

平成 26 年度・入学試験問題

英 語 (前)

注 意 事 項

1. 試験開始の合図があるまで、この問題冊子を開いてはいけません。
2. この冊子は 13 ページあります。
3. 試験開始後、落丁・乱丁・印刷不鮮明の箇所があれば申し出なさい。
4. 解答はすべて解答用紙に、それぞれの問題の指示にしたがって記入しなさい。
5. 解答はとくに指示のない限り日本語で書きなさい。
6. この冊子のどのページも切り離してはいけません。ただし、余白等は適宜利用してかまいません。
7. 試験終了後、問題冊子は持ち帰りなさい。

**問題 I**

次の文章を読み、下の問いに答えなさい。

You may already know that honey bees don't just make honey. They also give us almonds, cherries, avocados, raspberries, apples... pretty much everything delicious. Of course, there are plenty of native pollinators\* that can also do that job. But domestic honey bees (first brought to the American continent in the 1600s) are great for large-scale agriculture for a couple of reasons. First, they live in huge colonies of tens of thousands of bees: one colony can visit 50,000 blossoms in a single day. Second, those colonies can easily be picked up and moved around to wherever they're most needed. So the same bees that are used in February to pollinate\* almonds in California can be moved in April to pollinate cherries and apples in Washington State. Over a million honey bee colonies are moved around the US, going from crop to crop as they come into bloom.

The honey bees in a single colony can actually move among crops in a similar way, but on a much smaller scale. When a bee comes back to the hive\* with a full load of sweet nectar\* or nutritious\* pollen\* (food for bees), she'll do what's known as a "waggle\* dance"—pointing other bees in the direction of the flowers she found.

It's been more than 50 years since Karl von Frisch first figured out what bees were saying with the waggle dance, but we still don't know much about why. What does the colony as a whole gain from dancing—can they collect more food faster, or with less effort? When is the ability to dance most useful? To figure this out, I decided to mess with the bees a bit, and make it so that when they danced, it came out <sup>(1)</sup> gibberish\*. Then I asked how this affected how much food the whole colony could collect. What I found was that dancing was much more important for large colonies than it was for small ones. This is because a large colony can send out hundreds or even thousands of bees to search the landscape in parallel, getting lots of information very quickly. If

any one of those searchers finds a lush\* patch\* of flowers, she can do a dance back at the nest and recruit plenty of other bees to help her collect pollen and nectar from those flowers. I also found that dancing was most important when a wide variety of flowers were in bloom. So, particularly when there is a nice mix of different types of flowers available, the bees in one big colony can actually move themselves around among different flower patches as they come into bloom.

出典 Matina Donaldson-Matasci, *Honeybees and Monoculture: Nothing to Dance About* (Scientific American Guest blog, 2013) を一部修正

\*注

pollinator : 花粉を運ぶ昆虫

pollinate : 授粉する

hive : ミツバチの巣箱

nectar : 花の蜜

nutritious : 栄養のある

pollen : 花粉

waggle : 尻を振る

gibberish : 訳の分からない

lush : 茂った

patch : 畑

問 1 ミツバチが大規模農業に最適である理由は何か。70字以内で2点、日本語で書きなさい。

問 2 Karl von Frisch が50年以上前に解明したことは何か。その内容を40字以内で具体的に、日本語で書きなさい。

問 3 下線部(1)がこの文章で意味している内容と類似の意味をもつ単語はどれか、記号で答えなさい。

(ア) collect

(イ) confuse

(ウ) develop

(エ) emphasize

(オ) regulate

問 4 著者がミツバチを観察して発見したことは何か。70字以内で2点、日本語で書きなさい。

**問題Ⅱ** 次の文章を読み、下の問いに答えなさい。

All my life I have wondered about the possibility of life elsewhere. What would it be like? Of what would it be made? All living things on our planet are constructed of organic molecules — complex microscopic architectures in which the carbon atom plays a central role. There was once a time before life, when the Earth was barren and utterly desolate. Our world is now overflowing with life. How did it come about? How, in the absence of life, were carbon-based organic molecules made? How did the first living things arise? How did life evolve to produce beings as elaborate and complex as we, able to explore the mystery of our own origins?

