令　和　7　年　度
医学部前期入学試験問題

英　　語

(時間：100 分)

注　意　事　項

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いけません。

2　問題冊子は本文 6 ページ，解答用紙は 3 枚です。

3　試験中に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付いた場合は，手を挙げて監督者に知らせなさい。

4　解答は，すべて解答用紙の所定の欄に記入しなさい。

5　字数制限のある設問では，指示がない限り句読点や英数字も 1 字につき解答欄 1 マスを使い解答しなさい。

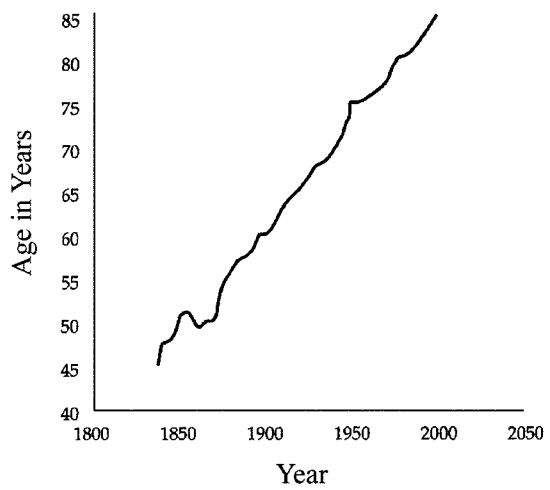
6　問題冊子の余白は，下書き等に利用して構いません。

7　試験終了後，解答用紙のみを回収します。

〔1〕 次の文章を読み，問いに答えよ。

Look at Figure 1 and let your eyes imagine how the graph could continue upwards. You may ask yourself whether, as [1]life expectancy has increased at the rate of two to three years every decade, there is any limit to how long people will live. The majority of children born in the West today can be expected to live beyond 100. But why stop there? Why not 150, or 200, or even beyond?

Figure 1 [2]*Best Practice Life Expectancy*



As with most scientific debates, there is a wide range of (A) views. Much discussion focuses on whether there is a natural limit to human life, and if there is, what that might be. The [3]pessimists argue that improvements in nutrition and a big breakthrough in tackling infant mortality are (B), and that the [4]diseases of prosperity, a more [5]sedentary lifestyle and rising [6]obesity will limit any further increase in life expectancy.

Others take a more (C) view, arguing that public education will continue to be a powerful [7]lever in boosting life expectancy and, combined with technological innovations, will continue to increase [8]longevity. Historically the combination of public education, the benefits of technology, early diagnosis and more effective treatments have all helped overcome previous barriers to life expectancy. Why wouldn't they continue to do so (2) going forward? Indeed within this group of optimists are those who take an almost unthinkable view, arguing there is no natural limit to human life, and scientific progress and technology will create life expectancies that approach many hundreds of years.

Which of these [9]schools of thought is right clearly has enormous consequences. Figure 1 suggests that if there is a limit, we don't seem to be close to reaching it. Best practice life expectancy would start to [10]level off if longevity is indeed approaching a peak, but as the graph shows, (3)_____. Personally [11]the authors tend to agree with the (D) optimists: we imagine that the rises in life expectancy will begin to slow down, perhaps at ages of 110 or 120. Of course, no one can know. But for us, the most important fact to remember is that the concept of the 100-year life is not science fiction or some wild guess about the future, nor is it an upper limit only for a lucky few. This is such a fascinating question precisely because there is compelling evidence that babies born today have a high chance of living considerably more than 100 years.

There is one more technical point to take into consideration before leaving this topic of longevity. If you read more about longevity, you will notice there are conflicting predictions about how long people will actually live. This conflict arises in part because there is more than one way of making the calculations of future life expectancy. (4) To illustrate, let's consider an eight-year-old kid. To forecast their life expectancy, population scientists have to consider their mortality risk as they grow older. In forming a view of how long an eight-year-old will live, what should be the assumptions of their life expectancy at age 55 (which is the average age of the authors right now)? Could it be that in 47 years' time, when these eight-year-olds actually reach the age of 55, they have the same life expectancy as we do now? (5) Or should the assumption be that 47 years later the life expectancy of a 55-year-old will be much (6)_____ as a result of further innovations in public education and health technology?

