自治医科大学

入 学 試 験 問 題（1次）

外　　国　　語

平成 28 年 1 月 25 日　　13 時 10 分―14 時 10 分

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見てはならない。

2　この冊子は，16 ページである。落丁，乱丁，印刷不鮮明の箇所などがあった場合には申し出よ。

3　解答には必ず黒鉛筆（またはシャープペンシル）を使用せよ。

4　解答用紙の指定欄に受験番号上下 2 か所，氏名を忘れずに記入せよ。

5　解答は，必ず解答用紙の所定の解答欄に記入せよ。

6　解答の記入の仕方については，解答用紙に書いてある注意に従え。

7　この冊子の余白は，草稿用に使用してよい。ただし，切り離してはならない。

8　解答用紙およびこの問題冊子は，持ち帰ってはならない。

受験番号					

上の枠内に受験番号を記入せよ。

自治医科大学

訂　正

外国語

- 10 頁 問題 11 選択肢 C

  誤　交配種の生存率が上がった。

  正　交雑種の生存率が上がった。

- 11 頁 問題 15 問題文

  誤　細菌叢

  正　微生物叢

- 13 頁 問題 17～20 の問題指示文

  誤　17～19 の問題については,

  正　17～20 の問題については,

Ⅰ．次の英文を読み，１～８の問題に最も適した答えを選べ。

Several years ago in Tokyo, I became acquainted with Mr. T., an American linguist. He had begun to study Japanese history and *dialectology, an interest dating from the postwar days when he was stationed in Japan with the occupation forces. Thus, many years after the war, he was again in Tokyo, this time with his Italian-American wife, an elementary school teacher, and their three daughters.

They rented an old Japanese-style house, where they lived in *tatami* rooms, sitting on *zabuton* (floor cushions). In winter they kept warm with a *kotatsu* (a foot warmer with a quilt over it) and *kairo* (portable body warmers), and their three daughters attended Japanese schools. (1) Thus the whole family adapted beautifully to Japanese-style living.

One day, as American scholars often do, he invited many friends and acquaintances in his field to his home. After being served cocktails, together with such *hors d'oeuvres as Italian-style squid, we were shown into another room for dinner. When everyone was seated, meat and salad were brought in. Interestingly enough, each of us was also served plain white rice in a *donburi*, a large Japanese bowl.

The rice was served in the usual Japanese way, and I (2) knew about the family's living completely in the Japanese style. All these factors must have led me into thinking for a moment that (3) we were supposed to eat the rice as a main course and the meat and salad as side dishes. I picked up the meat dish before me and was ready to pass it to my neighbor, when I sensed that Mrs. T. looked a little puzzled. Suspecting that I was making a mistake, I asked her whether we should eat rice with the meat or by itself. She answered with a smile that she expected us to finish the rice first. Suddenly it dawned on me that in Italian *cuisine rice corresponds to soup, as do macaroni and spaghetti. As a matter of fact, the rice turned out to be a kind of *pilaf.

Eating is an important part of a structured entity called culture, (4) and there are rules and restrictions varying from country to country as to what, when, and how to eat, and what not to eat. Everyone knows that Catholics were not supposed to eat meat on Fridays in former times and that Muslims never eat pork, which they consider unclean. Rules distinctly stating what not to eat are comparatively easy even for foreigners to understand. On the other hand, if an item from one's native cooking appears in a foreign meal but occupies a different position in relation to other items of food in one's own cuisine — i.e., when the value of the same item in a meal as a whole varies from one culture to another — difficult problems arise.

In Japan, white rice may be eaten from the beginning of a meal to the end, but it is considered bad manners to concentrate on eating rice only. One is not observing good manners unless one skips around from nonrice food to rice, from rice to soup, and so on. We might therefore call the relationship between rice and other foods in a Japanese meal *concurrent and *synchronic: rice may be eaten with soup, pickles, or anything else.

There are, on the other hand, cultures in which one goes through a meal in stages, eating one course at a time. Such a meal may be said to unfold in a distinctively serial, or *diachronic, way. Most Western countries belong to this group, and Italy is no exception. In Italy, soup and rice are called **minestra* and are eaten before the main meat course begins.