And on the countless other planets that may circle other suns, is there life also? Is extraterrestrial\* life, if it exists, based on the same organic molecules as life on Earth? Do the beings of other worlds look much like life on Earth? Or are they stunningly\* different — other adaptations to other environments? What else is possible? The nature of life on Earth and the search for life elsewhere are two sides of the same question — the search for who we are.

In the great dark between the stars there are clouds of gas and dust and organic matter. Dozens of different kinds of organic molecules have been found there by radio telescopes. The abundance of these molecules suggests that the stuff of life is everywhere. Perhaps the origin and evolution of life is, given enough time, a cosmic inevitability\*. On some of the billions of planets in the Milky Way Galaxy, life may never arise. On others, it may arise and die out, or never evolve beyond its simplest forms. And on some small fraction of worlds there may develop intelligences and civilizations more advanced than our own.

Occasionally someone remarks on what a lucky coincidence it is that the Earth is perfectly suitable for life — moderate temperatures, liquid water, oxygen atmosphere, and so on. But this is, at least in part, a confusion of

cause and effect. We earthlings\* are supremely well adapted to the environment of the Earth because we grew up here. Those earlier forms of life that were not well adapted died. We are descended from the organisms that did well. Organisms that evolve on a quite different world will doubtless sing its praises, too.

All life on Earth is closely related. We have a common organic chemistry and a common evolutionary heritage.<sup>(5)</sup> As a result, our biologists are profoundly limited. They study only a single kind of biology, one lonely theme in the music of life. Is this faint and reedy\* tune the only voice for thousands of light-years? Or is there a kind of cosmic fugue\*, with themes and counterpoints, dissonances and harmonies, a billion different voices playing the life music of the Galaxy?

出典 Carl Sagan, *Cosmos Chapter II One Voice in the Cosmic Fugue* から  
抜粋

\*注

extraterrestrial : 地球外

stunningly : 驚くほど

inevitability : 不可逆的なこと, 必ず起こること

earthling : 地球人

reedy : 弱い

fugue : フーガ(音楽用語)

問 1 下線部(1)の英文を日本語に訳しなさい。

問 2 下線部(2)の英文を日本語に訳しなさい。

- 問 3 下線部(3)の the stuff of life は具体的には何を指すのか，本文中で使用されている最適な英語の語句を抜き出さない。
- 問 4 下線部(4)の a confusion of cause and effect とは具体的に何を意味するのか，60 字以内の日本語で説明しなさい。
- 問 5 下線部(5)にある heritage は，この文章の中で何を意味するのか，最適な語句を下記より選び，記号で答えなさい。
- (ア) microscopic architectures
  - (イ) intelligences and civilizations
  - (ウ) history of adaptations to the environment
  - (エ) the mystery of our own origins
  - (オ) the stuff of life

### 問題Ⅲ

次の文章を読み、下の問いに答えなさい。

“Young people ought not to be idle. It is very bad for them,” said <sup>(1)</sup> Margaret Thatcher in 1984. She was right: there are few worse things that society can do to its young than to leave them with no choices for the future. Those who start their careers on the dole\* are more likely to have lower wages and more times of joblessness later in life because they lose out on the chance to acquire skills and self-confidence in their formative years.

Yet more young people are idle than ever. Organization for Economic Co-operation and Development (OECD) figures suggest that 26 million youths between the ages of 15 and 24 in developed countries are not in employment, education or training; the number of young people without a job has risen by 30% since 2007. The International Labour Organisation reports that 75 million young people globally are looking for a job. World Bank surveys suggest that 262 million young people in emerging markets\* are economically inactive. Depending on how you measure them, the number of young people without a job is nearly as large as the population of America (311 million).

Two factors play a big part. First, the long economic slowdown in the West has reduced demand for labour, and it is easier to put off hiring young people than it is to fire older workers. Second, in emerging economies population growth is fastest in countries with dysfunctional labour markets, such as India and Egypt.

The result is an “arc of unemployment”, from southern Europe through north Africa and the Middle East to South Asia, where the rich world’s economic slowdown meets the poor world’s youth crisis. The anger of the young jobless has already burst onto the streets in the Middle East. Violent crime, generally in decline in the rich world, is rising in Spain, Italy and Portugal — countries with startlingly high youth unemployment.

