H—18 Ⓐ

英　　語

15：30～17：00

解　答　上　の　注　意

1. 試験開始の合図があるまで，この問題紙を開いてはならない。
2. 問題紙は 15 ページある。
3. 解答用紙は | 解答用紙番号 / 英語 0—1 | と | 解答用紙番号 / 英語 0—2 | の 2 枚である。
4. 解答用紙は 2 枚とも必ず提出せよ。
5. **受験番号および座席番号（上下 2 箇所）は，監督員の指示に従って，すべての解答用紙の指定された箇所に必ず記入せよ。**
6. 解答はすべて解答用紙の指定された欄に記入せよ。
7. 必要以外のことを解答用紙に書いてはならない。
8. 問題紙の余白は下書きに使用してもさしつかえない。

◇M1(622—1)

1 **Read the following text and answer questions 1 to 6 below.**

The creation of the European Union was intended to prevent a repetition of the two world wars that caused so much suffering in Europe. The EU started in 1952 as the European Coal and Steel Community. At that time it had only six members, but by 2005, the EU had 25 member states with a total population of 500 million people. The integration of Europe is now very advanced: there is an EU Commission, an elected parliament and a common currency, the Euro (although some countries like Britain still have their own national currency).

The success of the European Union in healing the wounds of the world wars and the economic benefits it brings to member states have prompted some people to ask if an Asian Union would be possible. There are already a number of regional organizations in Asia, such as APEC, as well as global organizations such as the World Trade Organization that provide opportunities for Asian leaders to meet and discuss trade and diplomatic issues. However, an Asian Union would be a bold, new step towards regional integration.

But how realistic is the suggestion(1)? Some of the conditions that make the European Union possible already exist in Asia. The European Union is built on a strong basis of common culture and values. Whereas there are many different languages (a) in Europe, the Roman alphabet is used throughout Western Europe, and many languages have common roots (such as the Germanic languages of English and German or the Romance languages such as French, Italian and Spanish). Also, Christianity is a common aspect of European culture, even though Europe has often been (b) apart by religious wars.

Similarly, common values and culture exist in Asia. Indeed, the former Malaysian Prime Minister Mohammed Mahathir frequently used the term "Asian values" and has (c) a distinct Asian model of development in

contrast to the Western model. In terms of culture, Chinese characters form the basis of a number of writing systems across East Asia; and even when Chinese characters are no longer used (such as in Hangul), the roots of some Korean words can still be clearly traced back to Chinese characters. Furthermore, Buddhism and Confucianism are common religious and philosophical elements that could (d) Asia together.

One of the major obstacles to an Asian Union would be the current differences in the developmental levels of the potential member states. Japan, for example, is significantly wealthier than Cambodia or even China. It is hard to see how Asia could introduce a free labor market without economic migrants from poorer nations flooding into Japan, Taiwan and Korea to look for work. Even so,(2) this is a problem that Europe has managed to deal with. There are substantial differences in income in much of Western Europe compared to the newest members which were formerly in the Soviet bloc.

But perhaps the one factor that makes an Asian Union an impossibility for the time being(3) is population. The Chinese population on its own is over twice the size of the European Union. One of the continual issues within the expansion of the EU is whether there is a size at which large-scale political union becomes impractical. The break-up of the Soviet Union, it could be argued, was an example of why it is not a good idea to have political or economic union among too many diverse states and peoples.

In particular, one of the challenges facing the Chinese state is how to keep together a country that is not only undergoing incredible economic transformation, but also is developing in such an uneven way. The coastal cities are booming but the rural interior is (e) depopulation as economic migrants head to the cities. It is possible that economic and ethnic divisions within China could cause the break-up of China. If this happens, talk of an Asian Union would become meaningless. It could be argued that the survival of the Chinese state during the 21st century might be an achievement of "Asian Union" that far exceeds what the European Union has managed.

Question 1

Choose the most suitable word from the box [ ] below to fill in (a) through (e) in the text. Change the form if necessary.

bind, experience, speak, stress, tear

Question 2

What does the suggestion (1) refer to? Quote the most appropriate part from the second paragraph in English (in 7 words).