The error I made (5) when I almost ate the meat dish together with the rice was due to the fact that I, finding an item from Japanese cuisine in an Italian meal, tried to give it a Japanese value by assigning it a position according to the structure inherent in my own culture.

I will cite one more nonlinguistic example. The most common form of greeting used when a Japanese meets a friend or an acquaintance is a bow. However, when this same person learns that Westerners generally shake hands instead of bowing, he starts shaking hands without considering the situation.

This is obviously due to his interpretation (6)that a bow and a handshake are acts of equivalent value. Actually, not all occasions when bowing could take place call for handshakes. For example, although in Japan it does not matter which (7)party is the first to bow, in some countries, it is considered bad manners for a man to extend his hand to a woman before she extends her hand. Extending one's hand to anybody one meets might even lead to (8)unnecessary misunderstanding.

【Source:Takao Suzuki, "Words in Context — A Japanese Perspective on Language and Culture" (Translated by Akira Miura), Kodansha International, Tokyo and New York 1989, pp. 10–12. (一部書き換え)】

Glossary:

dialectology：《言語学》方言学　　hors d'oeuvres：オードブル

cuisine：料理法，調理法　　pilaf：ピラフ　　concurrent：同時発生する

synchronic：共時的な　　diachronic：通時的な　　minestra：ミネストローネ

1. Thus the whole family adapted beautifully to Japanese-style living. と筆者が考えた理由として最も適切なものを選びなさい。

A. Because they kept warm with a kotatsu.

B. Because they rented an old Japanese-style house.

C. Because their three daughters attended Japanese schools.

D. Because they were living like their Japanese friends and acquaintances.

2. 本文中の knew の意味に最も近いものを選びなさい。

A. to have realized

B. to have thought

C. to have guessed

D. to have had information

3. we were supposed to eat the rice as a main course and the meat and salad as side dishes. と筆者が考えた理由の中で最も適切だと思われる文を選びなさい。

A. Because the rice was presented in the usual Italian way.

B. Because I knew about the family's living completely in the Japanese style.

C. Because each of us was first served cocktails and hors d'oeuvres.

D. Because the rice appeared in an Italian meal occupied a different position from Japanese cuisine.

4. 本文中の culture の意味に最も近いものを選びなさい。

A. the way of life of a particular society or a group

B. appreciation and knowledge of music, theater, painting, etc.

C. a way of thinking, behaving, or working that exists in civilized societies

D. a group of cells, bacteria, etc., grown in controlled conditions for scientific study

5. 本文中，なぜ筆者(the author)は "error" という語を用いたのか，最も適切に説明している文を下から選びなさい。

A. Because the author tried to give a Japanese meal an Italian value.

B. Because the author found an item from Japanese cuisine in an Italian meal.

C. Because the author acted in accordance with Italian standards when a Japanese system of values was required.

D. Because the author acted in accordance with Japanese standards when an Italian system of values was required.

6. that a bow and a handshake are acts of equivalent value の意味に最も近いものを選びなさい。

A. that a bow and a handshake are acts that have the same price

B. that a bow and a handshake are acts that have the same elegance

C. that a bow and a handshake are acts that have the same function

D. that a bow and a handshake are acts that have the same appearance

7. 本文中の party の意味に最も近いものを下から選びなさい。

A. a group of people who do something together

B. a specific person or an individual under consideration

C. an organization of people who have similar political beliefs and ideas

D. a social event in which entertainment, food, and drinks are provided

8. 本文中の unnecessary misunderstanding を避けるための知識として最も適切な内容を表現している文を選びなさい。

A. Westerners generally shake hands instead of bow.

B. In Japan it does not matter which party is the first to bow.

C. Not all occasions when bowing could take place call for handshakes.

D. It is considered bad manners for a woman to extend her hand to a man before he extends his hand.

Ⅱ. 以下はあるラジオ番組におけるインタビューを記録したものである。英文を読み，9～16の問いに答えなさい。

The bacterial *fauna on our bodies and in our guts can do more than regulate digestion. A new study in the journal Science says microbes can influence evolution. Host Steve Curwood talks to Seth Bordenstein, co-author of the research that some evolutionary biologists are calling groundbreaking.

