英　　　　　語

I. Read the following passage and answer the questions below.

Advanced night-time images taken from kilometers above the Earth could help us better understand the economies of some of the planet's least developed countries. So say the US economists behind a method for measuring changes in GDP* using the intensity of streetlights and other night-time lighting.

A better way of estimating GDP is badly needed, especially for poorer nations. Data collected by national governments is weak when it comes to informal parts of the economy, such as street markets. In some countries, such as Liberia, economic information systems are so poor that meaningful data sometimes does not exist.

Satellite images could help **(A)** fill the gap. Nations tend to build new roads and expand residential areas as they become wealthier, **(B)** both of which increase the number of lights that can be seen from space.

By comparing eleven years of satellite data on night-time light intensity with GDP estimates, David Weil and colleagues at Brown University in Providence, Rhode Island, developed a method for estimating changes in GDP from light measurements alone. When applied to some distant places, the formula makes it difficult to believe official figures. Their paper has been submitted to *The American Economic Review*. In the Democratic Republic of the Congo, for example, World Bank figures suggest that GDP shrank by 2.6 percent between 1992 and 2003. Weil's findings point to a 2.4 percent increase over the same period. "That makes me think that the Congo's problems are with its statistical information, not its economy," says Weil.

GDP measurements could ultimately be improved by using a combination of conventional data and light measurements, but Weil says that researchers need first to get a better understanding of the link between economic activity and light intensity. An increase in population, for example, can increase light intensity even during poor economic times.

Economists will also have to consider whether the link between GDP and light intensity, which was established using information on rich nations, works in the developing world. "They are extending the relationship to places we don't know about, where it might not work," says Jan-Peter Muller, a specialist at University College, London.

If such problems can be **(C)** ironed out, the light data could become a rich source for economists. It is more regularly updated than traditional economic indicators and can be used to study how lighting levels in different regions change compared to each other—something that is often hidden in national statistics.

(D) An even richer source of data may also become available: NASA researchers are developing a proposal for Nightsat, a remote-sensing satellite designed to produce higher-resolution images of the light emitted from populated areas.

(E) _____ changes in GDP, these images and data could better show the night-time energy consumption rates which contribute greatly to climate change as well. If the public as well as scientists can be made aware of how much energy is wasted at night in the form of excessive and poorly-designed lighting, then positive changes can begin. High night-time light intensity (or 'light pollution'), especially in urban areas, has been linked to sleep disorders and changes in the behavioral patterns of plants and wildlife. It is ironic that it is the night that may shed light on many aspects of our modern lives.

*GDP (Gross Domestic Product) = 国内総生産

I. 1. Choose the most appropriate title for this article.

    a. A Satellite View of the Earth

    b. Streetlights Lead to a Better World

    c. Lessons from Above

    d. GDP Determines Satellite Images

I. 2. Choose the most appropriate answer for each question.

(1) Why is it necessary to find a more effective way of assessing the GDP of poorer nations?
 a. Their own methods are inaccurate or lacking.
 b. Street markets are informal parts of the economy.
 c. Data is weakened by the national government.
 d. Economies often don't exist.

(2) Which of the below is the closest in meaning to **(A)**?
 a. improve economy
 b. reduce energy consumption
 c. remedy the deficiency
 d. increase GDP

(3) What does "both of which" refer to in **(B)**?
 a. satellite images and the number of lights
 b. new roads and residential areas
 c. satellite images and nations becoming wealthier
 d. the gap and new roads

(4) Which phrase best completes the following sentence?
 The figures of the World Bank and David Weil _____.
 a. contradict each other   b. agree with each other   c. complement each other   d. confuse each other

(5) Why is an increase in population a problem for the project?
 a. Because it can decrease light intensity if it modernizes.
 b. Because it is bad for the economy.
 c. Because people can get richer without needing new lights.
 d. Because people don't need to be richer to increase light intensity.

(6) Which of the below means the same as **(C)**?
 a. solved   b. strengthened   c. ignored   d. avoided

(7) Which of the following is **NOT** mentioned as an advantage of the light data?
 a. It can provide economists with useful information.
 b. It is up-to-date.
 c. It can show differences between different areas in a nation.
 d. It can change the lighting level in local areas.

