grew larger and larger, thanks to improvements in literacy, education, and access to the printed word. Pamphlets and newspapers, printed by steam-driven presses on paper, extended the process of democratization so<sup>(3)</sup> that a mass public came into existence during the second half of the nineteenth century.

The fourth great change, electronic communication, took place yesterday, or the day before, depending on how you measure it.<sup>(4)</sup> The Internet dates from 1974, at least as a term. It developed from ARPANET, which went back to 1969, and from earlier experiments in communication among networks of computers. The Web began as a means of communication among physicists in 1991. Web sites and search engines became common in the mid-1990s. And from that point everyone knows the succession of brand names that have made electronic communication an everyday experience: Gopher, Mosaic, Netscape, Internet Explorer, and Google, founded in 1998.

When strung out in this manner, the pace of change seems amazing:<sup>(5)</sup> from writing to the codex, 4,300 years; from the codex to movable type, 1,150 years; from movable type to the Internet, 524 years; from the Internet to search engines, 17 years; from search engines to Google's search ranking system, 7 years; and who knows what is just around the corner or coming out the pipeline?

Each change in the technology has transformed the information landscape, and the speed-up has continued at such a rate as to seem both unstoppable and incomprehensible. In the long view the general picture looks quite clear — or, rather, dizzying.\* But by ordering the facts in this manner, I have made them lead to an excessively dramatic conclusion. By rearranging the evidence it is possible to arrive at a different picture, one that emphasizes (ウ) instead of change. The (ウ) I have in mind has to do with the nature of information



itself or, to put it differently, the inherent\* instability of texts. In place of the long-term view of technological transformations, which is the basis of the common notion that we have just entered a new era, the information age, I want to argue that every age was an age of information, each in its own way, and that information has always been unstable.

( エ )

Information has never been stable. That may be a simple truth, but it bears reconsidering. It could be used to correct the belief that the speed-up in technological change has rushed us into a new age, in which information has spun completely out of control. I would argue that the new information technology should force us to rethink the notion of information itself. It should not be understood as if it took the form of hard facts or chunks of reality ready to be lifted out of newspapers, archives, and libraries, but rather as messages that are constantly being reshaped in the process of transmission. Instead of ( オ ) documents, we must deal with ( カ ) texts. By studying them skeptically on our computer screens, we can learn how to read our daily newspaper more effectively — and even how to appreciate old books.

(注) dizzying : 目まいがするような

inherent : 本来備わっている

1. 空所( ア )に入る最も適切な語を次の中から1つ選び, 記号で答えなさい。

(A) if                      (B) so                      (C) that                      (D) which

2. 空所( イ )に入る最も適切な語を次の中から1つ選び, 記号で答えなさい。

(A) because              (B) before              (C) since              (D) when

3. 下線部(1)は具体的にどのようなことですか。最も適切なものを次の中から1つ選び、記号で答えなさい。

- (A) Humans became able to keep records of the past.
- (B) Humans emerged as a power because of the book.
- (C) Humans learned how to fight by reading history books.
- (D) Humans regarded books as a necessity in history.

4. 下線部(2)の理由として最も適切なものを1つ選び、記号で答えなさい。

- (A) The codex was followed by the scroll because the latter was convenient for comparing passages.
- (B) The codex was followed by the scroll because the latter made it easier to scan through the book.
- (C) The scroll was followed by the codex because the latter formed the reader's perception of society.
- (D) The scroll was followed by the codex because the latter made it possible to read page by page.

5. 下線部(3)の説明として最も適切なものを1つ選び、記号で答えなさい。

- (A) Printing helped to adjust the inequality between men and women.
- (B) Printing helped to make reading within the reach of ordinary people.
- (C) Printing helped to organize political parties protesting against the king.
- (D) Printing helped to shape a system of government by voting.

6. 下線部(4)で or を使って言い換えているのはなぜですか。下の英文がその説明となるように、空所( a )と( b )のそれぞれに入る単語を、本文中から抜き出して答えなさい。

The internet as a tool of everyday ( a ) came about 20 years later than the earlier ( b ) in computer-to-computer networks.

7. 下線部(5)で pace of change のどの点が amazing と思えるのですか。20 字程度の日本語で説明しなさい。
8. 二箇所ある空所(ウ)に同じ語が入ります。最も適切な語を次の中から1つ選び、記号で答えなさい。  
(A) continuity (B) process (C) reservation (D) simplicity
9. 空欄(エ)に入る例として最も不適切なものを1つ選び、記号で答えなさい。  
(A) Rumors posted on the Internet have been circulating worldwide and we are not sure which ones are true.  
(B) Sophisticated readers in the Soviet Union learned to distrust everything that appeared in the state-controlled newspaper.  
(C) The life described in Egyptian hieroglyphs can be recreated through interpreting it.  
(D) The outbreak of the American Revolution was reported with subtle changes every time it was reprinted.
10. 空所(オ)と(カ)のそれぞれに1語を入れて文を完成させると、次の組み合わせのうちどれが最も適切ですか。次の中から1つ選び、記号で答えなさい。  
(A) (オ) fixed (カ) changing  
(B) (オ) original (カ) informative  
(C) (オ) printed (カ) internet  
(D) (オ) unstable (カ) reliable

