

令和 5 年度個別学力検査問題
(医学部医学科)

英 語

前 期 日 程

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 この問題冊子は 13 ページあります。解答用紙は 3 枚あります。問題は 3 題 (I, II, III) あります。3 題すべてに解答しなさい。
試験中に問題冊子の印刷不鮮明, ページの乱丁・落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。
- 3 監督者の指示に従って, 解答用紙に受験番号と氏名を記入しなさい。
- 4 解答は, 解答用紙の該当欄に記入しなさい。
- 5 配付された解答用紙は持ち帰ってはいけません。
- 6 試験終了後, 問題冊子は持ち帰りなさい。

I Read the passage below and answer the questions. For all questions, write the capital letter (A), (B), (C), or (D) on your answer sheet.

[1] Imagine a world without insects. You might **breathe a sigh of relief** at the thought of mosquito-free summers, or you might worry about how agriculture will function without pollinators. What you probably won't picture is trudging through a landscape littered with feces and rotting corpses — what a world devoid of maggots and dung beetles would look like.

[2] That's just a snippet of the horrifying picture of an insect-free future that journalist Oliver Milman paints in the beginning of *The Insect Crisis*. “The loss of insects would be an agonizing ordeal eclipsing any war and even rivaling the looming ravages of climate breakdown,” he writes. And yet, the threat of an impending “insect apocalypse” doesn't get nearly the same level of attention as climate change.

[3] Researchers have been observing declining insect populations for decades. For instance, a study of nearly 40 years of data from a protected rainforest in Puerto Rico found that insect biomass had decreased by 98 percent on the ground and 80 percent in the canopy since the mid-1970s.

[4] The threats insects face are many: Light pollution, the increasing use of pesticides and climate change are just a few. And it's not only rare species that are at risk — it's also species that were once common around the globe.

[5] The reality of the crisis isn't as foreboding as Milman initially makes it seem. A world with no insects is unlikely, he acknowledges. Studies have found that while some species are in decline, others, such as freshwater insects, are doing fine. Rather than viewing the insect crisis as all insect populations on one downward-trending line on a graph, Milman suggests picturing lots of different lines — some holding steady, some sloping up or down, and some zigzagging. "Insects are being shifted to an unhappy state where there will be far more bedbugs and mosquitoes and far fewer bumblebees and monarch butterflies," he writes.

[6] Those changes in biodiversity come with consequences. Farmers may have to fend off more pests that attack soybeans, for instance, and insect-pollinated fruits and vegetables will become hard to grow at scale. Some insect-eating animals will decline as their food disappears, which has already happened to some birds, or even vanish. Water and soil quality could also be in jeopardy.

[7] Milman investigates the crisis by sharing his own adventures with insects, along with those of researchers, taking readers from the United States to Mexico, across the Atlantic to Europe and all the way to Australia. By sharing scientists' stories, he makes the plight of insects personal. There's a researcher in Denmark who has spent 25 years surveying insect populations by driving his old Ford Anglia down the same country roads and counting the number of bugs squashed against the windshield. Back when he started, he'd regularly have to clean insect guts off his car. But in recent years, he has experienced a lot of "zero insect days." As I read that, I struggled to remember the last time I had to scrape any dead insects off my car. Another researcher recalls the joy of catching fireflies on his family ranch in Texas as a child. I felt a wave of sadness as I thought about how I don't see fireflies as much as I did when I was a kid. With more streetlights and the switch to LED bulbs, it's becoming harder for fireflies to spot potential mates.

[8] Amid the doom and gloom, the book still manages to spark awe and delight with fun facts about insects. Bumblebee wings, for instance, vibrate so fast that they can produce gravitational forces of up to 50 g’s—five times greater than what fighter jet pilots experience. Milman also offers hope, sharing how certain insects are adapting to the threats and how some people are fighting to protect the critters through political campaigns and changing farming habits.

[9] By the book’s end, readers may find that their attitude toward some insects has shifted from **loathing** to love, or at the very least, appreciation. (I, for one, never cared much for flies—until I learned we wouldn’t have chocolate without them.) Milman makes clear how much we benefit from insects, and what we stand to lose without them. As one researcher puts it, our deeply woven reliance on insects is like the internet: When parts of the network are removed, the less internet there is, “until eventually it doesn’t work anymore.”

[10] A world without the internet would be difficult but livable. The same can’t be said for a world without insects.

(Allie Wilkinson, “Why you should care about ‘The Insect Crisis,’” *Science News*, April 26, 2022 より一部改変)

問 1 Which is the closest in meaning to “**breathe a sigh of relief**” in Paragraph [1]?

- (A) feel comfortable
- (B) be reluctant
- (C) worry about
- (D) get surprised

問 2 According to Paragraph [3], which part of the Puerto Rican rainforest lost the largest percentage of insect biomass in the past 40 years?