CURWOOD: There is a major breakthrough in research into evolution and genetics. It seems that our own genes tell only part of the story of how our bodies work. Now research funded by the National Science Foundation shows that the *microbiome is also key to *speciation, the process by which new species evolve. Seth Bordenstein is an Associate Professor of Biological Sciences at Vanderbilt University, and co-author of this new study. Welcome to the show.

BORDENSTEIN: Thanks for having me.

CURWOOD: Now this is pretty complicated science. (9) Can you just walk us through briefly what you did in this experiment?

BORDENSTEIN: Sure. Every animal has a gut, and within that gut is a large population of bacterial cells that scientists called the microbiome. And we appreciate how important it is today in health and disease. We know far less about whether the microbiome is essentially important to the evolution of animals, and plants for that matter. And what we set out to do was test the hypothesis that new species of animals can arise through changes in their gut bacteria or gut microbiome.

CURWOOD: How do you do that?

BORDENSTEIN: Well you do that with an excellent system to examine speciation, and so we have selected a parasitic *wasp. And this wasp has four very closely related species in it. Essentially they're undergoing speciation

right now, and it allows biologists to capture the key events that contribute to the origin of new species. And we realized that when these species *interbreed and they can make what's called a hybrid, that the hybrids sometimes die. They don't survive to adulthood. And for a while people had asked why is it that these hybrids are dying. People ask this question in many systems: why do hybrids die between closely related species.

CURWOOD: And I'm guessing that what you found is changes or differences in their gut bacteria make the difference.

BORDENSTEIN: That's correct. And it's not just changes in the gut bacteria, but changes in the genes, and that it really takes two to tango. It takes (10) both the gut bacteria and the genes inside the animal cells to drive the origin of these new species.

CURWOOD: Now how did you find the effects of evolution along with microbiome by looking at the hybrids of these wasps?

BORDENSTEIN: So these wasp hybrids showed a very interesting trait in which their gut microbiome looked different than the parental species, the non-hybrids. And we decided to eliminate the microbiome from the hybrids and see what effect that would have on their death. And remarkably, we found that (11) the hybrids lived when we took the microbiome away, indicating that the bacteria are essential to causing hybrid *fatality.

CURWOOD: And meaning then that bacteria are essential in this process of evolution?

BORDENSTEIN: Correct. Because speciation is the process by which two organisms can't interbreed anymore, and we showed that the microbiome is essential to that process.

CURWOOD: Now your research touches on a controversial idea in evolutionary biology called the hologenome (12). What is that?

BORDENSTEIN: So the hologenome is basically the *aggregate genome of an organism. That is, if we consider the microbiome and the cell's mitochondria

and the cell's DNA together, and we sum this information... this genetic information up. Some folks consider this a hologenome, the total genetic information of an animal or a plant, and that the object of evolution is not just one of these genomes, but all of them together. And that's what changes through the origin of new species.

CURWOOD: Well wait a second here. Us humans, we have 10 times as many microbial cells as our own selves. So we're only 10 percent of the genetic game for being human?

BORDENSTEIN: I'm sorry, but we are. We're all walking bags of microorganisms, and we should be proud of that because without the microorganisms we would simply die and they would live on. And so they're essential to our fitness and our health.

CURWOOD: So what other studies have there been to support this hologenome theory?

BORDENSTEIN: So the hologenome theory is in its early days, and it's arguably something that will have a lot of questions around it. Conceptually, the two founders of the hologenome theory, Richard Jefferson and Eugene Rosenberg, have come up with the description of the theory. And Eugene Rosenberg's lab from Israel has found that if you take a single species of fly, the same species, and you split that species and cultivate it on two different diets, and then you bring these flies back in contact with each other and ask, "do they mate?", they stunningly found that these flies didn't mate when they were reared on different diets, but yet they were considered the same species. They were able to find that it was the bacteria in their guts that changed that helped contribute to this mating discrimination that they saw in this one species.

CURWOOD: I mean, at the end of the day, does that mean somebody who eats big Macs wouldn't get along with somebody who is a *vegan?

BORDENSTEIN: Well, probably not, but we do know that microbes affect the way we smell, and if individuals choose to date or find the partners based on

their smell, then that is a form of discrimination that is occurring. And if it happens at the population or species level then new species will be arising, and so while anything is possible in biology, I doubt that humans will be splitting into different species.