Clearly the answer to that question will lead to very different estimates of their life expectancy. If scientists assume that the eight-year-old, when they are aged 55, has the same life expectancy as us now, then they are using a *period* life expectancy measure. If, however, they assume that the eight-year-old, when they reach age 55, will benefit from further improvements in life expectancy, then they are using a *cohort* estimate of life expectancy. Obviously the conclusion of life expectancy using the 〈 a 〉 estimate will be considerably longer than that using the 〈 b 〉 estimate, since the former takes into account likely future improvements. We have chosen here to show 〈 c 〉 estimates in Figure 1, which assumes continued improvements in education and healthcare. Interestingly (and this is important) many economic estimates of life expectancy (developed, for example, for pension purposes) use the 〈 d 〉 estimates. By doing so they are effectively [12]taking any future innovation in longevity out of the equation. It seems to us that, given historical trends, this [13]substantially underestimates future life expectancy, which is why we have chosen to use data from 〈 e 〉 estimates.

(Lynda Gratton & Andrew J. Scott, *The 100-Year Life: Living and Working in an Age of Longevity*, 2016, modified)

注

[1]life expectancy: 平均寿命あるいは平均余命(ある年齢の人があと何年生きられるかの統計的期待値。0歳の平均余命が平均寿命)

[2]Best practice life expectancy: (年ごとに示される)平均寿命が最も長かった国の平均寿命(同じ国とは限らない)

[3]pessimist: 悲観的に考える人

[4]disease of prosperity: 繁栄の病

[5]sedentary: 座りがちな

[6]obesity: 肥満

[7]lever: 手段

[8]longevity: 寿命

[9]school of thought: 考え方

[10]level off: 横ばいになる

[11]the authors: 本文の著者

[12]take . . . out of the equation: …を考慮しない

[13]substantially: かなり

問 1 下線部(1)を日本語に訳せ。

問 2 下線部(2)について，何がどうするのかを本文に即して日本語で具体的に述べよ。

問 3 下線部(3)に入る最も適切な表現を下から選び，記号で答えよ。

ア the rate of progress has started to decline over the past two centuries

イ the pace of progress is faster than it has been for the past two centuries

ウ the pace of progress will probably slow down in the next century to come

エ the rate of progress continues at the same rate as in the past two centuries

問 4 下線部(4)を日本語に訳せ。

問 5 下線部(5)を日本語に訳せ。"it" の内容も分かるように訳すこと。

問 6 下線部(6)の部分に入る最も適切な1語を答えよ。

問 7 (　A　)～(　D　)の部分に入る最も適切な語をそれぞれア～エのうちから1つずつ選び，記号で答えよ。

(A)
- ア changing
- イ effective
- ウ general
- エ opposing

(B)
- ア apparent
- イ done
- ウ encouraging
- エ likely

(C)
- ア optimistic
- イ pessimistic
- ウ profitable
- エ specific

(D)
- ア genuine
- イ liberal
- ウ moderate
- エ total

問 8 〈　a　〉～〈　e　〉の部分に入る適切な語としてそれぞれ cohort または period のいずれかを選び，答えよ。

〔2〕 次の文章を読み，問いに答えよ。

Science has had a significant impact upon our lives. This fact cannot be denied. Science has revealed to us how different species arise, the causes of our world's changing climate, and many of the [1]microphysical particles that constitute all matter, among many other things. (1)Science has made possible technology that has put computing power that was almost unimaginable a few decades ago literally in the palms of our hands. A common smartphone today has more computing power than the computers that NASA used to put astronauts on the Moon in 1969! There are, of course, many additional ways in which science has solved various problems and (i)penetrated previously mysterious phenomena. A natural question to ask at this point is: why discuss this? While we all appreciate science and what it has accomplished for modern society, there remain confusions about science, how it works and what it aims to achieve. We should address some specific confusions about one key aspect of science: how it explains the world.

A first step in getting a clearer understanding on how science explains the world is to consider why science even attempts to explain the world. What exactly does science try to achieve? Or, perhaps putting the question more accurately, what do we seek to accomplish by employing the methods of science? It is widely accepted that there are three primary aims of scientific activity: prediction, control, and explanation of natural phenomena. (2)Different domains of science emphasize some of these aims more than others. For instance, [2]paleontologists don't spend a lot of time focusing on controlling phenomena, whereas [3]biomedical researchers devote a tremendous amount of effort to controlling infections and diseases. (A) these differences in emphasis, explanation is a common [4]thread linking all these aims. For this reason, it isn't uncommon to hold explanation to be the most important of these three primary aims of science. As the [5]US National Research Council has said, "the goal of science is the construction of theories that can (B) explanatory accounts of features of the world."

