(平成22年度前期日程)

外　国　語

(英　語)

90　分

注　意　事　項

1. 試験開始の合図までこの冊子を開かないこと。
2. 本問題冊子は10ページ，答案用紙は2ページである。
3. 各答案用紙の上の枠内には，**受験番号**を記入し，その右側の枠内には，受験番号の**下2桁**の数字を忘れずに記入すること。
4. 解答はすべて各答案用紙の所定の欄に記入すること。
5. 答案用紙の冊子は切りはなさないこと。
6. 答案用紙に記入する受験番号の数字の字体は，下記の例にならい，明瞭に記入すること。

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Ⅰ　次の英文を読んで，以下の設問に答えよ。(80点)

Permafrost, soil at or below the freezing point of water for two or more years, is melting, especially in Siberia. Deer, horses, oxen, cave lions, and mammoths* that roamed these lands and died some 20,000 years ago are emerging from the loosened earth. Not only bones, but skin, flesh and hair are suddenly being exposed. Insects have found these remains and are going to work. It stinks.

(1) The vast supply of organic matter coming to the surface threatens the very foundations of civilization. Since the beginning of the industrial age, humans have released about 450 billion tons of carbon in fossil fuels, a failure of judgment or understanding that already commits us to the greatest warming known in the past 55 million years — the last time atmospheric carbon dioxide (CO_2) levels were this high. Warming is driving the collapse of permafrost soil, whose carbon deposits total 500 billion tons.

Inner Siberia is the most isolated territory on Earth when it comes to water. Nearly all its rain comes from evaporation from land, so it is unusually sensitive to the responses of plants to heat and cold stresses. Inner Siberia is also the coldest place on our planet today. In 1885, explorers recorded temperatures of minus 67.8 degrees Centigrade. This region has almost entirely frozen ground, on top of which is a thin layer of soil, between 0.6 and 4 meters thick, that can support plant life during the summer when it thaws.

Siberia has experienced the greatest 20th-century warming on Earth. Changes in Siberia have global consequences. The Arctic Ocean derives most of its fresh water from four giant Siberian rivers. There has been a marked increase in land runoff in the rivers. (2) 春の雪解けが急速すぎて，水が土の中にしみ込めないのかもしれない。 The result is a drier landscape. Forest fires have become more frequent and intense, sending carbon stored in the wood into the atmosphere and hastening the breakup of the soil.

The past two million years have been dominated by cycles of glacial and interglacial periods that are some of the coolest and driest climates the Earth has experienced. These, taken together, are called the Pleistocene era (1.8 million to 10,000 years ago). The dryness in older periods led to the evolution of grasses and other plants adapted to dry climates, and these plants came to be widely distributed. The abundance of grasses led to the evolution of herbivores — animals that eat plants — among them, the woolly mammoth. Thus was born the Mammoth Steppe** ecosystem. About 10,000 years ago, there came a time when no more mammoths walked the Earth. The end of that society marks the beginning of the Holocene period, which persists today. Hardly any animals walk in Siberia now, and in the place of steppe grasses are only larch trees, moss, blueberry, and other vegetation of the vast Eurasian forest.

If you follow the discussion on what possible directions global warming might take, the crucial ingredients are: first, how much CO_2 from fossil fuels we are releasing; next, how much the atmosphere will heat from that; and finally, how the land and ocean will react to decrease or increase the warming. Few scientists argue that grazing animals make any mark on the global climate. The Green World Hypothesis influences their bias. It says that even though insects attack wood, koalas eat leaves, and elephants step on plants, the landscape remains largely green. This theory suggests that in the struggle between plant-eating animals and plants, the plants have the upper hand, and therefore it is plants that shape the weather, not animals.

However, if you looked at the bones buried everywhere in Siberia, (3) you would soon come to conclude that mammoths would have crushed nearly every tree in the region, leaving an extensive grassland. The loss of mammoths and consequent northward expansion of forests would have a distinct warming effect. In springtime, while grasses lie dormant under a thin blanket of snow, black trunks of trees tower above the surface and absorb the sun's light. The difference between energy absorbed by trees and energy reflected by snow in

those first weeks of spring is what determines whether permafrost grows or shrinks. This is a major reason why land in high latitudes is warming faster than land anywhere else on Earth. Just as the northern advance of forests is accelerating warming today, mammoths and other herbivores kept the climate of their day cool.