(8) Which of the following is the most appropriate word or phrase to fill **(E)**?
 a. Therefore   b. Although   c. In addition to   d. Except for

I. 2.

(9) What is the writer trying to do in the article?

    a. He is trying to persuade readers to use less energy.

    b. He is trying to criticize the conventional data collected in poor nations.

    c. He is trying to inform the reader of new uses of satellite imaging.

    d. He is trying to present recent data on light intensities around the world.

(10) Why is it "ironic that it is the night that may shed light on many aspects of our modern lives"?

    a. Because most people are asleep at night.

    b. Because the night is dark and usually hides things.

    c. Because you can only see lights at night.

    d. Because a long time ago there were no satellites.

I. 3. Translate the underlined part (D) in the passage into Japanese.

I. 4. Do you agree or disagree with the following statement? "In today's world, we need to use a lot of energy at night."

II. From sentences A to J below, choose the most appropriate combination to complete the paragraph.

(1) In comparison to city dwellers in other ancient civilizations, those of India left relatively little for scholars to study. (2)(3)(4) Scholars have filled libraries and museums with books and objects from its distant past. (5) There is still so much that we don't know. (6)(7) (8) Archeologists are still looking for clues to ancient India's past in the ruins of its cities.

A. We don't know what weapons and tools the people used or how wars were fought.

B. How people in rural farming districts in India lived a long time ago is still a mystery.

C. China, another of the first great river-valley civilizations, never disappeared.

D. Moreover, no one has been able to unlock the mysteries of their language so far.

E. In ancient Egypt, for example, the pyramids, tombs filled with treasures, and much more help us understand the past.

F. No one knows for sure how people lived thousands of years ago in India.

G. We don't know the names of the most loved or hated rulers, nor how the government worked.

H. Extending over an area considerably larger than Texas, the Indus Valley civilization was many times larger than ancient Egypt or Mesopotamia.

I. Ruins of great palaces and writings on tablets tell us about the people who lived in Mesopotamia along the Tigris and Euphrates rivers.

J. However, ancient India is different.

II. 1. (1)	a. A	b. B	c. F	d. I
II. 2. (2)-(3)-(4)	a. E-C-H	b. E-I-C	c. I-C-H	d. I-H-C
II. 3. (5)	a. B	b. D	c. F	d. J.
II. 4. (6)-(7)-(8)	a. A-F-B	b. E-I-H	c. G-A-D	d. I-J-F

III. Based on the table below, choose the most appropriate answer to fill in each blank.

Global and regional per capita food consumption (kcal per capita per day)

Region	1974 - 76	1984 - 86	1997 - 99	2015	2030
World	2435	2655	2803	2940	3050
Developing countries	2152	2450	2681	2850	2980
Near East, North Africa	2591	2953	3006	3090	3170
Sub-Saharan Africa	2079	2057	2195	2360	2540
Latin America, Caribbean	2546	2689	2824	2980	3140
East Asia	2105	2559	2921	3060	3190
South Asia	1986	2205	2403	2700	2900
Industrialized countries	3065	3206	3380	3440	3500
Transition countries	3385	3379	2906	3060	3180

(Adapted from http://www.who.int/nutrition/topics/3_foodconsumption/en/)

When Will Enough Be Enough?

In the seventies, people in South Asian countries were consuming just (1) kilocalories per day, which is reasonable enough for an active human being. However, by the (2) this increased by over 20 percent, and this growth is expected to (3). By (4), South Asian countries are expected to accomplish just over 20 percent growth over the 1999 figures. East Asian countries have an increase of (5) percent in the twenty-year period from the seventies to the nineties. Their prosperity is showing. The increase in food consumption in the developed countries is also fairly high—as much as 5 percent from the mid-seventies to the mid-eighties. Their base being higher, the increase is (6), but they too are stuffing themselves.

(7), the statistics do show a falling off. In the developed countries the food consumption per capita is supposed to increase by barely (8) percent from 2015 to 2030. The increase in consumption levels of East Asian countries is also expected to fall to 4 percent over the same period. This means that food consumption levels don't (9) that much when humans near the 3,000 calorie mark, but what is (10) is that they still increase. Are we soon going to be a huge species?