(次ページに第Ⅱ問があります。)

II 次の英文を読んで、下の問いに答えなさい。

(星印(\*)のついた語には本文の後に注があります。)

How many times have you looked up on a clear night to see a spark of light fly across the sky, then fade into the blackness? Popularly known as “shooting stars,” these natural fireworks are meteors. They result from tiny pieces of natural space debris\* falling at high speed through the upper atmosphere and burning up. Tens of thousands of tons of extra-terrestrial dust settle on Earth each year only to pile up in the oceans, or become lost on the surface of our rocky planet.

Some of the larger objects fall to Earth intact,\* as “meteorites.” They are occasionally recovered by people who see them falling, or by scientists out hunting for them. Mostly they end up in museum collections, carrying the names of the places where they fell or were found. Meteorites are an endless source of fascination for everyone, and a treasure trove of information for scientists. But what is it that this debris from the Solar System tells us?

Of the planets in the Solar System, Earth is the most active, geologically speaking. Since it formed, our planet has changed constantly, rubbing out many of the clues to its early history. The cratered surface of the Moon tells of a period of heavy bombardment by huge chunks of Solar System debris more than 3800 million years ago. Yet on Earth, although some younger impact craters are known, constant geological forces have wiped the record of this early event from its surface. In that same 3800 million years, continents have arisen, seas and oceans have opened and closed, mountains have been pushed up only to be eroded down to their roots again by wind and water, and volcanoes have erupted new rock from the Earth’s hot interior. Ancient rocks in continents such as Australia, Africa and North America formed as long ago as 3800 million years. Other rocks, from Western Australia, contain a legacy of mineral grains worn from pre-existing rocks that existed 4400 million years ago. But clues to the



<sup>(2)</sup>nature of the planet before this time are nowhere to be found in the rocks that now make up the Earth's surface.

What were the original materials from which the Earth was made? To get an idea of what these might have been like, we have to look at meteorites — fragments of rock (stony meteorites), metal (iron meteorites) and mixtures of rock and metal (stony-iron meteorites)— which have survived their hot journey from space to Earth. As well as meteorites, a large amount of meteoritic dust, harder to recognize and collect, adds to our knowledge of the Solar System and beyond. The stuff that many meteorites are made of is 4555 million years old, having remained virtually unaltered since its formation. Meteorites mostly represent the debris left over after the formation of the planets and, like messengers across space and time,<sup>(3)</sup> they carry a unique record of the earliest events in the birth of the Solar System.

A few meteorites containing water and rich in complex compounds of carbon, oxygen, nitrogen and hydrogen may represent the original materials from which our planet gained water for the oceans, gases for the atmosphere, and other essential ingredients for the evolution of life. Opening a window on the complexities of star formation, tiny diamonds and other grains found in meteorites record events that happened long before the Solar System was born.

<sup>(4)</sup>Like detectives, planetary scientists search for clues to understand the events of the past. They interpret the evidence and, so far as they can, provide the answers, or construct theories based on all the facts that can be collected by observation, measurement and experiment. Providing us with an understanding of our most distant past, meteorites are of great scientific interest, and their study (now called meteoritics) has played an important role in advances in physics, chemistry, geology and astronomy.

(注) debris : 破片

intact : 損なわれなくて

1. 科学者が、下線部(1)のように考える理由として、最も適切なものを1つ選び、記号で答えなさい。

- (A) Meteorites consist of rocks from the Earth's hot interior.
- (B) Meteorites come from other planets outside of the Solar System.
- (C) Meteorites make the geological and biological formation of the Earth.
- (D) Meteorites inform us of materials with which the Earth was originally formed.

2. 第3段落では、月と地球にどのような違いが起きたと述べていますか。以下の英文がその説明となるように、( )内に入る語を下記から選び、記号で答えなさい。ただし、同じ単語は2回使えません。

Although both the Moon and the Earth had been ( ア ) by chunks of Solar System debris more than 3800 million years ago, craters have ( イ ) mainly on the surface of the Moon. On the Earth, constant geological activities that ( ウ ) continents, rivers and mountains, have ( エ ) many of the craters on the Earth. As a result, major records on the Earth of this early event are nowhere to be ( オ ).

- (A) erased
- (B) formed
- (C) hit
- (D) remained
- (E) seen

3. 下線部(2)の nature と同じ意味で使われている英文を、次の中から1つ選び、記号で答えなさい。

- (A) During the time of famine, nature did not provide enough food to sustain the village.
- (B) Earthquakes and typhoons can be disastrous phenomena of nature.
- (C) Its noncommercial nature attracts larger participants to the enterprise.
- (D) We should take measures to stop the pollution of air, water and soil in order to preserve nature.