Question 3

In the third and fourth paragraphs, the author suggests that similar conditions are observed in the EU member states and in potential members of the "Asian Union." Put ONE appropriate word in [A] through [D] to complete the following chart.

	European Union	"Asian Union"
model	Western model	Asian model
writing system	Roman alphabet	[A] [B]
[C] or philosophy	Christianity	[D] and Confucianism

Question 4

Explain what so (2) in the fifth paragraph means in Japanese.

Question 5

Translate the underlined sentence (3) into Japanese.

Question 6

Of the following statements (A) to (G), choose the THREE false statements, according to the text.

(A) Asia already has organizations to discuss regional and global problems.

(B) The collapse of the Soviet Union could be a lesson for not having too large a community with different regions and peoples.

(C) The creation of the European Union resulted in the tragedy of two world wars.

(D) The long-term existence of the Chinese state is probably necessary for any future discussions of Asian Union.

(E) It is not true that every EU country uses the same money.

(F) More than 1, 000 million people live in the coastal regions of China.

(G) The survival of the Chinese state in this century might be easier than the creation of the European Union.

2 **Read the following text and answer questions 1 to 5 below.**

In April 1965 Gordon Moore made one of the most famous statements in the modern history of technology and computing. He claimed that the number of parts on a silicon chip would double every two years. This means that computers can become faster and products using chips can become more powerful with more functions. Dr. Moore went on to be highly successful in the computing business: he is the co-founder of chip maker Intel and his statement became known as "Moore's Law."(1) Chips have become cheaper as well as more powerful and this has contributed to ever faster computers, networks and storage devices. Without chips which continually improve their performance and shrink in size,(2) (a).

When Dr. Moore wrote his 1965 article, ICs (integrated circuits) had only 30 components in them. "Integrated circuit" is the term used to describe the collection of electronic parts on a piece of semiconducting material (a substance that allows some electricity to pass through it). Over the past forty years his law has proven to be extremely accurate: between 1971 and 2001, the number of transistors on a chip doubled every 1.96 years.

Moore's Law may continue to be true for at least another decade, but at some point chips will get faster more slowly.(3) Even now, the improvement of chips faces two serious technical problems. Firstly, the more densely transistors are packed onto chips the hotter they get. Intel's chips will soon reach the energy density of a nuclear reactor and most people do not want to have a small nuclear reactor on their desk at home or in the office. At the moment this simply means that modern laptops can get very hot, but in the future these devices could become dangerous. A second and more serious threat to Moore's Law comes from the manufacturing process. Circuit patterns are printed onto silicon chips by shining focused light onto them. If manufacturers want to continue to put more and more circuits on their chips,

they need to find a way of making the light beam they use narrower. The narrower the light, the smaller the circuit that is printed and hence, more circuits can be fitted onto a tiny piece of silicon. However, current technology cannot print lines narrower than 0.1 micron (one tenth of a millionth of a meter). In other words, when the limit of 0.1 micron is reached, chip technology will have come to its physical limit. In the semiconductor industry, this limit is known as "the wall."

So, what is the solution to these technological problems? Perhaps the most exciting alternative comes in the form of nanotechnology. Basically, nanotechnology will allow humans to control matter on a tiny scale. The smallest possible scale is the atomic level and if humans could control atoms we would be able to make incredibly small chips and computers. This is what nanotechnology is all about: the control of matter at the atomic level.

In 1981 IBM took the first practical step toward making nanotechnology a reality by making a new microscope. The microscope was so powerful it allowed researchers to see atoms and molecules for the first time. Scientists had talked and written about working at this atomic level before, but they had to wait until IBM's invention to make it possible. Now that scientists can see at this atomic level it may be possible to control atoms, move them around and build products from the atomic level. This would allow humans to make virtually perfect materials and products, atom by atom. Many scientists believe that nanotechnology will become as important as electricity, that it will allow the creation of new materials and products and great advances in electronics, energy and medicine. It would certainly allow chips to become smaller and more powerful than Gordon Moore ever imagined and get his law beyond "the wall."

Notes

nuclear reactor: 原子炉

molecule: 分子

Question 1

Translate into Japanese the part of the first paragraph which states (1) "Moore's Law."

Question 2

Choose the TWO most appropriate statements for (a) to complete the underlined sentence (2).

