

英 語

注 意

1. 問題は全部で17ページである。
2. 解答用紙に氏名・受験番号を忘れずに記入すること。(ただし、マーク・シートにはあらかじめ受験番号がプリントされている。)
3. 解答はすべて解答用紙に記入すること。
4. 問題冊子の余白等は適宜利用してよいが、どのページも切り離してはいけない。
5. 解答用紙は必ず提出のこと。この問題冊子は提出する必要はない。

マーク・シート記入上の注意

1. 解答用紙(その1)はマーク・シートになっている。HBの黒鉛筆またはシャープペンシルを用いて記入すること。
2. 解答用紙にあらかじめプリントされた受験番号を確認すること。
3. 解答する記号・番号の○を塗りつぶすこと。○で囲んだり×をつけたりしてはいけない。

解答記入例(解答が1のとき)

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4. 一度記入したマークを消す場合は、消しゴムでよく消すこと。×をつけても消したことになる。
5. 解答用紙をよごしたり、折り曲げたりしないこと。

I 次の文章を読んで、文字体系の発達プロセスを、文章中の具体例を挙げながら160字以上180字以内(句読点を含む)の日本語でまとめて下さい。解答用紙(その2)を使ってください。

Language in its spoken form is a natural phenomenon, common to all human groups. Writing, however, is the achievement of only some (historically, by far the minority of) cultures. At a particular stage in the history of certain cultures, there developed the need to make records of transactions of various kinds, associated usually with trade, religion or (governing) power. These records were initially highly iconic. For instance, the number of notches in a stick would represent the number of objects stored or traded or owed. The representation of the object would usually also be transparent: the hieroglyphic image of the ox's head which initially stood for 'ox' eventually became the letter *aleph* (𐤀), *alpha* (α), *a*.

Alphabetic writing developed, it seems clear, out of iconic, image-based scripts. In these original script forms, an object was initially represented by an image of that object. Over time, in the use of the script by different groups, speaking different languages, the image of the object came to stand for the name of the object and then for its initial letter. *Aleph*, 'ox' in Egyptian hieroglyphics, after centuries of travel and constant transformation through the cultures and languages of the eastern Mediterranean, became the letter *alpha*, and eventually the letter *a* in the Roman alphabet.

II Write an essay of not more than 60 words in English in which you answer the following question and give reasons to support your answer: If you could do one thing to change the world, what would it be? 解答用紙(その2)を使ってください。なお、句読点は語数に含まれません。

III 次の3つのパラグラフ(A～C)を読んで、下記の設問の答えとして最も適当なものをそれぞれ[a]～[c]の中から1つ選び、解答用紙(その1)にマークして下さい。

A. The most important quality¹ is a healthy curiosity and the desire to understand. The political scientist is an asker of questions and a seeker of truth. The questions posed must be answerable, at least in principle. Training in political science is a matter of becoming more skilled in asking questions and in finding the material for answering them. For those subfields that touch on quantitative matters, such as economic policy or public opinion polling, skill with statistics is essential. In more philosophical subfields, ability to analyze abstract logical relationships and to present reasoned and persuasive arguments is a valuable skill. In fields like international relations, fluency and facility in a particular foreign language and ability to adapt to different cultures is often very helpful. In order to secure a university position as a political scientist, some degree of formal study is normally required. This typically means at least some post-graduate work in a university. In many countries this process culminates² in the completion of a dissertation and the granting of a doctorate. For some non-university positions, such as with a government agency or a “think tank,” a doctorate might not always be required. The requirement will vary depending on the needs of the particular agency or organization. One should never just assume that a doctorate is an absolute prerequisite for a particular job.

Notes

¹the most important quality = the most important quality to be a political scientist

²culminate = reach a climax or point of highest development

1. What is the main idea of this passage?
 - [a] The various qualifications which a person who wishes to become a political scientist may need to acquire.
 - [b] Why skills with statistics are necessary for political scientists who work on economic policy or do public opinion polling.
 - [c] The importance of learning a foreign language and being able to adjust to other cultures for political scientists who work in international relations.