The most obvious way to tackle this problem is to restart growth. That is



easier said than done in a world suffering from debt, and is anyway only a partial answer. The countries where the problem is worst (such as Spain and Egypt) suffered from high youth unemployment even when their economies were growing. Throughout the economic slowdown companies have continued to complain that they cannot find young people with the right skills. This underlines the importance of two other solutions: reforming labour markets and improving education. These are familiar solutions, but ones that need to be delivered with both a new vigour and a new twist.

Youth unemployment is often at its worst in countries with rigid labour markets<sup>(2)</sup>. Cartelised industries, high taxes on hiring, strict rules about firing, high minimum wages: all these help condemn young people to the street corner. South Africa has some of the highest unemployment south of the Sahara, in part because it has powerful trade unions and rigid rules about hiring and firing. Many countries in the arc of youth unemployment have high minimum wages and heavy taxes on labour. India has around 200 laws on work and pay.

Deregulating\* labour markets is thus central to tackling youth unemployment. But it will not be enough on its own. Britain has a flexible labour market and high youth unemployment. In countries with better records, governments tend to take a more active role in finding jobs for those who are struggling. Germany, which has the second-lowest level of youth unemployment in the rich world, pays a proportion of the wages of the long-term unemployed for the first two years. The Nordic countries provide young people with “personalised plans” to get them into employment or training. But these policies are too expensive to reproduce in southern Europe, with their millions of unemployed, let alone the emerging world. A cheaper approach is to reform labour-hungry parts of the economy — for example, by making it easier for small businesses to get licences, or construction companies to get approval for projects, or shops to stay open in the evening.

Across the OECD, people who left school at the earliest opportunity are twice as likely to be unemployed as university graduates. But it is unwise to conclude that governments should simply continue with the established policy of boosting the number of people who graduate from university. In both Britain and the United States many people with expensive liberal-arts degrees are finding it impossible to get decent jobs. In north Africa university graduates are twice as likely to be unemployed as non-graduates.

What matters is not just the number of years of education people get, but  
(3) its content. This means expanding the study of science and technology and closing the gap between the world of education and the world of work—for example by upgrading job training and technical education and by creating closer relations between companies and schools. Germany's long-established system of technical schooling and job training programs does just that. Other countries are following suit: South Korea has introduced specialist training, Singapore has created more technical colleges, and Britain is expanding training programs and trying to improve technical education.

Closing the gap will also require a change of attitude from business. Some companies, ranging from IBM and Rolls-Royce to McDonald's and Premier Inn, are improving their training programs, but the fear that employees will be stolen by other companies discourages firms from investing in the young. There are ways of getting around the problem: groups of employers can cooperate with colleges to design training courses, for example. Technology is also reducing the cost of training: programs designed around computer games can give youngsters some virtual experience, and online courses can help apprentices combine on-the-job training\* with academic instruction.

出典 *The Economist* April 27th 2013 を一部修正

\*注

dole : 失業手当

emerging markets : 新興国市場

deregulate : 規制を緩和する

on-the-job training : 職場内トレーニング

問 1 下線部(1)についてその理由を日本語で記述しなさい。

問 2 著者が指摘している若者の失業問題の解決策を 3 つ指摘し日本語で記述しなさい。

問 3 下線部(2)の特徴を日本語で列挙しなさい。

問 4 下線部(3)について、日本語で具体的に説明しなさい。

問 5 Choose three statements from the list below which are true according to the article.

- (ア) The number of young people out of work in the world is not nearly as big as the population of America.
- (イ) Economic growth is the best way of solving young people's unemployment.
- (ウ) Many young jobless in emerging countries are satisfied with the economic and social situation.
- (エ) Three key points to solve the problem of unemployment among the youth are government, companies and technology.
- (オ) Southern Europe is capable of introducing the social plans practiced in the Nordic countries.
- (カ) Britain has a flexible labour market, and high youth unemployment.
- (キ) Germany is one of the countries which has succeeded in diminishing unemployment among the youth by applying traditional job training systems and the cooperation of the academic and business world.
- (ク) The problem of the young jobless generation is only seen in rich countries during these times of economic slump.

問題IV

Many people say that each generation has its own experiences and unique set of life challenges. What are some of the major ways in which your generation is different from the generation that came before it? Give reasons and explanations to support your ideas.

To answer this question, write an essay of 120-150 words in English.