(A) commonly used electronic products would be less advanced than they are today

(B) digital cameras would be more user-friendly than they are today

(C) laptop computers would be slower than they are today

(D) mobile phones would have more functions than they have today

(E) people would be more eager to prove "Moore's Law" than they are today

Question 3

Choose the sentence below which is closest in meaning to the underlined part (3).

(A) the average speed of chips will fall sooner or later

(B) chips will become slower in the end

(C) chips will have fewer transistors on them ultimately

(D) it will take longer to manufacture chips in about 10 years

(E) it will take more time to improve chip speed eventually

Question 4

Of the following statements, which one is NOT a problem mentioned in the text of putting more transistors onto a chip?

(A) Chip manufacturers will need to develop very narrow light beams.

(B) The chip manufacturing process will become more and more difficult.

(C) Chip technology will come up against "the wall" if things go on like this.

(D) The chips will become dangerously hot.

(E) Circuit patterns printed on chips will get more and more vivid.

Question 5

According to the text, what is likely to happen with the development of nanotechnology? Choose THREE of the responses below.

(A) Chip makers like Intel will be able to make considerable profits from it.

(B) IBM will have a virtual monopoly in the field of nanotechnology.

(C) It will be possible to make new materials which do not currently exist.

(D) The "law" Gordon Moore put forward in 1965 will be ignored as inaccurate.

(E) Less energy will be required to produce new medicine.

(F) Making chips which are much faster than they are now will be possible.

(G) Matter will be able to be controlled at the atomic level.

(H) The need for electricity will be reduced.

3 **Read the following text and answer questions A and B below.**

Japan and Italy may appear to be very different countries but they have two important factors in common: a falling birthrate and an ageing society. In Italy today 18. 9 % of the population is over 65, but this figure is likely to go up to 34. 4 % by 2050. The average age of Italians is currently 41. 8 and in 2050 is predicted to be 50. 5 ; 4. 3 % of the population is over 80 and by 2050 that figure will probably reach 14. 2 %. If these projections are right, then in 2050 Italy will have 15 million fewer people than today. Italy has the lowest fertility rate, at 1. 23 children per woman, and the fastest ageing population in Europe.

In response to these problems the Italian government has decided to offer women who have a second child a payment of 1, 000 Euros. This has already been paid to 190, 000 Italian women, but many Italians believe that this policy does not go far enough. One town, where only 4 babies were born in 2002, has offered women 10, 000 Euros over a 5-year period for each additional baby. This kind of policy has been introduced in another European country, Sweden, and was initially successful in increasing the number of new babies. However after only a few years the birth rate fell back to the same level before the financial support was introduced.

Letizia Mencarini, a professor at the University of Florence, questioned more than 3, 000 mothers across Italy to find out what would persuade them to have more children. She found that the more the father was involved in looking after the child and doing household chores, the more likely his wife was to want and have a second baby. The survey indicated that Italian men do little around the house — fewer than 6 % of mothers responded that their husbands "always" or "often" did household chores such as cooking or cleaning. As a result many women cannot face the dual burden of going out to work and looking after an extra child.

Other solutions to the problem of an ageing society include raising the official retirement age from 60 to 65, providing cheaper child care facilities so both parents can continue to work after having children, and extending paid maternity and paternity leave for parents after the birth of their children. One thing is certain for both Italy and Japan: solving the problems of an ageing society will be neither simple nor cheap and this will be one of the greatest challenges these countries face in the coming years.

Note

maternity and paternity leave: a period of time after having a baby when parents are allowed to be away from work

A Short-Answer Questions

Write a one-sentence answer to the following questions. Please answer using a complete sentence in English.

Example: Question: What do you want to study at Hokkaido University?
Answer: I want to study science at Hokkaido University.

(1) Which two problems does Italy face?

(2) Describe two features of the population in Italy in 2050.

(3) Why is the Italian government offering women a payment of 1, 000 Euros?

(4) According to Letizia Mencarini, what do Italian women want their husbands to do?

B Essay Question

Paragraphs 2, 3 and 4 in the text report several ways to resolve the issue of an ageing society. Which of the suggested solutions (or your own solution) do you think would work best? Write a short essay (about 70-90 words in English) describing your solution. Give clear reasons to support your opinion.