What makes explanation so important to science? The answer lies in what successful scientific explanations give us: understanding. Very roughly, understanding arises when we grasp how various features of the world depend upon one another. When we encounter the scientific explanation of some phenomenon, our understanding of the world increases. (C) this increased understanding, we are often able to better predict and control phenomena. For example, having scientific explanations of why and how something like the 2019 novel [6]coronavirus ([7]SARS-CoV-2, the virus responsible for the COVID-19 [8]pandemic) evolved, helps us to better 〈 a 〉 the mechanisms by which this virus reproduces and is transmitted. Of course, once we 〈 b 〉 how this virus is transmitted from person to person, we can 〈 c 〉 which situations are likely to increase or decrease its spread, as well as when we are apt to see significant rises in the number of infected people. Additionally, this understanding can allow us to put into place guidelines that may help 〈 d 〉 the spread of the virus. Furthermore, it is the understanding of SARS-CoV-2 that has allowed us to produce effective vaccines. Without such understanding, it is difficult to see how we could manage any of these (ii)feats.

Considering the role that understanding plays in both prediction and control, (3)it is maybe a bit misleading to characterize science as having three primary aims as we did above. P. W. Bridgman, a Nobel Prize-winning [9]physicist, once said "The act of understanding is at the center of all scientific activity." Another Nobel Prize winner, Erwin Schrödinger, claimed that the foundation of the entire modern scientific worldview rests upon the "hypothesis that the display of Nature can be understood." Understanding is central to science, and perhaps it is most accurate to say that the primary aim of science is to produce understanding via scientific explanations. Using the understanding gained via scientific explanations to yield accurate predictions and to allow for increased control of phenomena are important secondary aims of science. There are, of course, important [10]caveats and qualifications of this (D) between the goals of science. For instance, science often makes use of models (representations of events/phenomena in the world) in order to explain and predict phenomena. In many cases, however, we might be forced to make choices between models that offer better scientific explanations and models that make more accurate predictions.

(Kevin McCain, *Understanding How Science Explains the World*, 2022, modified)

注

[1]microphysical particle: 物理的微粒子
[2]paleontologist: 古生物学者
[3]biomedical: 生物医学の
[4]thread: 要素
[5]US National Research Council: 米国学術研究会議
[6]coronavirus: コロナウイルス
[7]SARS-CoV-2: 新型コロナウイルス
[8]pandemic: 世界的流行
[9]physicist: 物理学者
[10]caveat: 補足説明，但し書き

問 1 下線部(1)を日本語に訳せ。

問 2 下線部(2)の内容を 80 字以内の日本語で説明せよ。“these aims” が示すものを明示すること。

問 3 下線部(3)のように言える理由を 120 字以内の日本語で説明せよ。

問 4 下線部(i)と(ii)に意味が最も近い語をそれぞれア～エのうちから 1 つずつ選び，記号で答えよ。

(i)
ア traced
イ detected
ウ clarified
エ experienced

(ii)
ア achievements
イ fields
ウ positions
エ risks

問 5 （ A ）～（ D ）の部分に入る最も適切な語句をそれぞれア～エのうちから 1 つずつ選び，記号で答えよ。

(A)
ア For lack of
イ Despite
ウ Because of
エ Based on

(B)
ア compare
イ provide
ウ observe
エ receive

(C)
ア At the expense of
イ In comparison with
ウ For the sake of
エ By virtue of

(D)
ア interaction
イ gap
ウ relationship
エ similarity

問 6 〈 a 〉～〈 d 〉の部分に入る最も適切な語をそれぞれ control, predict, understand のうちから 1 つずつ選び，答えよ。

〔3〕 Read the following passage and answer the questions (Questions 1–4).

In India, government hospitals face difficult conditions. Doctors are often overworked, resting in crowded rooms without locks. Sometimes, two doctors share a bed. Relatives of patients often get angry and challenge doctors' [1]diagnoses, while there are not enough security guards to [2]maintain order.

Young doctors talk about working long [3]shifts, sometimes for several days without rest. The work environment is tough, with rooms and [4]wards that are not safe or clean. This makes it harder for doctors to learn and do their jobs because they are constantly dealing with urgent cases.

Recently, these problems have gained attention after a tragic incident in [5]Kolkata. A 31-year-old junior doctor was attacked while resting after a 36-hour shift. The police arrested a man, believed to be the main suspect after he was seen on a security camera entering the hospital late at night.

This event has caused protests across the country. Doctors, students, and human rights [6]activists are demanding justice for the victim. (A)彼らはまた，医師，特に女性のためのより安全な労働条件とさらなる保護を望んでいます。 Many doctors went on strike to show their frustration.

