

# 奈良県立医科大学 後期

平成 29 年 度

試 験 問 題

英 語

## 【注 意】

1. 試験開始の合図があるまで、この問題冊子の中を見てはならない。
2. 監督者の指示に従って、すべての解答用紙の受験番号欄に受験番号を記入せよ。
3. 問題冊子は表紙のほか 9 ページ、解答用紙は 3 枚である。
4. 問題冊子の印刷不鮮明、ページの落丁・乱丁及び解答用紙の汚れ等に気付いた場合には、手を挙げて監督者に知らせよ。
5. 解答はすべて解答用紙の対応する場所に記入せよ。
6. 解答用紙は切り離してはならない。
7. 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。

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)

The brain needs not only perceptual input but perceptual change, and the absence of change may cause not only excitement and attention deficit but perceptual abnormalities as well. Whether darkness and solitude is sought out by holy men in caves or forced upon prisoners in lightless prisons, the deprivation\* of normal visual input can stimulate the (1)inner eye instead, producing dreams, vivid imaginings, or hallucinations\*. There is even a special term for a series of brilliantly colored and varied hallucinations which come to console or torment those kept in isolation or darkness: "the prisoner's cinema."

Total visual deprivation is not necessary to produce hallucinations—visual monotony\* can have much the same effect. Thus sailors have long reported seeing things (and perhaps hearing them, too) when they spent days gazing at a still sea. It is similar for travelers riding across a featureless desert or polar explorers in a vast, unvarying icescape.

Soon after World War II, such visions were recognized as a special hazard for high-altitude pilots flying for hours in (2)an empty sky, and it is a danger for long-distance truckers focused for hours on an endless road. Pilots and truckers, those who monitor radar screens for hours on end—anyone with a visually monotonous task is susceptible to hallucinations. (Similarly, auditory\* monotony may lead to auditory hallucinations.)

In the early 1950s, researchers in Donald Hebb's laboratory at McGill University designed the first experimental study of prolonged (3)perceptual isolation, as they called it (the term "sensory deprivation" became popular later). William Bexton and his colleagues investigated this with fourteen college students housed in soundproof\* rooms for several days (except for a brief time out for eating and going to the toilet), wearing gloves and cardboard cuffs\* to reduce their sense of touch and semi-transparent goggles which allowed only a perception of light and dark.

At first the test subjects\* tended to fall asleep, but then, on awakening, they became

bored and desired stimulation—stimulation not available from the monotonous environment they were in. And at this point, (4)self-stimulation of various sorts began: mental games, counting, fantasies, and, sooner or later, visual hallucinations—usually a “march” of hallucinations from simple to complex, as Bexton and others described:

In the simplest form the visual field, with the eyes closed, changed from dark to light colour; next in complexity were dots of light, lines, or simple patterns of lines, circles, or other shapes. All 14 subjects reported such imagery, and said it was a new experience to them. Still more complex forms consisted of “wall-paper patterns,” reported by 11 subjects, and isolated figures or objects, without background (for example, a row of little yellow men with black caps on and their mouths open), reported by seven subjects. Finally, there were integrated scenes (for example, a procession of squirrels with sacks over their shoulders marching “purposefully” across a snow field and out of the field of “vision”; prehistoric animals walking about in the jungle). Three of the 14 subjects reported such scenes, frequently including dreamlike distortions\*, with the figures often being described as “like cartoons.”

(5)While these images first appeared as if projected onto a flat screen, after a time they became “compellingly three-dimensional” for some of the subjects, and parts of a scene might be upside down or turned around from side to side.

(6)After being initially startled, the subjects tended to find their hallucinations amusing, interesting, or sometimes irritating (“their vividness interfered with sleep”) but without any “meaning.” The hallucinations seemed external, proceeding independently, with little relevance or reference to the individual or situation. The hallucinations usually disappeared when the subjects were asked to do complex tasks like multiplying three-figure numbers, but not if they were merely exercising or talking to the researchers. The McGill researchers reported, as many others have, auditory and kinesthetic\* hallucinations as well as visual ones.

This and subsequent studies aroused enormous interest in the scientific community, and both scientific and popular efforts were made to duplicate\* the results. In a 1961 paper, John Zubek and his colleagues reported, in addition to hallucination, a change in visual imagery in many of their subjects:

At various intervals . . . the subjects were asked to imagine or visualize certain familiar scenes, for example, lakes, countryside, the inside of their homes, and so forth. The majority of the subjects reported that the images which they visualized were of unusual vividness, were usually characterized by bright colours, and had considerable detail. All these subjects were in complete agreement in their opinion that their images were more vivid than anything they had previously experienced. Several subjects who normally had great difficulty visualizing scenes could now visualize them almost instantly with great vividness . . . (7) ある被験者は数年前に付き合いのあった人々の顔をほとんど写真のように明瞭にくっきり思い浮かべることができた—このようなことは以前にはできなかったことであるが。 This phenomenon usually appeared during the second or third day and, in general, became more intense with time.