The mass extinction*** of the animals of the Mammoth Steppe — mammoths, bison, horses, rhinoceroses, cave lions, beavers, reindeer, elk, deer, and many others — is still a source of active debate between two camps: those who argue that the animals died out and others who argue that human settlers killed the animals on their way to North America. Scientists in the latter group say, "In America, 500 men with guns killed 50 million buffalo in five years. In Australia, the 23 largest herbivores were extinct in the first century after humans arrived. What makes you think Siberia is any different?" In principle, there is no reason why mammoths could not exist in Siberia now.

(4) What if driving the mammoth to extinction at the end of the Stone Age brought us this warm climate we have today? If we recreated the Mammoth Steppe, could we engineer global cooling? This is the logic behind Pleistocene Park, a grand scientific experiment to recreate the complex set of interactions between animals, plants, and their physical setting, to reestablish the Mammoth Steppe as a way of altering the climate system.

Scientists in Siberia are gathering animals such as wild horses with thick fat under their skin, reindeer from Sweden, and oxen from Alaska. But what about mammoths? Scientists have experimented with a military tank to simulate the effect that mammoths must have had by walking around. Where the tank has driven, grass grows instead of trees. Mammoths were tanks in the former world. Siberian scientists calculate that 5,000 bison shipped from Canada would be enough breeding stock to start a continental-scale effort to restore the Mammoth Steppe and keep 500 billion tons of carbon frozen in permafrost.

On the world market, the current price of CO_2 is about $5 per ton or more.

If all of the carbon in the Pleistocene Park permafrost were kept from escaping, the value would be $9 trillion in CO_2 saved from release. Animals, with the help of scientists, just might save the Siberian permafrost from becoming a melting carbon bomb.

[Adapted from Adam Wolf, "The Big Thaw," *Stanford*, September/October, 2008, pp. 64-66.]

*mammoth: マンモス

**steppe: a large area of land with grass but few trees

***extinction: a situation in which a plant, an animal, or a way of life stops existing

I — 1. 下線部(1)は具体的にどのようなものを指しているのか，50字以内の日本語で答えよ(句読点を含む)。

I — 2. 下線部(2)を英語に訳せ。

I — 3. 下線部(3)，(4)を日本語に訳せ。

I — 4. 以下の(A)から(D)までの問いに関してもっとも適切な答えを選び，記号を記せ。

(A) Choose the one correct description of Siberian weather, animals, and plants during the Pleistocene and Holocene time periods.

イ There is no difference between the Pleistocene and Holocene regarding plants, animals, and the weather in Siberia.

ロ The Holocene has been colder than the Pleistocene, with more mammoths and more grassy areas in Siberia.

ハ The Holocene has been colder than the Pleistocene, with no mammoths and more grassy areas in Siberia.

ニ The Holocene has been warmer than the Pleistocene, with fewer mammoths and fewer grassy areas in Siberia.

ホ The Holocene has been warmer than the Pleistocene, with no mammoths and fewer grassy areas in Siberia.

(B) Which animal are scientists NOT considering for reintroduction to Siberia? Choose the one correct answer.

イ bison

ロ cave lions

ハ horses

ニ oxen

ホ reindeer

(C) According to the text, why would scientists try to prevent forests from growing in Siberia? Choose the one correct answer.

イ Forests attract insects.

ロ Forests keep the soil from washing away.

ハ Forests remove carbon dioxide (CO_2) from the air.

ニ Forests speed the melting of permafrost soil.

ホ Forests store carbon in wood.

(D) Find the two incorrect statements.

イ According to the Green World Hypothesis, grass-eating goats have little impact on weather systems.

ロ More carbon is deposited in Siberian permafrost than humans have released in the past few hundred years.

ハ One hundred years ago there were more forest fires in Siberia than there are today.

ニ Scientists are certain that humans killed off mammoths.

ホ The amount of carbon dioxide (CO_2) in the air has been, for the past 55 million years, lower than current levels.

I — 5. Describe what would probably happen to the plant life and weather in Siberia if the Mammoth Steppe were NOT recreated. Answer <u>in English</u>.

Ⅱ　次の英文を読んで，以下の設問に答えよ。(70 点)

Fieldwork is one answer — some say the best — to the question of how the understanding of others, close or distant, is achieved. Fieldwork usually means living with and living like those who are studied. In its broadest, most conventional sense, fieldwork demands the full-time involvement of a researcher over a lengthy period of time and consists mostly of ongoing interaction with the human targets of study on their home ground. Fieldwork virtually always is self-transforming as the fieldworker comes to regard an initially strange place and people in increasingly familiar ways.

