

# 平成22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10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(\*)の付いた語句には本文の後に注があります。)

I didn't have a chemistry set when I was a kid. Instead, my dad and I raided the shed for glass jars and filled them with varying amounts of water to make our own musical instrument. For me it was the start of a lifelong passion for science — yet I didn't go on to become a scientist. I was a massive fan of painting and writing at school, so I saw myself as an artist. I excluded myself from science because I didn't think you could do both.

We need scientists more than ever, not least to work out how to tackle the effects of climate change. Yet like me, many children who initially show an interest in ( A ) are rejecting the subject at school. Why is this, and what can we do about it?

I believe that children are natural-born scientists. They have enquiring\* minds, and they aren't afraid to admit that they don't know something. If you think about the spirit of science — deciding what you want to find out, setting out how you're going to discover it, then carrying out the experiment and coming to a conclusion — that's how kids work. Unfortunately, most of us lose this as we get older. We become self-conscious and don't want to appear stupid. Instead of finding things out for ourselves we make assumptions that often turn out to be wrong.

So it's not a case of getting kids interested in science. You just have to find a way to avoid killing the passion for learning that they were born with. I think it's no coincidence that kids start deserting science the moment it becomes formalised. Children naturally have a blurred approach to acquiring knowledge. They see learning about science or biology or cooking or how not to close a door on your feet as all part of the same act — it's all ( B ). It's only because of the practicalities of education that you have to start breaking down the curriculum into specialist subjects. You need to have a timetable, and you need

to have specialist teachers who impart\* what they know. Thus once they enter the formalised medium\* of school, children begin to delineate\* subjects and erect boundaries that needn't otherwise exist.

(3)  
Dividing subjects into science, maths, English, poetry, art and so on is something that we do for convenience. In the end it's all learning, it's all information, but just as I once excluded myself from a scientific education, I see children making the same choice today. They look at science lessons and think: "This is for scientists, not for me."

Of course we need to specialise eventually. Each of us has only so much time on Earth, so we can't study everything. At 5 years old, your field of knowledge and exploration is broad, covering anything from learning to walk to learning to count. (4) Gradually it funnels down so that by the time you are 45, it might be one tiny little corner within science.

Of course we need specialised scientists to build experiments such as the Large Hadron Collider\*, and solve problems such as working out how best to store hydrogen for fuel cells to make hydrogen-powered cars. But how many young minds are lost from science because they don't see themselves as scientists? Those losses are a shame for society, and a shame for the kids concerned too. They exclude themselves from a fascinating subject when in truth the difference between a 13-year-old scientist and a 13-year-old poet is really not that big.

We need a way to keep children bouncing along and excited about learning and discovery in general, despite the barriers and boundaries they come across at school. (5) Here I think there is a role for makers of popular TV, radio and books. After all, we don't have to worry about timetables and teachers.

In my new TV series, *Blast Lab*, I get together with teams of children in my underground lab and we carry out experiments, from making an apple pie without any apples to keeping a ping-pong ball floating in the air to making a jelly volcano. It gets messy, and I have as much fun as the kids do because I'm

learning along with them. There's a shared sense of "Ha, we found out!" Rather than trying to distil\* a massive catalogue of knowledge and passing it down, as happens in ( C )s, or trying to say "this is science", I wanted to make a programme that passes on to the children who watch it the confidence to go and find things out for themselves.

(注)

enquiring : inquiring

impart : teach

formalised medium : formal environment

delineate : distinguish

the Large Hadron Collider : 大型ハドロン衝突型加速器(世界最大の素粒子加速実験装置)

distil : extract the essence of

1. 下線部(1)の this が指すものを、本文中から選び、英語で答えなさい。
2. 下線部(2)を日本語に訳しなさい。
3. 下線部(3)の otherwise の内容を、日本語で説明しなさい。
4. 下線部(4)を日本語に訳しなさい。
5. 下線部(5)の the barriers and boundaries they come across at school の内容を、本文に基づいて、日本語で説明しなさい。
6. 空所( A )( B )( C )に入る最も適切な語を、本文中から選び、英語で答えなさい。

7. 次の中から、本文の内容に合っているものを2つ選び、選択肢順に記号で答えなさい。

- (A) In school, children acquire scientific knowledge separately from other classes.
- (B) Parents are expected to encourage their children to have an interest in science.
- (C) The practicalities of education are essential for revising school curriculums at all levels.
- (D) The author has not lost interest in science in spite of the science lessons in school.
- (E) Science classes should be replaced with shows just like ones in the TV series, *Blast Lab*.

II 次の英文を読んで、下の問いに答えなさい。

(星印\*)の付いた語には本文の後に注があります。

“Language is a window on the mind”.

(1)

“There is something in the actual act of composing on paper that oils the juices of your cognitive\* processes, so that as you write, ideas take on meaning and shape”.

The two quotes above will form the basis of this analysis, and I shall be referring to them throughout the course of the essay, for they best explain the two greatest functions of writing in contemporary education and society. Language, both spoken and written, is often seen to be a good indicator of a person’s intelligence. We, as a society, make judgements based on what a person says and how well they write. Chomsky believed that by analysing the sentences produced and understood by an individual, we are able to acquire an insight into the knowledge they possess. Literacy is extremely important in contemporary society, and therefore must have a vital role in contemporary education. As Curruthers suggests in the second quotation, writing also generates ideas and aids the growth of the mind, making the act of writing essential in the development of an individual’s mind.