Dr. Susmita Sengupta, who worked in a government hospital for a year before moving to a private [7]practice, said people protested because they could relate to the victim's experience. According to her, the lack of security and the difficulties female doctors face in being heard make working in Indian hospitals very hard. Following the Kolkata attack, India's [8]Supreme Court set up a national [9]task force to recommend ways to improve safety in hospitals.

The New York Times spoke with more than a dozen Indian doctors, both in India and abroad. Some doctors were afraid to give their names because they worried about their safety. They spoke about verbal and physical abuse from patients' families who had become frustrated. These doctors, who chose their profession to save lives, often feel hopeless after working in such a stressful environment.

Some doctors leave for private practice, while others move to other countries. Dr. Richa Sharma went to the U.S. in 2018 to complete her training. She decided to leave India because she was unhappy with the medical system there. She felt that the system, which is meant to help patients, does not always work well. She also worried that she would lose her [10]compassion for patients if she treated hundreds of people a day, feeling like she was working in a factory.

A junior doctor in India, who didn't want to reveal her name, said that those who protested had to cancel patients' appointments, which led to angry reactions. She received threatening messages and calls from patients. Now, she blocks patients' numbers after making calls.

Government hospitals provide healthcare for India's poor. While private hospitals may offer better services, they are expensive and not everyone can afford them. Many doctors train in government medical schools because they want to specialize in a certain area of medicine. The government has been trying to open more medical colleges to train more doctors.

However, many trained doctors stay in big cities where there are more hospitals and colleges. This leaves rural areas without enough healthcare services, especially for serious diseases like cancer. City hospitals, meanwhile, are overwhelmed with patients. People often wait for hours to see a doctor.

Doctors in India work very long shifts, and because there are so many patients, the workload is much heavier than in other countries. This constant pressure makes it hard for doctors to do their jobs well. Dr. Dhrubajyoti Bandyopadhyay, a [11]cardiologist who worked at several state-run hospitals in India before moving to the U.S., said the number of patients is overwhelming. In some cases, two or three doctors have to see up to 400 patients a day in the [12]outpatient department.

During his residency, Dr. Bandyopadhyay once tried to save an 80-year-old man by performing [13]CPR for 30 minutes, but the man did not survive. His relatives blamed Dr. Bandyopadhyay for the death and started verbally abusing him. Fifty people gathered and began shouting at him, and there was no one to protect him.

Violence against doctors is a growing problem. Dr. Aditya Yadav, a [14]surgeon, remembered a patient with acid burns threatening doctors with a bottle of acid when he didn't get the treatment he wanted. Even in private hospitals, doctors face threats and keep security guards nearby.

Many doctors feel like they are either seen as [15]superhuman or not human at all, as they try to manage under impossible conditions.

(*New York Times*, 2024, modified)

Notes:

[1]diagnosis: a doctor's opinion of what is wrong with someone who is sick

[2]maintain order: to make sure that people behave and do not fight with each other

[3]shift: a period of work in a place such as a factory or a hospital

[4]ward: an area in a hospital where patients who require the same kind of treatment stay

[5]Kolkata: a major city in India (previously known as Calcutta)

[6]activist: someone who tries to cause social or political change

[7]practice: a business in which several people (such as doctors or lawyers) work together

[8]Supreme Court: the most important law court in a country

[9]task force: a group of people who are brought together to do a particular job

[10]compassion: a strong feeling of sympathy for someone and a wish to help them

[11]cardiologist: a doctor who specializes in treating diseases of the heart

[12]outpatient: a person who goes to a hospital for treatment, but who does not stay any nights there

[13]CPR (cardiopulmonary resuscitation): a method used to keep someone alive in a medical emergency, in which you blow into the person's mouth then press on their chest and then repeat the process

[14]surgeon: a doctor who is specially trained to perform medical operations

[15]superhuman: having or needing powers or abilities that are greater than those of most people

Question 1: Read the underlined section (A) and write the English translation.

Question 2: Choose the most appropriate answer to the following question.

According to the passage, what is one of the main challenges doctors face in Indian government hospitals?

A) Lack of medical supplies

B) Lack of proper medical training

C) Overcrowded working conditions

D) Poor communication between staff

Question 3: Choose the most appropriate answer to the following question.

According to the passage, what action resulted from the experience of the junior doctor in Kolkata?

A) Doctors in private practice offered support.

B) The government increased the number of medical colleges.

C) The hospital was shut down.

D) The Indian Supreme Court created a task force to improve hospital safety.

Question 4: Imagine you are a doctor in a rural part of Japan. What are some of the challenges you think you will face? How do you think you will overcome these challenges? Write at least 100 words in English and provide specific examples and suggested solutions for the challenges you predict.