

2021年度  
大学院理工学研究科【生命理学専攻】博士後期課程  
一般選抜試験(第Ⅱ期)問題

# 英 語

開始時刻 午前10時00分

終了時刻 午前11時00分

**【注意事項】**

1. 解答用紙には受験番号、氏名を必ず記入してください。
2. 配布された答案用紙は試験が終了したら、必ず提出してください（問題用紙は提出しなくてよい）。

次の文章を読んで、問1～7に答えなさい。

Read the following sentences and answer the questions (1-7).

In 1996, under the direction of Ian Wilmut, Dolly was born which was genetically identical to an adult sheep. In the normal course of affairs an individual grows from a single fertilized egg after receiving half of its genetic material from each parent. In cloning the genetic material is taken from the cell of one living individual. The procedure works like this: The nucleus is removed from a single fertilized cell. A ( a ) is then removed from the cell of an adult member of the species and implanted in the enucleated zygote. This egg is then implanted into the ( b ) of a female member of the species and allowed to grow to term.

What makes cloning unusual, and what made Ian Wilmut and Dolly international sensations, has to do with the way the DNA in cells changes as an individual matures. At the start, all of the genes in a zygote are switched on—in other words, they can all work. As the individual ages, however, the cells start to specialize by switching off various genes, so that their effect is no longer detectable (no longer be expressed). For example, every cell in your body contains the genes for manufacturing insulin within its DNA, but insulin is actually manufactured only in parts of the pancreas. In all other cells in your body the gene for insulin is switched ( c ).

Obviously, the DNA that is implanted into the fertilized egg has various “switches” turned off, the exact sequence being determined by which part of the adult body the cell is taken from. By a process we do not understand very well, the fertilized egg is able to reset all the switches on the DNA—to turn the “off” switches back to “on”—so that normal development can take place. (d)This was at the heart of Wilmut’s great discovery.

Not every attempt at cloning is successful. With Dolly, 273 eggs went through the procedure of DNA replacement, and only one of them resulted in a live adult. Since Dolly, many other mammals have been cloned—cows, mice, and pigs to name a few. With mice there have been generations of cloned animals—clones, clones of clones, clones of clones of clones, and so on.

The biggest issue in the debate on cloning is the potential application of aspects of this technology to human being. On the one hand are those who feel that the moral dangers implicit in the new technology are so horrific that its application to humans should be banned. ( e ), the technique offers a chance for many infertile couples to produce biologically related children, an outcome that many would regard as a moral good.

As the debate continues, there is one point about clones that has to be made. Technically speaking, a clone such as Dolly is nothing more than an individual whose DNA is identical to that of another individual. We have a great deal of experience in dealing with individuals with identical DNA—we call them twins. A clone is simply a twin born years or decades late—what has been called an “asynchronous twin”. (f)Just as we would never dream of expecting one twin to give up its heart for implantation into the other, the prospect of clones being raised for the

harvesting of organs is a nightmare that will never come true. It has been my experience that if you substitute the word “twin” for “clone,” (g)much of the high-pitched debate on human cloning fades away.

(referenced from “The Nature of Science” Houghton Mifflin Company, 2003)

問1：文章中の（ a ）に、最も適切な語句を入れなさい。

Question 1: Choose the appropriate word in the parenthesis ( a ).

問2：文章中の（ b ）に入る最も適切な語句を、以下の5つの中から一つ選びなさい。

Question 2: Choose the appropriate word in the parenthesis ( b ) from the five options below.

oviduct      abdominal cavity      testis      uterus      ovary

問3：文章中の（ c ）に、最も適切な前置詞を入れなさい。

Question 3: Choose the appropriate preposition in the parenthesis ( c ).

問4：下線部（ d ）は何を示しているか、英語で簡潔に説明しなさい。

Question 4: Explain concretely the underlined part ( d ) in English.

問5：文章中の（ e ）に入る最も適切な語句を、以下の5つの中から一つ選びなさい。

Question 5: Choose the appropriate word or phase in the parenthesis ( e ) from the five options below.

Nevertheless      Accordingly      Therefore      On the other hand  
At the same time

問6：下線部（ f ）の大意を、日本語または英語でまとめなさい。

Question 6: Make a brief summary of the underlined sentence ( f ) in Japanese or English.

問7：下線部（ g ）のような結果になったのはなぜか、日本語または英語で簡潔に説明しなさい。

Question 7: Answer concisely why the underlined event ( g ) happened. Either Japanese or English is OK.

次の文章を読んで、問1～7に答えなさい。

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Question 1: Choose the appropriate word in the parenthesis ( a ).

問 2 : 文章中の ( b ) に入る最も適切な語句を、以下の 5 つの中から一つ選びなさい。

Question 2: Choose the appropriate word in the parenthesis ( b ) from the five options below.

oviduct      abdominal cavity      testis      uterus      ovary

問 3 : 文章中の ( c ) に、最も適切な前置詞を入れなさい。

Question 3: Choose the appropriate preposition in the parenthesis ( c ).

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問 5 : 文章中の ( e ) に入る最も適切な語句を、以下の 5 つの中から一つ選びなさい。

Question 5: Choose the appropriate word or phrase in the parenthesis ( e ) from the five options below.

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問 6 : 下線部 ( f ) の大意を、日本語または英語でまとめなさい。

Question 6: Make a brief summary of the underlined sentence ( f ) in Japanese or English.

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