Fieldworkers present themselves as "marginal natives" or "professional strangers" who bring forth in writing or film or photography or musical recordings, a cultural account. While there are undoubtedly cases where fieldworkers fail to achieve a status among the people studied better than "dull visitors," "meddlesome busybodies," or "hopeless dummies," fieldworkers themselves, by reference to the massive amounts of experience they accumulate in the field, are sure to present their stay as highly instructive.

To do fieldwork apparently requires some of the instincts of an exile, for the fieldworker typically arrives at the place of study without much of an introduction and knowing few people, if any. Fieldworkers, it seems, learn to move among strangers while holding themselves in readiness for episodes of embarrassment, affection, confusion, adventure, fear, pleasure, surprise, insult, and rejection. Accident shapes fieldworkers' studies as much as planning; routine as much as drama; impulse as much as rational choice; mistaken judgments as much as accurate ones. This (1) may not be the way fieldwork is reported, but it is the way it is done.

What I mean by fieldwork is the notion of participant-observation. This method reflects the assumption that "experience" underlies all understandings of social life. Fieldwork asks the researcher, as far as possible, to share firsthand

the environment, problems, language, rituals, and social relations of a group of people. (2)その考え方は，こういう方法によれば，研究対象とする社会についての，豊かで具体的で複雑な，また真実を伝える記録が可能だ，ということである。

The ends of fieldwork involve the catchall idea of culture: a concept as stimulating yet fuzzy to fieldworkers as the notions of life is for biologists. (3)Culture refers to the knowledge members of a given group are thought to more or less share; knowledge of the sort that is said to account for the routine and not-so-routine activities of members of the culture. It is necessarily a loose, slippery concept, since it is anything but unchanging. Culture is not tangible. A culture is expressed only by the actions and words of its members and must be interpreted. To portray culture requires the fieldworker to hear, to see, and to write of what was presumably witnessed and understood during a stay in the field. Culture is not itself visible, but is made visible only through its representation.

This is what makes the study of culture so tricky. Human culture is not something that can be caged. The fieldworker must display culture in a narrative, whether verbally or visually. That narrative, unfortunately, can never be transparent: it is always an interpretation, filtered through the prism of a different culture, a different time. Moreover, one might argue that it is not only the fieldworker who participates in the act of interpretation when trying to understand another culture; it is also the audience who must make sense of what is presented. Cultural consciousness arises from the efforts of the fieldworker to experience and to communicate, and the reader or viewer to comprehend.

[Adapted from John Van Maanen, *Tales of the Field: On Writing Ethnography*, University of Chicago Press, 1988, pp. 2–7.]

Ⅱ— 1. 下線部(1)の "This" が指している内容を 40 字以内の日本語でまとめよ(句読点を含む)。

Ⅱ— 2. 下線部(2)を英語に訳せ。

Ⅱ— 3. 下線部(3)を日本語に訳せ。

Ⅱ— 4. 文化の研究が "tricky" である理由を，60 字以内の日本語でまとめよ(句読点を含む)。

Ⅱ— 5. 以下の(A)から(D)までの問いに関して適切な答を選び，記号を記せ。

(A) Which is an example of the "participant-observation" research method?

イ Attending a wedding in Laos

ロ Reading about weddings in Laos

ハ Watching a documentary about weddings in Laos

ニ Going to a photography exhibition on weddings in Laos

ホ Asking someone who has visited Laos about weddings there

(B) Which is an example of a "marginal native"?

イ A Japanese college student who likes African fashion

ロ A Japanese college student who listens to African music

ハ A Japanese college student who lives with an African tribe

ニ A Japanese college student who enjoys eating African cuisine

ホ A Japanese college student who speaks an African language at an intermediate level

(C) Choose one statement illustrating the idea that culture is "a loose, slippery concept."

イ All fieldworkers should be able to agree on the representation of a culture.

ロ A fieldworker can know another culture by handling objects from that culture.

ハ A fieldworker can understand modern Egyptian culture by visiting the pyramids.

ニ A fieldworker who cannot come up with a permanent definition of a culture is a failure.

ホ A fieldworker's interpretation of a culture is likely to be out-of-date one hundred years later.

(D) In addition to fieldworkers, audiences participate in the act of interpretation when trying to understand another culture. Choose one example that does NOT demonstrate how an audience might interpret the culture depicted in a foreign film.

イ Writing a blog about the film

ロ Discussing the film with friends

ハ Designing a restaurant like one seen in the film

ニ Watching the film again and again for language pronunciation practice

ホ Composing a piece of music inspired by traditional melodies in the film