2. Which of the following qualifications are typically necessary for political scientists who teach at universities but perhaps unnecessary for those who work in non-university positions?
 - [a] Being inquisitive and trying to gain knowledge.
 - [b] Searching for the truth by asking questions that can be potentially answered.
 - [c] Writing a dissertation and obtaining a doctorate in political science.

B. Robots are becoming “smarter” over time. Many new models have the ability to learn, and advances in artificial intelligence will only accelerate the value of these robots. As a result, robots are increasingly preferred over humans, especially for routine, difficult/dangerous, or menial types of jobs. Indeed, robots are better at work that is “dull, dangerous and dirty.” The “hourly wage” of a robot such as Baxter has been reported to be around US\$4.32 per hour, less than the average hourly wage of US\$23.32 paid to humans in US manufacturing. Robots already perform about 80% of the world’s automobile manufacturing.

As for the overall impact on employment, Frey and Osborne estimated (in 2013) that 47% of current jobs in the US are likely to be replaced by computers over the next twenty years. This trend is not confined only to

advanced economies like the US, but also is affecting emerging economies. Frey et al. (2016) estimate that up to 66% of all jobs in developing countries are at risk. And developing countries are not only passive players in the New Industrial Revolution; they are increasingly taking part in the production of robotics. The International Federation of Robotics estimates that there will be more robots in China than in the US or Europe by 2017. India is approaching the top ten in markets for sales of robotics. Indeed, according to Sirkin, “the countries moving ahead most aggressively — installing more robots than would be expected given their productivity-adjusted labor costs — are emerging markets.”

1. Which statement is consistent with this passage?

- [a] Robots have improved to the point that they are now capable of learning and are even more intelligent than humans in all respects.
- [b] Jobs that humans find to be “dull, dangerous and dirty” can generally be performed better by robots than by humans.
- [c] The main reason why most manufacturing in the automobile industry is done by robots is that it costs companies more to use robots than to hire humans.

2. What can be inferred from the passage?

- [a] Many jobs in developing countries will not be replaced with advanced technology while those in developed countries will.
- [b] Emerging countries are becoming more active players in the New Industrial Revolution and installing more robots than expected.
- [c] More than 60% of all jobs in developing countries will be taken over by robots manufactured by developed countries.

C. For the longest time, hunters have been enemy No. 1 for some of the world's most precious wildlife. Snow leopards in Siberia are a case in point. Poachers have hunted snow leopards for decades for their fur, which fetches a high price on the black market. These graceful animals had long been on the endangered list, until the World Wildlife Foundation decided to turn the tables on the poachers. In 2015, the WWF paid six poachers to help protect the animals they had once killed, by utilizing their unique methods of tracking and trap-setting to help monitor the animals. The plan worked: In just two years, the snow leopard population in Sailugemsky National Park shifted from "endangered" to "vulnerable." In some parts of Siberia, their numbers are actually growing.

Behind this move is the reality that poachers worldwide are driven to hunt for rare animals to feed their families. But now that poachers in Siberia have been hired by the WWF, the whole scene is on the brink of change. In a news report, ex-poacher Mergen Markov professes that he once had no choice but to hunt snow leopards for his livelihood. But now he's traded in his gun for a camera and tripod to track and monitor the snow leopards' movements. "We will save so many snow leopards, even my grandchildren will be able to see them," said Markov. The program was so successful that the WWF has plans to do the same in neighboring Kyrgyzstan and Tajikistan.

1. Based on the passage, which phrase best completes the sentence below?

In Siberia, poachers once hunted snow leopards but now _____.

- (a) they have traded in their guns for the fur of the snow leopards.
- (b) they help protect snow leopards.
- (c) they are approachable grandfathers.

2. Why did poachers hunt Siberian snow leopards in the past?

{ a } Because poachers could make a lot of money by illegally selling fur from snow leopards.

{ b } Because the World Wildlife Foundation finally decided to take snow leopards off the endangered species list.

{ c } Because the number of snow leopards in Siberia had been increasing and they were no longer considered vulnerable.