1. a. 1986   b. 2152   c. 2205   d. 2403
2. a. mid-seventies   b. mid-eighties   c. late eighties   d. late nineties
3. a. continue   b. disappear   c. start   d. stop
4. a. 1984   b. 1999   c. 2015   d. 2030
5. a. 10   b. 20   c. 40   d. 60
6. a. more   b. cheaper   c. lower   d. bigger
7. a. Unfortunately   b. Similarly   c. Thankfully   d. Immediately
8. a. 0.1   b. 2   c. 10   d. 20
9. a. increase   b. drop   c. matter   d. show
10. a. fortunate   b. worrisome   c. reasonable   d. avoidable

IV. Read the following library signs and conversation in a university library cafeteria and answer the questions below.

Reading Room	West Room	Digital Resource Room
9:00-19:00 (Mon-Sat)	9:00-17:00 (Mon-Fri)	- Electronic resources such as journals, databases
- Main collection by subject	- Post-1890 unbound books and newspapers	- Laptops can be used on spare desks.
- Reference books cannot be borrowed.	- Laptop-friendly	

Alex: Hi guys. Here already? I thought you'd still be in bed at this time on a Saturday.

Ben: Ha ha. Hey Alex. Have a seat. Here's the lunch menu. Carrie just got here, too. She's been in the Anderson Room all morning pretending to study for her American Revolution exam.

Carrie: Pretending? At least I've been doing something. Ben's been here since half past ten eating cakes. He's our new expert on high-sugar Italian desserts.

Ben: Hey! It's not my fault the Reading Room won't let you plug in your laptop. The battery's completely flat after an hour in there.

Alex: Looks like you need a new model. They're cheap now because the economy's so bad.

Carrie: Excuses, excuses. The West Room has sockets at the north end for students. You just prefer strawberry tarts to Steve Jobs.

Ben: Now you tell me!

Alex: Who?

Carrie: Steve Jobs, the Apple guy. He's got some paper to write about innovation in computer science. And he can't even work out how to keep his computer on for more than an hour. Are you sure IBM will want such a genius?

Ben: Get lost, Carrie. Are you ready for your presentation, Alex?

Alex: Not even close. I was wondering if you guys could lend a hand.

Carrie: What do you need?

Alex: Background info on Islam.

Carrie: I know a bit about early Islam. And there's tons of stuff in the Manuscript Room.

Alex: No, it's not so much that stuff. My degree focuses more on the social effects of things like religion and immigration.

Ben: Sounds interesting. Alex, if you check out the newspapers in the West Room, I can look in the psychology section of the Reading Room—there might be some articles there.

Carrie: I'll try the Digital Resource Room. It's not open as late as the other rooms, so I'll see you guys back at the apartment.

Alex: Thanks a lot, guys. This presentation has been giving me nightmares. So, what are you going to have?

Ben: (　　A　　)

IV. 1. Who came to the cafeteria first?

    a. Alex   b. Ben   c. Carrie   d. Steve

IV. 2. Which room closes first?

    a. West Room   b. Anderson Room   c. Reading Room   d. Digital Resource Room

IV. 3. Which sentence is true about the Reading Room?
    a. It opens before the other rooms.
    b. It doesn't have facilities for charging batteries.
    c. It is open on Sunday.
    d. Laptops cannot be used.

IV. 4. Which of the friends won't be able to get information this afternoon?
    a. Alex   b. Ben   c. Carrie   d. All of them

IV. 5. Who has a laptop computer?
    a. Alex   b. Ben   c. Carrie   d. None of them

IV. 6. Choose the best response for Ben in (**A**).
    a. A sandwich.   b. A nightmare.   c. Information.   d. A new task.

IV. 7. Which of the following is correct?
    a. Carrie knows where students can use computers.
    b. Alex is almost ready for his presentation.
    c. Ben thinks that Carrie studied hard this morning.
    d. The friends offer to help Ben.

IV. 8. Which of the following subjects are the friends probably studying?

(1) Alex	a. Religious Studies	b. Sociology	c. Food Science	d. Economics
(2) Ben	a. History	b. Psychology	c. Information Technology	d. Food Science
(3) Carrie	a. Religious Studies	b. Business Management	c. Information Technology	d. History