

奈良県立医科大学 推薦

平成 30 年 度

試 験 問 題 ①

学 科 試 験

(9 時 ~ 12 時)

【注 意】

1. 試験開始の合図があるまで、この問題冊子の中をみてはならない。
2. 試験教科、試験科目、ページ、解答用紙および選択方法は下表のとおりである。

教 科	科 目	ペー ジ	解 答 用 紙 数	選 択 方 法
数 学	数 学	1 ~ 12	2 枚	数学、英語は必須解答とする。 理科は左の3科目のうちから1科目を選択せよ。
英 語	英 語	13 ~ 16	3 枚	
理 科	化 学	17 ~ 26	2 枚	
	生 物	27 ~ 40	2 枚	
	物 理	41 ~ 50	1 枚	

3. 監督者の指示に従って、選択しない理科科目を含む全解答用紙(10枚)に受験番号と選択科目(理科のみ)を記入せよ。
 - ① 受験番号欄に受験番号を記入せよ。
 - ② 理科は選択科目記入欄に選択する1科目を○印で示せ。

上記①、②の記入がないもの、および理科2科目または理科3科目選択した場合は答案全部を無効とする。
4. 解答はすべて解答用紙の対応する場所に記入せよ。
5. 問題冊子の余白を使って、計算等を行ってもよい。
6. 試験開始後、問題冊子の印刷不鮮明、ページの落丁・乱丁および解答用紙の汚れ等に気づいた場合は、手を挙げて監督者に知らせよ。
7. 解答用紙はいずれのページも切り離してはならない。
8. 解答用紙は持ち帰ってはならない。問題冊子は持ち帰ってよい。

英語

I. 次の英文を読んで、設問に答えよ。(*印の語には注がある。)(90点)

Scientists said they have developed a vaccine* to protect endangered* chimpanzees and gorillas against Ebola, which has wiped out tens of thousands of the wild apes in the last thirty years. The vaccine is given by mouth, the developers said, which means it could be disguised in food and left out for the animals to eat—easier and less stressful than other methods.

“Our closest relatives are being driven rapidly toward extinction* by diseases like Ebola, by commercial hunting and by the loss of their living areas, and we are responsible,” said Peter Walsh of the University of Cambridge, who took part in the research. “We now have (1)this technology that can help save them, and there is a moral obligation that we should do it.” In laboratory tests with ten chimpanzees, the vaccine was shown to be safe and to generate “a strong immune* response” to the Ebola virus, researchers reported recently in the journal *Scientific Reports*. Walsh is now developing a system for putting the vaccine into food that apes will eat in the wild. Only then can the vaccine be given to gorillas first and chimps later.

Ebola was first identified in what was then Zaire — now the Democratic Republic of Congo — in 1976. Since then, there have been several (2)outbreaks of the disease which is deadly to all members of the primate* family, including humans. A vaccine that works on one primate species is likely to be effective for them all.

Ebola “has already killed about a third of the gorillas in the world,” said Walsh — amounting to “tens of thousands” of animals. Gorillas and chimps tend to live in densely forested areas and are extremely shy of humans — making their population numbers hard to track. “When there is an outbreak in a local area, 95 or 90 percent of the gorillas die,” said Walsh. (3)For chimpanzees, the number of Ebola deaths is even less well-known but likely “in the low tens of thousands,” he added. Most gorillas live in an area covering parts of Gabon, Cameroon, Congo, Central African Republic, Guinea and Democratic Republic of Congo, while chimps are more widely spread across the

continent. Without an Ebola vaccine, argued Walsh, the world will end up with “a few remaining populations” of chimps and gorillas.

“We need to do it for our cousins in the wild,” he said of a vaccine program. It would have the added benefit of protecting humans — many of whom have caught the deadly Ebola virus from eating infected apes. For humans, at least 15 Ebola vaccines are being designed by laboratories worldwide — one of which the World Health Organization said last December may be “up to 100 percent effective” and could be available in 2018. More than 11,300 people died in the latest epidemic*, the largest in history, which started in West Africa in 2014.

The chimp trial was conducted at the University of Louisiana Lafayette’s New Iberia Research Center before the United States ended chimpanzee biomedical* research programs, now banned in all developed countries. Despite exceptions for veterinary* emergencies or research for species protection, there are no laboratories with captive* chimps left, Walsh said. This means, in effect, that the vaccine will have to be given to animals in the wild to determine the best dosage*, he explained — (4)a more complicated endeavor.

“We have to use less stressful methods like getting antibodies* from feces*” rather than drawing and testing blood to determine whether or not the vaccine worked, he explained. Safety standards for testing animal vaccines are much less strict than for humans. Walsh is worried that (5)動物の福祉を高めようとする善意の行為がワクチン開発の妨げになったり、野生動物の世界における死亡の原因となったりするという意図しなかった結果を招く可能性がある。

注

vaccine* ワクチン

endangered* 絶滅の危機にさらされた

extinction* 絶滅

immune* 免疫の

primate* 霊長類の動物

epidemic* 伝染病

biomedical* 生物医学の

veterinary* 獣医学の

captive* (野生に対して)捕らえられている

dosage* 投薬量

antibodies* 抗体

feces* 排泄物

設問

1. 下線部 (1) は何を指すか, 該当する最も適切な表現を本文より 英語 で抜き出せ.
(10 点)
2. 下線部 (2) の “outbreaks” と最も近い意味となる語を次の (a)~(e) の選択肢から選び,
記号で答えよ. (10 点)
 - (a) theories
 - (b) disruptions
 - (c) studies
 - (d) occurrences
 - (e) interruptions
3. 下線部 (3) について, その理由を日本語で記せ. (20 点)
4. 下線部 (4) は何を指すか, “more complicated” に注意して, 2 点挙げて日本語で記せ.
(20 点)
5. 下線部 (5) を英訳せよ. (30 点)

- II. The article suggests that humans have a “moral obligation” to protect nature. Explain in English why you agree or disagree in approximately 120 words. This task will be marked on both content and English language. (別紙解答用紙IIの様式にしたがって論述せよ。) (40 点)
- III. Write about your favorite place in English in approximately 80 words. This task will be marked on both content and English language. (20 点)