IV 次の文章を読んで、下記の文(1～10)が本文の内容と合致している場合には T、合致していない場合には F として、**解答用紙(その1)**にマークしてください。

While a 'graying' of the population is occurring in such countries as Japan, Greece and Finland, other parts of the world, especially much of Africa, are experiencing a quite different trend. The contrast that exists between the oldest and youngest populations of the world is rather stark. In Japan, known to have the world's largest oldest population, only 13% of its citizens are under 15. The situation in Niger has been found to be the opposite, with a full 56.9% of its population under 18 years old, the highest percentage of citizens within that category of any nation in the world. An analysis of the youngest populations in the world, and forecasts for future changes, have been presented by the United Nations (UN). The UN data leads us to look at Africa as the continent where countries have more people under 18 than on any other continent in the world. What's worse is that the youth population on the African continent is projected to double by 2050, which will place more and more stress on already strained resources for the region.

As statistics confirm, the country with the highest percentage of its population 18-years-old or younger is Niger, with a full 56.9% of its population being made up of such youth. This lopsided age-group demography in Niger has been correlated to an inclination of having larger-sized families within the culture there and a lack of access to contraceptive measures. For the record, an average woman in Niger has around 8 children. This explosion among the younger population can lead to serious trouble within the country as it continues to fight against an already difficult poverty trap. Next on the list is Uganda, with its citizens under 18 years of age constituting 55% of the country's entire population. The reasons behind this boost in the Ugandan youth population are much the same as those seen in Niger (a lack of access

to contraception and a general inclination towards having larger families). What makes matters worse is the fact that unemployment among the youth is also extremely high in Uganda. If things persist this way, the growing youth population and their unemployment will place immense pressure on Uganda's resources.

Next in line on this list is Chad, where the proportion of the population under 18 years in age comprises 54.6% of its total population. As one of the poorest countries in the world, its ever-growing youth population is a major problem. The reasons why Chad has so many youth citizens include low levels of education for women, women's lack of control over reproduction decisions and a lack of access to effective family planning assistance. As a landlocked nation, Chad apparently has a life expectancy of only 51.18 years, with the employed there earning around a meager \$1,621 a year. Let's not forget that unemployment is also a major problem for the country that needs to be resolved so this large group of youthful citizens can contribute towards Chad's continued development.

Other countries that have made it onto our list of countries with the highest percentages of citizens under 18-years-old include Angola, Mali, Somalia, Gambia and Zambia. These African countries have youth citizenry proportions of 54.3%, 54.1%, 53.6%, 52.8% and 52.6% of the total population, respectively. Within many of them, the reasons behind these high percentages are much the same as discussed above, including lack of education, lack of access to effective birth control and a general inclination towards having larger-sized families. The only non-African country nearing the top of this list is Afghanistan, with a relative youth population of 51.4%.

These spikes in youth populations among the countries mentioned above are a major problem that will likely grow worse yet still. What makes matters worse is that poverty and unemployment are also fairly prominent in these countries, which adds to the reasons why this boom in citizens under 18 is so

problematic for them, as they will have less and less to work with as they start their own lives and careers as adults. To reduce these statistics, it is necessary for the governments of these countries to make access to both education and birth control easier for their citizens, and persuade their citizenries to reconsider cultural norms regarding family size and planning. These young people also will need jobs and economic opportunities as they grow older, and, as their respective countries' populations continue to grow, simply spreading what little wealth is already available will simply not be an option.

1. While 'graying' is a problem in some countries, such as Japan, Greece and Finland, other countries, particularly in Africa, have the opposite problem, namely that the percentage of younger people is higher than the percentage of older people.
2. The United Nations predicts that the youth population on the African continent will decrease by more than half by the middle of the twenty-first century.
3. The main reasons why Niger has such a large youth population are that there is a tendency in Niger for people to have large families and that birth control measures are not readily available.
4. The passage suggests that having a large number of young people is beneficial for countries such as Niger and Uganda because it creates more jobs, allows resources to be developed more fully and helps to lift people out of poverty.