- (A) the ground
- (B) the air
- (C) the canopy
- (D) the fresh water

問 3 What is **NOT** listed as a cause of declining insect populations in Paragraph [4]?

- (A) the warming climate
- (B) an increased use of insect killing chemicals
- (C) pollution from micro-plastics
- (D) the increased use of man-made light

問 4 Which of the following best summarizes Paragraph [5]?

- (A) All insect populations are on one downward-trending line.
- (B) Some studies show that Milman is wrong about insect populations.
- (C) While many insect populations are declining, others are not.
- (D) Insects like bedbugs and mosquitoes have been zigzagging.

問 5 According to Paragraph [6], which is **NOT** negatively affected by changes in biodiversity?

- (A) wind-pollinated vegetables
- (B) water quality
- (C) some animals
- (D) insect-pollinated fruits

問 6 In Paragraph [6], what does “in jeopardy” mean?

- (A) in a good condition
- (B) in danger
- (C) in a safe environment
- (D) in vain

問 7 How does the researcher in Denmark conduct his research in Paragraph [7]?

- (A) He remembered the joy of catching fireflies and measured light.
- (B) He counted insects killed by his car while driving down the same road.
- (C) He carefully counted the number of insects found in his house for 25 years.
- (D) He would catch insects in a net while he slowly drove his Ford Anglia.

問 8 What reason does Paragraph [7] give for the decline of fireflies?

- (A) changes in weather due to global warming
- (B) the electric sounds that come from LED bulbs that only insects can hear
- (C) man-made light that makes it difficult to find other fireflies
- (D) declining insect populations of small insects that fireflies eat

問 9 According to Paragraph [8], about how much gravitational force do fighter jet pilots experience?

- (A) about as much as bumblebee wings
- (B) about 10 g's
- (C) about 50 g's
- (D) about five times more than bumblebee wings

問10 In Paragraph [9], what does “loathing” mean?

- (A) like
- (B) concern
- (C) interest
- (D) dislike

II Read the passage below and answer the questions. For all questions, write the capital letter (A), (B), (C), or (D) on your answer sheet.

[1] If the number of newborns each year is an indicator of the hope that young adults have in the nation's future — so that they feel secure enough to have a family — Japan's prospects are fairly **grim**. The estimated number of babies born in this country in 2019 fell more than 50,000 from the previous year to 864,000, the lowest in the past 120 years. That is roughly 40 percent of the figure in the mid-1970s, when the nation's total fertility rate — the average number of children a woman gives birth to in her lifetime — was last at the level required to sustain the population.

[2] As the elderly account for a larger proportion of the population, the number of deaths last year*¹ is estimated to have reached a postwar high of 1.37 million. The natural decline of the population — the number of deaths minus that of births — hit another high of 512,000. Japan lost a population equivalent to that of Tottori Prefecture (550,000) in a single year. The bad news is that the aging and shrinking of the nation's population is **forecast to accelerate** in the decades to come.

[3] The problem of rapid aging and decline of Japan's population with a falling number of births is nothing new. Since the 1990s, the government has taken steps to support young couples in child rearing, such as increasing the capacity of day care services. In October, it began offering free day care services and preschool education for children 3 to 5 years old. (), these efforts have failed to produce tangible*² effects in reversing the long-term trend of declining births. Instead, the data show that our population is aging and shrinking more rapidly than previously forecast.

[4] The government's efforts remain insufficient. Japan spends 1.3 percent of its GDP*³ on family-related public expenses such as nursery services and child allowances — roughly one-third of the level in European states*⁴ that maintain higher fertility rates. But the experience of the past decades also indicates that government policies alone cannot reverse the trend.

[5] Along with scrutinizing the shortcomings of government policies, more broad-based efforts are needed to address the demographic*⁵ woes*⁶, ranging from reviewing the social mechanism in which the burden of child-raising and household chores tends to focus on women, to fixing the prevalent labor practices at Japanese companies, such as the chronically long working hours that prevent both fathers and mothers from spending time with their families.

[6] While the choice of having children is up to each individual, we need to at least secure a social and economic environment where young people are not deterred by financial insecurity from having children — as is believed to have been the case with many of the “employment ice age” generation who graduated from school after the early 1990s collapse of the bubble boom.

[7] The falling population of children — which will translate into a shrinking pool of workers in the coming decades — endangers the future growth of the nation's economy by eroding its capacity to generate wealth and capping the base for consumer spending. The decline in the working age population (which fell from 87.16 million in 1995 to 75.45 million in 2018 and is forecast to decline to 68.75 million in 2030 and 59.78 million in 2040) shakes the foundation of the social security programs, in which premiums paid by the working generations cover the benefits for the growing elderly ranks.