CURWOOD: Now sometimes in the process of heredity genes become more or less active, or sometimes can work in different ways. 〔遺伝子の働きにスイッチを入れたり切ったりするうえで微生物はどのような役割(14)を果たしているのでしょうか〕

BORDENSTEIN: That's a great question. So microbes will clearly turn on immune genes when they are present. The immune genes serve as essentially the guardians of the host defense system. But there may be many biological processes as we learn about the microbiome that could be turned on, for example brain development, digestion, the way we smell. These are things that(15) increasingly the microbiome is shown to have a role in.

【Source: "Microbes and Evolution", Living On Earth (NPR), July 26, 2013. http://loe.org/shows/segments.html?programID=13-P13-00030&segmentID=1】

Glossary:

fauna：〔ある地域と時代の〕動物相［区系］　microbiome：《生物》微生物叢
speciation：《生物》種形成　wasp： ハチの一種
interbreed《動物・植物》異種交配する　fatality：致死(率)
aggregate：集まった，集合の，総体の　vegan：完全菜食主義者

9. 下線部(9)で complicated science と呼ばれている Bordenstein 氏の研究主題について，もっとも適切な説明を１つ選べ。

A．微生物間における交雑種の発生についての研究
B．腸内細菌が私たちの免疫機能に果たす役割についての研究
C．細菌など微生物の変化によって動物が進化することについての研究
D．病原菌を除去することによって動物の免疫力を上げ寿命を延ばす研究

10. 下線部(10)における takes の意味にもっとも近い語を 1 つ選べ。

A. requires

B. receives

C. dances with

D. deprives

11. 下線部(11)において述べられている内容にもっとも近いものを 1 つ選べ。

A. 交雑種の高い致死率には細菌が果たしている役割がある。

B. 細菌が病原菌として動物の身体に害を為すことで死に至る。

C. 血液中のウィルスを除去することで交配種の生存率が上がった。

D. かつて生存していた交雑種が死に絶えたことにより細菌が繁殖した。

12. 下線部(12)における hologenome の説明としてもっとも適切なものを 1 つ選べ。

A. 個体の細胞内の DNA の総体

B. 生物界における全遺伝情報の和集合

C. 遺伝情報を進化論の観点から立体状にマッピングしたもの

D. 微生物叢，ミトコンドリア DNA，細胞の DNA をあわせた遺伝情報の総体

13. 下線部(13)における diets にもっとも意味が近いものを 1 つ選べ。

A. foods

B. test tubes

C. environments

D. parliaments

14. 下線部(14)の括弧内の和文に対応する英文を，文頭を What で始め，off and on? で終わるように，以下の括弧内の語句から完成し，3番目と8番目にあたる語の組み合わせを1つ選べ。

What (1) (2) *(3) (4) (5) (6) (7) *(8) (9) (10) off and on?

[turning, role, you, genes, might, do, play, in, microbes, think]

	*(3)	*(8)
A.	microbes	play
B.	you	in
C.	might	play
D.	think	role

15. 下線部(15)で示唆されている細菌叢による活性化の対象に該当しないものを1つ選べ。

A. 味覚

B. 脳機能

C. 消化機能

D. 免疫機能

16. 本文の主旨にもっとも適合するものを1つ選べ。

A. 腸内バクテリアには善玉腸内細菌と悪玉腸内細菌がある。

B. 腸内細菌が存在することで交雑種は生き残ることができる。

C. 微生物叢の変化によって同種個体間での交配が不可能となり，新種が誕生する。

D. 体内の細胞数の1割程度を占めるにすぎない微生物叢の DNA が進化プロセスの主役であることがわかった。

Ⅲ. 次の英文を読み，17～25 の問題に最も適した答えを選べ。

Humans have been using language for a long time, though no one knows how long exactly. Because sounds leave no fossils, clues about the early history of language are scarce. The subject has, nonetheless, prompted endless speculation[17]. The speculation got so bad in the nineteenth century that on March 8, 1866, the newly founded Société de Linguistique de Paris placed an official moratorium[18] on papers discussing the subject: article 2 of its regulations declared, "The Society will accept no communication concerning either the origin of language or the creation of universal language." More recent linguists have echoed the society's disgust with the subject. Writing in 1988, Noam Chomsky — the most influential linguist of the last half century — sided with the bored nineteenth century Frenchmen: "There is a long history of study of origin of language, asking how it arose from calls of apes and so forth. That investigation in my view is a complete waste of time."