5. Chad is an exception to the trend found in other African countries because its attempts to improve education for females and to allow women to choose how many children they want have been mostly successful.
6. Because people in Chad tend to have relatively short lives and income levels are comparatively low, there are already many employment opportunities for the large population of young people in the country, which will undoubtedly contribute to its economic growth.
7. Other countries in Africa, including Angola, Mali, Somalia, Gambia and Zambia, also have high percentages of citizens who are under the age of 18 because they suffer from more or less the same problems as the African countries discussed previously in the article.
8. Afghanistan has been able to reduce its population of young people to levels that are similar to those found in countries such as Japan, Greece and Finland because there is a tendency in Afghanistan for people to be highly educated, to use contraceptives and to have smaller families.
9. The passage suggests that it will be necessary for countries which will have an even greater number of young people in the future to provide a sufficient number of jobs for them when they become adults.
10. In the author's opinion, the most effective way for countries with growing youth populations to solve the problem is not to encourage people to change their attitudes about families but rather to distribute wealth more equally so that everyone has enough money to get a good education and obtain birth control.

V 次の文章を読んで、下記の設問の答えとして最も適当なものをそれぞれ[a]～[c]の中から1つ選び、解答用紙(その1)にマークしてください。

After so many years of being told the same thing, it is barely surprising that we believe it. Economic growth is good, we are told, and essential to all we do. Growth creates work. Work creates wealth. Wealth closes the gap between rich and poor.

Once we have a stronger economy, the economists say, we can tackle our environmental problems.

The only trouble is, this is all wrong.

The way the current economic system is designed, it¹ does the opposite. The constant drive to increase productivity, which is what economic growth really is, requires manufacturers to steadily reduce input costs. Economic growth destroys jobs.

Before the 1980s this didn't matter much, because many new manufacturing businesses were established to soak up a rising working population. Since then, though, this has not happened — growth has increased the number of people without jobs, certainly in the rich world.

In the last 35 years, the world has experienced the fastest economic growth in human history. Yet, according to the Organisation for Economic Co-operation and Development (OECD), unemployment went up.

Because the system is designed to reward those who already have money and assets, the free market economic model takes wealth from the poor and gives it to the rich. The gap between the rich and poor is bigger today than in 1914. The gap between rich countries and poor ones is also much greater.

The coming wave of new technology will make these problems worse. A study on the future of employment at Oxford University predicts that almost half of all jobs are at threat from robotisation in the next 20 years. Many of these are highly skilled jobs, such as those done by pilots, doctors, accountants

and lawyers. The jobs that will be left are those that require a great deal of personal attention or artistic input — in other words, those that are generally poorly paid.

Boosting growth is not the way to solve environmental problems. Economic growth is the cause of them. It requires a constant increase in the flow of raw materials extracted from the planet to be turned into goods, services and waste. The more we grow, certainly using current economic thinking, the more resources we need to use and the more pollution we create.

Rather than pursuing economic growth then, we should tackle our problems head on. We should develop policies to ensure that everyone has enough money to live on, because it leads to healthier and more stable societies. We should plan to reduce the gap between rich and poor, and we need to stop prevaricating² when it comes to the environment and actually do something.

None of this is as hard as it might appear, because the social troubles in the rich world have nothing to do with the overall level of economic activity. It is the way the proceeds are distributed that is the problem, and our single-minded belief in the need for growth that is wrong.

If we take the gross domestic product of the OECD³ and divide it by the population, we already generate enough income for everyone to live comfortably. If we start to design and make products that last longer, as well as make them more recyclable, we can drastically reduce the turnover of resources as well as the pollution.

And we can do all this and actually increase the average standard of living. We just need to share the work around more evenly and start making and using products differently.

Taking a different approach to economic development will be fiercely opposed by all those who benefit from the current system. Yet a radical change in approach is both possible and necessary.

Notes

¹it = economic growth

²prevaricating = acting in an evasive way or avoiding the issue

³the OECD = countries belonging to the OECD

1. Which of the following statements best expresses the author's view of economic growth?

[a] The conventional wisdom about economic growth is correct because having a strong economy is the best way to eliminate unemployment, reduce income differences and deal with environmental issues.

[b] The main problem is not with economic growth itself, but rather with the fact that most people have the wrong opinion about economic growth, believing that it does the opposite of what economists say it does.

[c] Even though we have been told for many years that economic growth is good, the fact that businesses constantly seek to improve efficiency and reduce the cost of making products means that economic growth ultimately destroys rather than creates jobs.