4. 本文の内容に即して、以下の英文を完成させるために、最も適切なものを1つ選び、記号で答えなさい。

To find out what might be the original materials from which the Earth was made, scientists search for \_\_\_\_\_.

- (A) meteorites and craters
  - (B) meteorites and meteoritic dust
  - (C) the Moon and craters
  - (D) the Moon and meteoritic dust
5. 下線部(3)の比喩は隕石のどのような点を表現していますか。40字程度の日本語で説明しなさい。
6. 下線部(4)の比喩は惑星科学者のどのような点を表現していますか。40字程度の日本語で説明しなさい。

### Ⅲ 次の英文を読んで、下の問いに答えなさい。

Social networks like Facebook, Twitter and YouTube have rapidly become a part of many people's everyday lives, especially for those younger generations who have grown up with so much technology ( ア ) their fingertips. There are lots of possible reasons for using social media — to stay ( イ ) touch with friends, share a funny video, keep up ( ウ ) the news, build professional contacts, and just generally feel well informed. So, what did our sample of more than 900 students around the world tell us?

The four choices we offered were: “To keep up to date,” “It’s interesting,” “For useful connections,” and “To have a say.” Of the four choices we offered, ( エ ) far the most commonly selected reason for using social media was “To keep up to date.” This was the leading reason across every age group, selected by 42% of those aged 20 or under, 38% of 21-30 year olds, and 37% of those aged 31 or over. The second most common reason was “It’s interesting,” followed by “For useful connections” and “To have a say.” As may be expected, the opportunity to build useful connections became more important among older respondents, who are presumably more focused on using social media for professional development. Meanwhile respondents aged 20 or under were more likely to value the chance “To have a say” than those aged 31 or over.

While these overall differences between age groups seem fairly obvious, differences at the regional level would be ( ① ) easy to predict. As shown in Figure 1, the overall trends for Europe were pretty much ( ② ) as those in the US and Canada. However, based on our sample, students in Latin America were much ( ③ ) motivated by opportunities “To have a say,” and much ( ④ ) driven by the interest factor. Those in Africa were the most likely to value the chance to establish useful connections. In the category “To have a say,” responses were low overall with Asia reporting highest at 7%.



1. 空所(ア)(イ)(ウ)(エ)に入る最も適切な語を次の中から1つずつ選び、記号で答えなさい。ただし、同じ単語は2回使えません。

- (A) across                      (B) at                      (C) by  
 (D) from                      (E) in                      (F) with

2. Figure 1を見て、空所(①)(②)(③)(④)に指定の語数からなる適切な英語の語句を入れなさい。同じ語句を複数回用いてもかまいません。

- ① [1語]                      ② [2語]                      ③ [1語]                      ④ [1語]

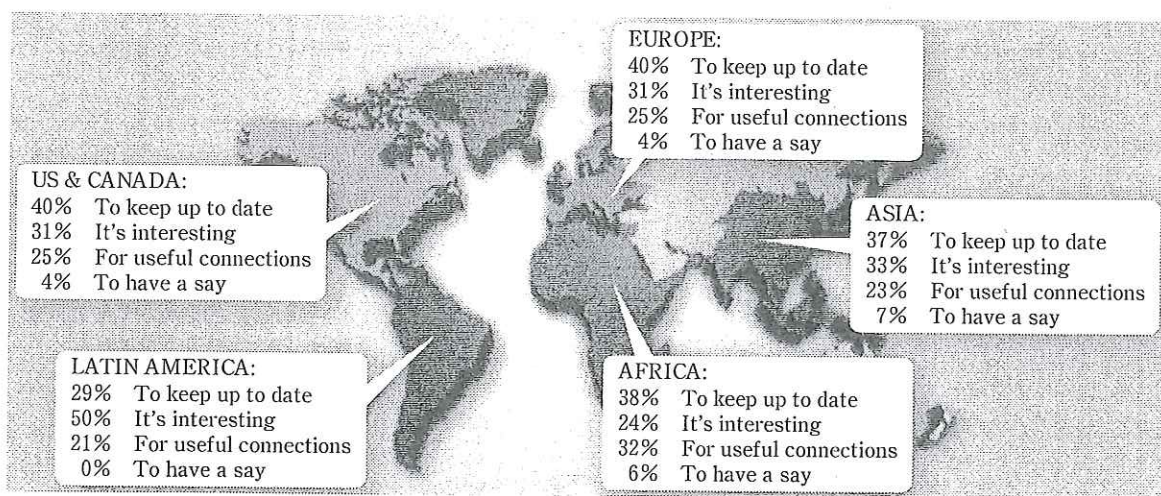


Figure 1. Top reasons for using social media (Facebook)

3. Social networks (Facebook, Twitter, YouTube など)は人間関係にどのような影響を与えますか。自分の考えを80語程度の英語で論理的かつ具体的に述べなさい。