In the last two decades, though, evolutionary psychology has once again made language origins a hot topic, especially after Steven Pinker and Paul Bloom published a learned essay, "Natural Language and Natural Selection," in *Behavioral and Brain Sciences*, a respected scientific journal, in 1990. What had once been forbidden is now becoming fashionable again, and several books and hundreds of articles on the subject appear every year. Oxford University Press has even started a series of scholarly books called Studies in the Evolution of Language. None of this means that our guesses are necessarily more accurate than they were two hundred years ago. We're still woefully ignorant[19] about where language came from.

We can say with confidence that humans have been using language for more than five thousand years, because we have writing at least that old. We can also say that it has probably been less than five million years, because the fossil records tell us our earliest hominid ancestors had a voice box ill suited to

speaking. But "somewhere between five thousand and five million years" is a frustratingly broad range. Virtually all language scholars draw a line between animal communication and the tremendous richness and complexity of human language, but presumably our species had to move across that (23)_____. How we did it and when remain provocative mysteries. We can make a very conservative estimate, though, and say that human beings have been using language as we know it for about a hundred thousand years. A language called "English" split off from the others around the year A.D. 500.

If language, then, is around a hundred thousand years old, and English is fifteen hundred years old, how old are "good and "bad" English? When, in other words, did people begin (20)singling out one variety and considering it correct, with all other widely used varieties deemed improper? Our notions of proper English are only around three hundred years old — a very recent innovation indeed. For just one third of 1 percent of the history of language in general, and for just 20 percent of the history of our own language, have we had to go to school to study the language we already speak.

【Source: Jack Lynch, *The Lexicographer's Dilemma*, Walker Publishing Company, Inc, 2009. pp. 9–10】

17～19 の問題については，本文の文脈上，下線語(17)，(18)，(19)，(20)の意味にそれぞれ最も近いものを選べ。

17. What does the word (17)speculation mean?

A. The search of truthful facts or information

B. The idea that facts from information are true

C. Information about facts presented for analysis

D. Theory or opinion based on incomplete facts or information

18. What does moratorium (18) mean?

A. A freeze or suspension of an activity

B. Papers or essays to communicate ideas

C. A meeting or gathering to discuss rules

D. The acceptance or approval of new theories

19. What does ignorant (19) mean?

A. sad or unhappy

B. passionate or excited

C. competitive or aggressive

D. lacking knowledge or unaware

20. What does the phrase singling out (20) mean?

A. To pick or choose

B. To omit or exclude

C. To find or search

D. To enhance or improve

21～25 の問題については，本文の論旨に最も適した答えを選べ。

21. Why don't language scholars know how long humans have been using language?

A. Because the study for the origin of language is a waste of time.

B. Because there are very few records about the early origin of language.

C. Because the origin of language or the creation of universal language was a very long time ago.

D. Because communication concerning the origin of language was forbidden.

22. What does the phrase, "What had once been forbidden is now becoming fashionable again" refer to?

A. A respected scientific journal that was not recognized in the past has now made language origins a popular topic.

B. Several books and articles about evolutionary psychology that were not recognized in the past are now a popular topic.

C. The study of language origins was not recognized in the past but has now been made a popular topic by evolutionary psychology.

D. The study of evolutionary psychology was not recognized in the past but has now been made a popular topic by language origins.

23. Choose the word that best fits (23) to complete the sentence.

A. goal

B. time

C. barrier

D. challenge

24. What does "'somewhere between five thousand and five million years" is a frustratingly broad range' refer to?

A. Due to our records, it is difficult to estimate the time when humans spoke and wrote languages.

B. Due to our records, it is difficult to understand why the voice box for animal communication did not exist.

C. Due to our records, it is difficult to determine the time between animal communication and human language.

D. Due to our records, it is difficult to agree upon the differences between animal communication and human language.

25. Why do English speakers have to "go to school to study the language we already speak"?

A. To learn about how to use correct English properly.

B. Because English is a recent innovation that is changing.

C. To learn about the history of the "good" and "bad" English.

D. Because it is important to learn the different varieties of English.