2. What effect has economic growth had on working people?

[a] It has been primarily beneficial since companies have consistently been able to create new jobs even though the population has been growing.

[b] It has been largely negative since there is a connection between increases in economic growth and increases in unemployment, at least in wealthy countries.

[c] It has always been neutral since the rapid economic growth the world has experienced in the past few decades canceled out the economy's poor performance prior to the 1980s.

3. What is the current free market economic system designed to do?
- [a] It is designed to increase the wealth of rich people at the expense of poor people.
 - [b] It is designed to overcome differences between rich and poor in terms of money and assets.
 - [c] It is designed to reduce inequalities between rich and poor countries.
4. According to the study conducted by Oxford University, how might new technology affect the future of employment?
- [a] An increase in the use of robots may eliminate close to 50 percent of all jobs.
 - [b] Highly skilled jobs will be in greater demand since they cannot be performed by robots.
 - [c] Jobs which require individual care and creative thinking will be increasingly done by robots.
5. What is the relationship between economic growth and environmental problems?
- [a] The only way that environmental problems can be solved is to increase the amount of resources that are used to produce what we need.
 - [b] Growth will not affect the environment adversely if we maintain our current way of thinking about the economy.
 - [c] Economic growth depends on taking more raw materials from the planet, which leads to the destruction of the environment and increased pollution levels.

6. Which of the following is recommended in the passage?
- [a] The income levels of the poor should be increased to the same level as the rich so that everyone can live in healthier, more stable societies.
 - [b] The income levels of rich people should be lowered to those of poor people since poor people consume fewer goods and services than rich people.
 - [c] Instead of simply discussing environmental problems, concrete plans should be implemented which effectively solve those problems.
7. Which of the following statements is INCONSISTENT with the author's opinion?
- [a] The reason why there are so many social problems in developed countries is that the imperative of economic growth has been abandoned in favor of the view that benefits should be shared more equally.
 - [b] If the total amount of money generated in the economies of OECD countries were distributed equally among all of their residents, no one would have an insufficient standard of living.
 - [c] One way to consume fewer resources and decrease pollution levels would be to create and manufacture products that are more durable and made from materials that can be reused.
8. What is the one potential obstacle to achieving the kind of economy envisioned by the author?
- [a] While it is easy to raise living standards, distributing jobs more fairly and creating new products with different uses might be difficult.
 - [b] People who profit from the present economy may be against any new form of development which takes away their advantages.
 - [c] The author recognizes that his ideas are too radical, even though they are both achievable and vitally important.

VI 次の文章の(1～10)の空所に入れるのに最も適当なものを下記の〔a〕～〔j〕の中から1つ選び、解答用紙(その1)にマークしてください。ただし、各単語は1度しか使えません。また、文頭に来る単語も選択肢の中では小文字で表記されています。

For neuroscientists, human hearing is a process full of unanswered questions. How does the brain translate sounds—vibrations that travel through the air—into the (1) of neural activity that we recognize as speech, or laughter, or the footsteps of an approaching friend? And (2) those same neural processes universal, or (3) they vary across cultures?

Massachusetts Institute of Technology professor Josh McDermott is leading a research team seeking (4) answer those questions. Their work lies at the intersection of psychology, neuroscience and engineering.

To identify (5) there are aspects of auditory perception that are universal across cultures, McDermott and his team have traveled into places ranging (6) Boston to remote Amazonia, where they record sounds ranging from the clatter of a noisy diner to the stillness of a woodland path.

McDermott spends much of his time studying (7) the brain processes sound. A typical day finds him reviewing results from experiments (8) human brain imaging, particularly functional magnetic resonance imaging, or fMRI. This line of research has revealed that the human auditory cortex contains neurons that respond selectively to music— not to speech or environmental sounds.

This work has shown that sound processing in the auditory cortex happens in stages, (9) with the analysis of low-level features, such as loudness and pitch. That processing proceeds step-by-step into higher-level features, such as the source of the sound production (for example, whether the sounds are produced by speech) and the (10) of the person or thing producing the sound.

[a] beginning

[b] from

[c] patterns

[d] to

[e] whether

[f] are

[g] how

[h] involving

[i] do

[j] identity

