

平成 16 年度

神戸大学農学部第 3 年次編入学

試験問題 英語

(注意)

1. 5 問題 (I ~ V) をすべて解答すること。(各問題 20 点)
2. 解答用紙のみ提出すること。

I. 次の英文を読んで以下の設問に答えなさい。

Climate change is not a new phenomenon. Change has been a consistent feature of global climate. For the past 10,000 years, however, the earth has experienced the longest period of consistently warm temperatures since the beginning of life. This warm period almost exactly matches the period over which modern agriculture has evolved. The reason that current predictions of climate change are compelling is that, for the first time, climate may be changing as a direct result of (A) activity. (a)People have released chlorofluorocarbons into the atmosphere – leading to the degradation of stratospheric ozone and increasing biologically harmful ultraviolet-B radiation. Through mining and combustion of (b)fossil fuels, deforestation, maintenance of livestock herds, and even through rice cultivation, enormous quantities of (c)greenhouse gases have been released to the atmosphere. Global circulation models predict that these greenhouse gases will increase global average temperatures by 1–8°C over the next century.

(出典: Peng, S. et al., ed.: *Climate Change and Rice*, Springer, 1995.)

注) chlorofluorocarbon: クロロフルオロカーボン、stratospheric: 成層圏の、
deforestation: 森林伐採、livestock herd: 家畜の群れ

問1. 文中の(A)に最もふさわしい英単語を入れなさい。(3点)

問2. 下線部(a)を和訳しなさい。(5点)

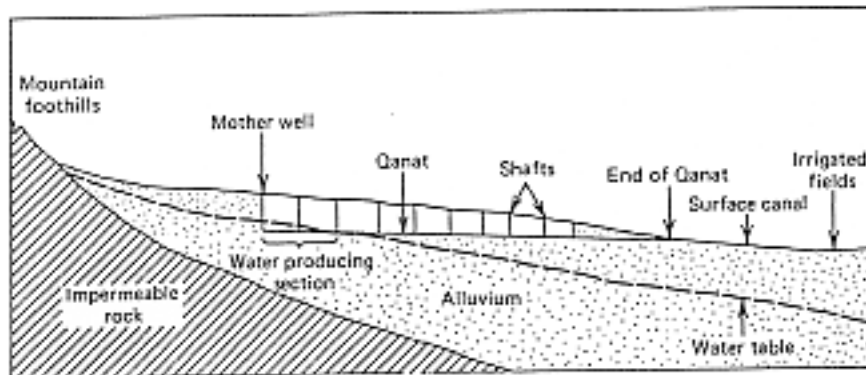
問3. 下線部(b)の代表的な2つを英語で書きなさい。(4点)

問4. 下線部(c)の代表的な2つを英語で書きなさい。(4点)

問5. 下線部(c)の発生・増加要因として4項目挙げられていますが、そのうち B (mining and combustion of fossil fuels) と C (deforestation) とでは内容的に異なります。その特徴的な相違点について簡潔に説明しなさい。なお、それらの項目の記述に B と C を使うことができます。(4点)

II. 次の文章は世界の乾燥地域に点在するカナート（用水路の一種）について述べた文章の抜粋である。下線部分を訳しなさい。（(a) 6 点、(b) 8 点、(c) 6 点）

(a) Groundwater in ancient times was supplied from horizontal wells known as qanats. These persist to the present day and can be found in a band across the arid regions of Southwestern Asia and North Africa extending from Afghanistan to Morocco. A cross section along a qanat is shown in figure. (b) Typically, a gently sloping tunnel dug through alluvial material leads water by gravity flow from beneath the water table at its upper end to a ground surface outlet and irrigation canal at its lower end. Vertical shafts dug at closely spaced intervals provide access to the tunnel. (c) Qanats are hand constructed by skilled workers employing techniques that date back 3000 years.



Vertical cross section along a qanat

(出典: Todd, D. K.: *Groundwater Hydrology*, John Wiley & Sons, 1980.)

注) qanat: カナート (用水路の一種)、arid: 乾燥した、alluvial: 沖積の (ここ 1 万年の沖積時代に堆積した)、gravity: 重力、water table: 地下水面、vertical shaft: たて坑

Ⅲ. 次の英文を読んで以下の設問に答えなさい。

Wouldn't it be great if you could take a pill to reduce your cancer risk? Many people, in fact, think they can — faithfully washing down their antioxidant tablet with coffee or soda pop. But (a) this is far short of what really can be done to mount the best cancer protection defense.

Antioxidants are just part of cancer protection picture — and there's evidence that antioxidants in food function more effectively than antioxidants in pills. It might be the way nature combines antioxidants in food. Or perhaps (b) it's the presence of other naturally substances in food that work in concert with antioxidants to fight off the changes in cells and tissues that lead to cancer. Or may be it's the fiber in food that helps “soak up” potentially cancer-causing substances. Most likely, though, it's a combination of all these factors — and other factors scientists haven't yet identified.

(出典: Kristine M. Napier, M.P.H., R.D.: *How Nutrition Works*, Ziff-Davis Press, 1995.)

注) cancer: がん, antioxidant: 抗酸化物質

問1. 下線部(a)が何を指すのかを日本語で書きなさい。(4点)

問2. 下線部(b)を和訳しなさい。(6点)

問3. 上記の文章に日本語で20字以内のタイトルをつけ、全文を100字以内で要約しなさい。(10点)

IV. 次の英文を読んで以下の設問に答えなさい。

The rediscovery of Mendel's laws of heredity in the opening weeks of the 20th century sparked a scientific quest to understand (a) the nature and content of genetic information that has propelled biology (A) the last hundred years. The scientific progress made falls naturally (B) four main phases, corresponding roughly (C) the four quarters of the century. The first established the cellular basis of heredity: the chromosomes. The second defined the molecular basis of heredity: the DNA double helix. (b) The third unlocked the informational basis of heredity, with the discovery of the biological mechanism by which cells read the information contained in genes and with the invention of the recombinant DNA technologies of cloning and sequencing by which scientists can do the same. The last quarter of a century has been marked by a relentless drive to decipher first genes and then entire genomes, spawning the field of genomics.

(出典: the human genome 特集号, *Nature*, 2001.)

注) heredity: 遺伝、relentless: 執拗な・徹底的な、decipher: 解読する、spawn: 生む、genomics: ゲノミクス・ゲノム科学

問1. 下線部(a)をよく説明できる意味の漢字を2文字で示しなさい。(3点)

問2. 本文中の(A)~(C)に入る最も適当な前置詞を書きなさい。(各3点)

問3. 下線部(b)を和訳しなさい。(8点)

V. 次の英文を読んで以下の設問に答えなさい。

Western science traces its origins to Greece, not to the ancient civilization of Mesopotamia and Egypt, for it was the Greeks who provided (a) a new way of looking at nature. One of the most astonishing events in intellectual history is the sudden appearance, seemingly *de novo*, of naturalistic thought—so dominant in the science of Aristotle and the science of today. This is the procedure of basing explanations of natural phenomena on the things and processes of nature. For example, when ascertainable and specific meteorological conditions prevail, liquid water is precipitated from clouds as rain. This is in marked contrast to a supernatural or mythical explanation which assumes that rain is the tears of weeping gods.

(出典: John A. Moore: *Science as a Way of Knowing*)

注) *de novo*: 新たに、Aristotle: アリストテレス

問1. 下線(a)の内容を的確に説明している英文を和訳しなさい。(10点)

問2. 下線(a)の内容と対立する立場を的確に表している語句を英語で記載しなさい。(10点)