[8] The aging and shrinking population makes it harder to keep up the various systems that have so far sustained this country. A complicating factor is the population flight to Tokyo, which has the lowest fertility rate among the nation's 47 prefectures. Despite the government's pledge to reverse the trend under the "regional revitalization" slogan, the net population inflow into the greater Tokyo area remains unabated*⁷. The very survival of many municipalities*⁸ will be in doubt in the not-so-distant future. In these areas, maintaining administrative services for residents under the current framework of local government is going to become difficult, while many small municipalities in rural depopulated regions are finding it increasingly hard to maintain their assemblies—the very foundation of local autonomy*⁹.

[9] The nation's current demographic woes are the outcome of a long-term trend since the 1970s, and the further aging and shrinking of the population is deemed unavoidable—since the number of women in primary child-bearing age has already declined significantly. There were 13 million women aged 25 to 39 in 2000; today, they number 9.7 million. The total fertility rate remains near its historic low, and a modest recovery in the rate is not expected to reverse the decline in the number of newborns and the falling population in coming decades.

[10] There are no quick remedies for the rapid aging and shrinking of Japan's population, but **inaction will only make matters worse**. We need to explore and identify effective measures, and steadily implement them. Equally important will be to adjust the nation's various systems and policies to the demographic reality before it's too late. With the aging of the population, annual social security expenses such as pension, medical services and nursing care for the elderly are forecast to hit ¥140 trillion in 2025, and balloon to ¥190 trillion in 2040—when the aging of the population is forecast to near its peak. Introducing necessary reforms and adjustments to these systems will contribute to easing the younger generation's sense of insecurity for the nation's future.

(The Japan Times Editorial Board, "Broaden the fight against demographic woes," *The Japan Times*, January 9, 2020 より一部改変)

"last year"*¹ = 2019 年

tangible*² = 有形, 具体的

GDP (Gross Domestic Product)*³ = 国内総生産

states*⁴ = 国々

demographic*⁵ = 人口統計上の

woes*⁶ = 悩み, 問題

unabated*⁷ = 衰えることなく

municipalities*⁸ = 市町村

autonomy*⁹ = 自治権

問 1 Choose the word that is closest in meaning to the **OPPOSITE** of “grim” in Paragraph [1].

- (A) precise
- (B) severe
- (C) bright
- (D) awful

問 2 Choose the expression that would best replace “forecast to accelerate” in Paragraph [2].

- (A) going to be inevitable
- (B) predicted to speed up
- (C) expected to remain steady
- (D) predicted to slow down

問 3 Choose the most appropriate word for () in Paragraph [3] from the words below.

- (A) Consequently
- (B) Moreover
- (C) Similarly
- (D) However

問 4 Which of the following best describes “the trend” in Paragraph [4]?

- (A) Japan's insufficient efforts
- (B) Japan's low fertility rate
- (C) Japan's shrinking GDP
- (D) Japan's lost decades

問 5 Choose the word that is closest in meaning to “scrutinizing” in Paragraph [5].

- (A) investigating
- (B) magnifying
- (C) ignoring
- (D) forgetting

問 6 Choose the word or expression that would best replace “translate into” in Paragraph [7].

- (A) undergo
- (B) be caused by
- (C) bring about
- (D) suppress

問 7 According to Paragraph [8], _____.

- (A) Tokyo’s low fertility rate has attracted many young people, thereby undoing the effects of “regional revitalization”
- (B) smaller communities are in danger of becoming unable to support their assemblies
- (C) “regional revitalization” has caused population shifts from rural to urban areas
- (D) it is expected that more young people will soon start paying premiums to support the elderly population

問 8 Choose the phrase that would best replace “inaction will only make matters worse” in Paragraph [10].

- (A) doing nothing will worsen the situation
- (B) taking action will certainly resolve the situation
- (C) only inaction can worsen the situation
- (D) taking action is all that matters now

問 9 Which of the following is **NOT** mentioned in the article as something that needs to be done to address Japan’s demographic woes?

- (A) reducing mothers’ childcare burdens
- (B) shortening working hours
- (C) raising salaries for all people
- (D) making it less expensive to raise children

問10 According to the article, what situation is predicted for the year 2040?

- (A) Japan’s working age population will be under 60 million and its annual social security expenses will exceed ¥290 trillion.
- (B) Japan’s working age population will be under 50 million and its annual social security expenses will reach ¥190 trillion.
- (C) Japan’s working age population will be slightly over 70 million and its annual social security expenses will nearly reach ¥200 trillion.
- (D) Japan’s working age population will be under 60 million and its annual social security expenses will nearly reach ¥200 trillion.

III Japan is currently suffering from a shortage of caretakers, especially for elderly people. According to one estimate, the country will have a shortage of 330,000 caretakers in 2025. One option is to have people come to Japan from other countries to do this work. Another would be to rely more on robots to help solve this problem. Which of these two options do you think would be better for Japan? Answer in English, in the form of a paragraph, in about 120 words. Start by stating your position. Give at least **two** reasons to support your proposed solution.