4 **Read text [A]. Then, complete text [B] (which is a summary of [A]) by putting ONE suitable word in each of the blanks (1) to (12).**

A

Lawrie Kingsley (LK): Good evening everyone and welcome to "In the Hotseat" with me, Lawrie Kingsley. Tonight, my guest is Sam Appleton, a spokesperson for the charity WDA, Water for Development in Asia. Welcome to the show Sam.

Sam Appleton (SA): It's a pleasure to be here Lawrie.

LK: First of all Sam, tell us a little about the work of WDA.

SA: Well Lawrie, Water for Development in Asia is aiming to bring clean and safe drinking water to all parts of Asia by 2030. At the moment, dirty drinking water causes thousands of deaths and millions of people to fall sick every year. It's a major barrier to economic development in Asia. At the moment, WDA is involved in many projects: we're building a sewage plant in northern Sri Lanka and have set up a well-digging project in central India.

LK: That's great, but recently WDA has made some controversial statements criticizing the proposed Indian Ocean Tsunami Warning System. Can you explain why?

SA: Lawrie, I need to correct your question. We have not criticized the project. After the devastating Asian tsunami in December 2004, I think everyone would welcome a warning system that could save lives in the event of a future disaster.

LK: So what's the problem then?

SA: It's a question of priorities. Usually, charities and governments have limits on what they can spend on development projects every year. After an event of the magnitude of the Asian tsunami, projects like providing clean water get cut back or postponed because money gets given instead to the big tragedy in the news. However, is the tragedy in the news really more important than issues not in the news?

LK: Surely you're not saying that people should not help the Asian tsunami relief effort.

SA: No no no. People needed a lot of help after the tsunami, but there are many people in Sri Lanka who need a sewage plant and people in central India who need wells just as badly. People don't think of clean drinking water as an urgent issue because they don't see it in the news everyday. However, the thousands of children who die of cholera and other diseases caused by unclean drinking water are just as much victims as those affected by the tsunami. The media focuses people's attention on the tragedy of the day rather than the longer-term needs of developing countries.

LK: Are you blaming the media? If you didn't have the media, nobody would know about your charity!

SA: Of course Lawrie, but you must understand that there are many things the media does not cover which affect more people than the stories reported in the media. Take accidents for example. Every year, hundreds of thousands of people are killed worldwide in traffic accidents, but only a few thousand are killed in plane crashes. But, it's the plane crashes that become news.

LK: And you think the media is also misrepresenting the Asian tsunami crisis.

SA: Yes, the same is true for the Indian Ocean Tsunami Warning System. Our concern is that it's a white elephant; in other words, an expensive project with limited benefits that might ultimately result in additional deaths in Asia. Tsunamis are once-in-a-generation, perhaps once-a-century events that we can do nothing to prevent. Deaths from a lack of clean drinking water are everyday events that can be easily and cheaply prevented. If the Tsunami Warning System takes development aid away from projects like ours, it's killing people. If all the money for the Tsunami Warning System was put into basic development projects like ours, we calculate that it would save many more than 200,000 lives every year. This makes it a much better way to spend the money.

B

Lawrie Kingsley is a television chat show host and he is conducting an (1) with Sam Appleton, a spokesperson for the charity Water for Development in Asia (WDA). Sam starts by explaining a little about (2) WDA's mission is: it believes that clean drinking water is essential for development in Asia. At the moment, the charity is (3) part in a number of projects, such as a sewage plant in Sri Lanka. However, WDA has caused (4) recently by criticizing the Indian Ocean Tsunami Warning System. They are not opposed to the warning system but are worried that the money could be better (5) on other projects. Sam says the project might be a white elephant that will cost more lives than it (6). Lawrie gets a little annoyed at Sam because Lawrie thinks that Sam is criticizing the (7). Sam says that very often it does (8) report the tragedies that affect most people, such as traffic accidents, but concentrates on more newsworthy stories (9) plane crashes. They both agree that the Tsunami Warning System is a (10) idea. However, with limited amounts of (11) available for development projects in Asia, Sam thinks it is a question of priorities: there may be better ways to save lives in Asia than by (12) up the warning system.

Note

sewage plant: 汚水処理施設