It would be prudent\* at this point to note that, as many linguists have argued, it is virtually impossible to separate reading and writing. The two skills are complementary and the development of each is inseparable from the other. Most importantly, the one supports the other, and strengthens it. Children must understand the code that translates speech into print, to both read and write, for “reading is the way of decoding; writing the way of encoding the sounds of speech into print”. Through both learning to read and to write a child begins to understand the roles language plays.

In today’s literate society, it has become a necessity for an adult to possess at least basic language skills, and the government realises this. In 2001 the ‘Get On Campaign’ was launched, persuading adults to join one of the thousands of

free courses around the country to eliminate their 'gremlins\*' <sup>(4)</sup> for good and improve their literacy and numeric skills. The Minister for Skills and Vocational\* Education, Ivan Lewis, has admitted that <sup>(5)</sup> "There are still too many people who are being held back in their everyday life because of their poor literacy skills". Even if the ability to write is not a requirement in an individual's job, in their daily lives they will come across many occasions when they will <sup>(6)</sup> have to, whether it is filling in a tax form or jotting\* a note to a friend or relative. Illiteracy is hugely detrimental\* to a person and can prevent them from performing many essential tasks.

To give a child the best chance in life therefore, it is essential that they acquire literacy, and that they begin learning at the earliest possible opportunity. Most children's literacy skills start developing at a very young age. Through oral language, children learn to communicate by way of the shared activity of conversation. They learn <sup>(7)</sup> to label objects, and therefore begin to give meaning to the world. Before children learn to write they start to read and be read to, and research has shown that pre-school children that grow up in a household immersed in books and reading and writing activities go on to possess greater literacy skills than those who don't.

(注)

cognitive : relating to thought

prudent : sensible

gremlins : causes of a problem

Vocational : relating to work or job

jotting : writing quickly

detrimental : harmful

1. 下線部(1)の a window on the mind と似た内容の表現を、本文中から探して、その最初の語と最後の語を書きなさい。
2. 下線部(2)を日本語に訳しなさい。

3. 下線部(3)の the code that translates speech into print の内容を, 日本語で説明しなさい。
4. 下線部(4)の for good の意味としてふさわしいものを, 次の(A)~(D)の中から1つ選び, 記号で答えなさい。
- (A) for a short period                      (B) for the good of society  
(C) permanently                              (D) effectively
5. 下線部(5)(引用符 “ ” の内部)を日本語に訳しなさい。
6. 下線部(6)の have to の後には, 解釈上省略されている動詞が1語あると考えられる。その語を本文中から探し出して書きなさい。
7. 下線部(7)の to label objects が表す内容を, 日本語で説明しなさい。
8. 次の中から, 本文の内容と合っていないものを3つ選び, 選択肢の順に記号で答えなさい。
- (A) The act of encoding the sounds of speech into print helps one's mind grow.  
(B) In the country mentioned in this essay, a large number of people cannot read and write.  
(C) Literacy, the ability of reading and writing, is unimportant in contemporary education.  
(D) The children who grow up with a lot of reading and writing activities can acquire greater literacy skills.  
(E) According to many linguists, the skills of reading and writing are independent of each other.  
(F) In general, children begin to develop their literacy skills at a later stage of their growth.

(次ページに第Ⅲ問があります。)

Ⅲ 次の英文は、21世紀における世界の水危機に関する記述である。それを読み、下の問いに答えなさい。

Solving the world's water problems requires, as a start, an understanding of how much freshwater each person requires, along with knowledge of the factors that prevent supply and increase demand in different parts of the world. Malin Falkenmark of the Stockholm International Water Institute and other experts estimate that, on average, each person on the earth needs a minimum of 1,000 cubic meters ( $m^3$ ) of water per year — equivalent to one-third of the volume of a large swimming pool — for drinking, growing food, and for other purposes. 人々が十分な水を得られるかどうかは人々がどこに住んでいるかに依存する,<sup>(1)</sup> because the distribution of global water resources varies widely.

Providing adequate water is especially challenging in drier, underdeveloped and developing nations with large populations, なぜならそれらの地域における需要は高く、供給は少ないからだ.<sup>(2)</sup> Rivers such as the Nile and the Ganges are not only overused, they also now regularly decrease for long periods during the year.

Shortages of freshwater are meanwhile growing more common in developed countries as well. アメリカ合衆国ではひどい日照りで多くの都市が水を求めて競い合っている.<sup>(3)</sup> Symbolic of the problem are the man-made lakes Mead and Powell, both of which are fed by the overstressed Colorado River. Every year the lakes record their ongoing decline with successive high-water marks left on their tall canyon walls like so many bathtub rings.

1. 本文中の表現を参考にして、次の日本語を英語に訳しなさい。ただし、equivalent を使用しないこと。

(日本語) 1,000 立方メートルの水は、オリンピックの水泳プールの容積の5分の2に匹敵する。

2. 下線部(1)~(3)の日本語を英語に訳しなさい。ただし、(3)は Severe droughts ではじめなさい。