注

deprivation\* 欠乏, 遮断

hallucinations\* 幻覚 (幻視, 幻聴を含む)

monotony\* 単調

auditory\* 聴覚の, 聴覚に訴える

soundproof\* 防音を施した

cuffs\* 手錠

subjects\* 被験者

distortions\* 歪み

kinesthetic\* 運動感覚の

duplicate\* 再現する

#### 設問

1. 下線部 (1) の “inner eye” はどのような意味で用いられているか、日本語で記せ。
2. 下線部 (2) の意味をわかりやすい日本語で記せ。
3. 下線部 (3) の “perceptual isolation” とほぼ同じ意味を持つ語句をこの段落から英語で抜き出せ。
4. 下線部 (4) の “self-stimulation” とは何か、このような表現をしている理由を添えて、日本語で説明せよ。
5. 下線部 (5) の記述の内容を簡潔に要約した語句を、第5段落 (“At first... described:”) の中から英語で抜き出せ。
6. 下線部 (6) を和訳せよ。
7. 下線部 (7) を英訳せよ。

II. 次の英文を読んで、設問に答えよ。(\*印の語には注がある。)(95点)

(1)The lives of at least the surviving modern hunter-gatherers aren't "nasty, savage, and short," even though farmers have pushed them into the world's worst real estate. Hunters of the past, who still occupied rich lands, could hardly have been worse off than modern hunters. But all those modern hunter societies have been affected by farming societies for thousands of years and don't tell us about the condition of hunters before the agricultural revolution. (2)The progressivist view is really making a claim about the distant past: that the lives of people in each part of the world got better when they switched from hunting to farming. Archaeologists\* can date that switch by distinguishing remains of wild plants and animals from remains of domestic ones in prehistoric garbage dumps. How can one guess the health of the prehistoric garbage makers, and thereby test directly for agriculture's supposed blessings?

That question has become answerable only in recent years, through the newly emerging science of paleopathology\*. In some lucky situations, the paleopathologist has almost as much material to study as does a pathologist. For example, archaeologists in the deserts of Chile found well-preserved bodies whose medical condition at time of death could be determined by an autopsy\*, just as one would do on a fresh dead body in a hospital today. Waste matter of long-dead Indians who lived in dry caves in Nevada remained sufficiently well preserved to be examined for parasites\*.

Usually, though, the only human remains available for paleopathologists to study are skeletons\*, but they still permit a surprising number of insights about health. To begin with, a skeleton identifies its owner's sex, and his/her weight and age at time of death. (3)したがって、十分な骨格サンプルが手に入れば、生命保険会社がある年齢における予想される余命を計算する際に用いるような死亡率表を作成することが可能となる。 Paleopathologists can also calculate growth rates by measuring bones of people of different ages, can examine teeth for decayed areas (signs of a high-carbohydrate\* diet) or enamel\* defects (signs of a poor diet in childhood), and can recognize scars that

many diseases such as anemia, tuberculosis, leprosy, and osteoarthritis\* leave on bones.

One straightforward example of what paleopathologists have learned from skeletons concerns historical changes in height. Many modern cases illustrate how improved childhood nutrition leads to taller adults: for instance, we bend our heads to pass through doorways of medieval castles built for a shorter, poorly nourished population. Paleopathologists studying ancient skeletons from Greece and Turkey found a striking parallel. The average height of hunter-gatherers in that region toward the end of the Ice Age was a full five feet ten inches for men, five feet six inches for women. With the adoption of agriculture, height crashed, reaching by 4000 B.C. a low value of only five feet three for men, five feet one for women. By classical times, heights were very slowly on the rise again, but (4) modern Greeks and Turks have still not regained the heights of their healthy hunter-gatherer ancestors.

Another example of paleopathologists at work is the study of thousands of American Indian skeletons discovered in tombs in the Illinois and Ohio river valleys. Corn, first cultivated in Central America thousands of years ago, became the basis of intensive farming in those valleys around A.D. 1000. (5) Until then, Indian hunter-gatherers had skeletons "so healthy that it is somewhat discouraging to work with them," as one paleopathologist complained. With the arrival of corn, Indian skeletons suddenly became interesting to study. The number of holes in an average adult's teeth jumped from fewer than one to nearly seven, and tooth loss and abscesses\* became common. Enamel defects in children's milk teeth imply that pregnant and nursing mothers were suffering from severe lack of nutrition. Anemia increased four times in frequency; tuberculosis became established as an infectious disease; half the population suffered from syphilis\*; and two-thirds suffered from osteoarthritis and other chronic diseases. (6) Death rates at every age increased, with the result that only 1 percent of the population survived past age fifty, as compared to 5 percent in the golden days before corn. Almost one-fifth of the whole population died between the ages of one and four, probably because after stopping breast-feeding young children died from poor nutrition and infectious diseases.

Thus corn, usually considered among the New World's blessings, actually proved to be a public-health disaster. Similar conclusions about the transition from hunting to farming emerge from studies of skeletons elsewhere in the world.

注

Archaeologists\* 考古学者

paleopathology\* 古病理学 (paleo 古代に関する ; pathology 病理学)

autopsy\* 剖検, 病理解剖

parasites\* 寄生虫

skeletons\* 骨格

enamel\* 歯のエナメル質

carbohydrate\* 炭水化物

anemia, tuberculosis, leprosy, and osteoarthritis\* (順に) 貧血, 結核, ハンセン病,  
骨関節炎

abscesses\* (歯周病による) 膿瘍

syphilis\* 梅毒

設問

1. 第1段落(下線部(1)から“supposed blessings”まで)ではいくつかのペアの生活の質が比較されているが, それらのペアをすべて日本語で記せ.
2. 下線部(2)とはほぼ同一の見解を簡潔に示す表現を, 第1段落の中から抜き出して, 英語で記せ.
3. 下線部(3)を英訳せよ.
4. 下線部(4)はどういう意味か, 日本語で記せ.
5. 下線部(5)の示唆する内容を, “then”の指すものを明らかにして, 日本語で記せ.
6. 下線部(6)を和訳せよ.



III, Write 100 to 200 words in English explaining why you want to be a doctor. This task will be marked on both content and English ability. (40点)

[ 下書き用紙 ]