

2025 年度

慶應義塾大学入学試験問題

薬 学 部

外国語(英語)

- 注 意
1. マークシートと記述式解答用紙(Writing Answer Section)の所定の欄に氏名と受験番号を記入し、マークシートの受験番号欄に受験番号をマークしなさい。記述式解答用紙には、受験番号を書く欄が 2ヶ所 あります。
 2. Q1～Q28は、最も適切な選択肢を1つ選び、マークシートの指定された場所に、右に示すマーク例に従ってマークしなさい。Writing Answer Questions A, B, C は、記述式解答用紙の指定された場所に記入しなさい。
 3. マークシートへのマークにはHBの黒色鉛筆を使用しなさい。
 4. マークシートと記述式解答用紙の指定された場所以外には、いっさい記入してはいけません。
 5. 問題冊子の1～18ページに、文章などが印刷されています。試験開始直後、総ページ数および落丁の有無などを確認し、不備がある場合はすぐに手を挙げて監督者に知らせてください。
 6. 問題冊子の余白は、メモなどに使用してかまいません。
 7. 不明瞭な文字は採点の対象としないので、注意して記入しなさい。
 8. 問題冊子は、必ず持ち帰ってください。

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[I]

Read the following article carefully and answer the questions. For each question, choose ONE BEST answer. On your answer sheet, find the number of the question and fill in the space that corresponds to the number of the answer you have chosen. For Writing Answer Question [A], write your answers [WAQ A1, WAQ A2, WAQ A3] in the corresponding spaces provided in the Writing Answer Section. For Writing Answer Question [B], write your answers in the corresponding spaces provided in the Writing Answer Section.

(Based on H. Holden Thorp, “*Teach philosophy of science*”, from *Science*, 2024.)

① Much is being made about the erosion of public trust in science. Surveys show a modest decline in the United States from a very high level of trust, but that is seen for other institutions as well. What is apparent from the surveys is that a better explanation of the nature of science—that it is revised as new data surface—would have a strong positive effect on public trust. Because scientists are so aware of this feature, it is often taken [Q1] that the public understands this too. A step toward addressing this problem would be revising undergraduate and graduate curricula to teach not just theories and techniques but the underlying philosophy of science as well.

② As a U.S. think tank’s studies have shown, trust in scientists and medical scientists in the U.S. was higher than for all other institutions surveyed except [WAQ A1]. There was a modest decline over the past 4 years, but a similar decrease was seen for other professions. In absolute terms, trust in [WAQ A Example] in 2023 was at 73%, whereas trust in most other institutions was far lower, with [WAQ A2] at 35% and [WAQ A3] at 24%. Despite this relatively high level of trust, Lupia *et al.* found ways that it could be enhanced. Most prominently, the study showed that 92% of respondents felt it important that scientists show they are “open to changing their minds based on new evidence,” which is of course what they must do.

③ Many scientists would be [Q3] to find that this idea needs to be reinforced. Science is, after all, a work in progress that changes as new findings cause revision and refinement of held interpretations. The history of science is a powerful narrative of this culture of self-correction, and it is the essence of science to attempt to make discoveries that change the way scientists think. But whenever science becomes important in the public eye, as with climate change and the pandemic, the continuous revision can become a target for those who wish to undermine scientific knowledge.

④ French sociologist Pierre Bourdieu coined the term “scholastic fallacy” to describe the tendency of academics to assume that everyone thinks about problems in the way that scientists do. As Bourdieu points out, most people do not have the time and effort to spend thinking about these issues in the same way as those for whom this is a full-time job. Academics often fail to recognize this and are mystified when the public doesn’t understand that interpretations are continually revised in light of new data, as has happened across history. Such revisions are the most [Q5] for a scientist to get published

in high-profile journals and gain scientific recognition, such as when footprints are found that change our idea about when humans were present in the U.S. or when a diabetes drug is found to have many other uses.

⑤ The scientific community has generally done a poor job of explaining to [] [] [] [] [] [] [] [] []. There are many reasons that make this difficult. The way scientific findings are reported in the media, particularly outlets that do not specialize in science journalism, is often highly simplified without the caveats that would give a more realistic picture while making the stories seem less compelling to some readers. Another obstacle is that, because of the scholastic fallacy, scientists tend to take [Q1] that their findings could be updated and forget to explain this to the public. And when scientists talk to each other, they tend to be passionate about their ideas and disagreements. When those conversations are processed by the public, they can easily be misinterpreted.

⑥ Resetting the public's understanding of how science works will be a big job, but a good place to start is with students who get science degrees. Unfortunately, most programs are full of educational classes about scientific principles, with few if any requirements on the history and philosophy of science. Because many undergraduate science majors pursue careers outside of science, including medicine, a shift in curricula would ultimately produce a public that is more literate in the way that science works. This means making hard decisions about how to fit a broader, deeper perspective into curricula that are already jammed tight with the necessary basics. However, it's [Q8] for scientists to make compromises in the way they teach for the greater good.

Q 1 . Which of the following words could best be added to [Q1] in paragraph ① (line 6) and paragraph ⑤ (line 7) ?

- 1 . over
- 2 . place
- 3 . part in
- 4 . up with
- 5 . for granted

Q 2 . Which of the following is true of the author's description in paragraph ① ?

- 1 . Graduate curricula should teach more than the theories of science.
- 2 . Science used to be distrusted, but trust in science has increased recently.
- 3 . The public trusts science too much, and scientists need to revise their thinking.
- 4 . When new scientific discoveries overturn conventional knowledge, trust in science remains unchanged.
- 5 . While trust in scientists has risen to very high levels in the United States, this may not be the case in other countries.

Writing Answer Question [A]

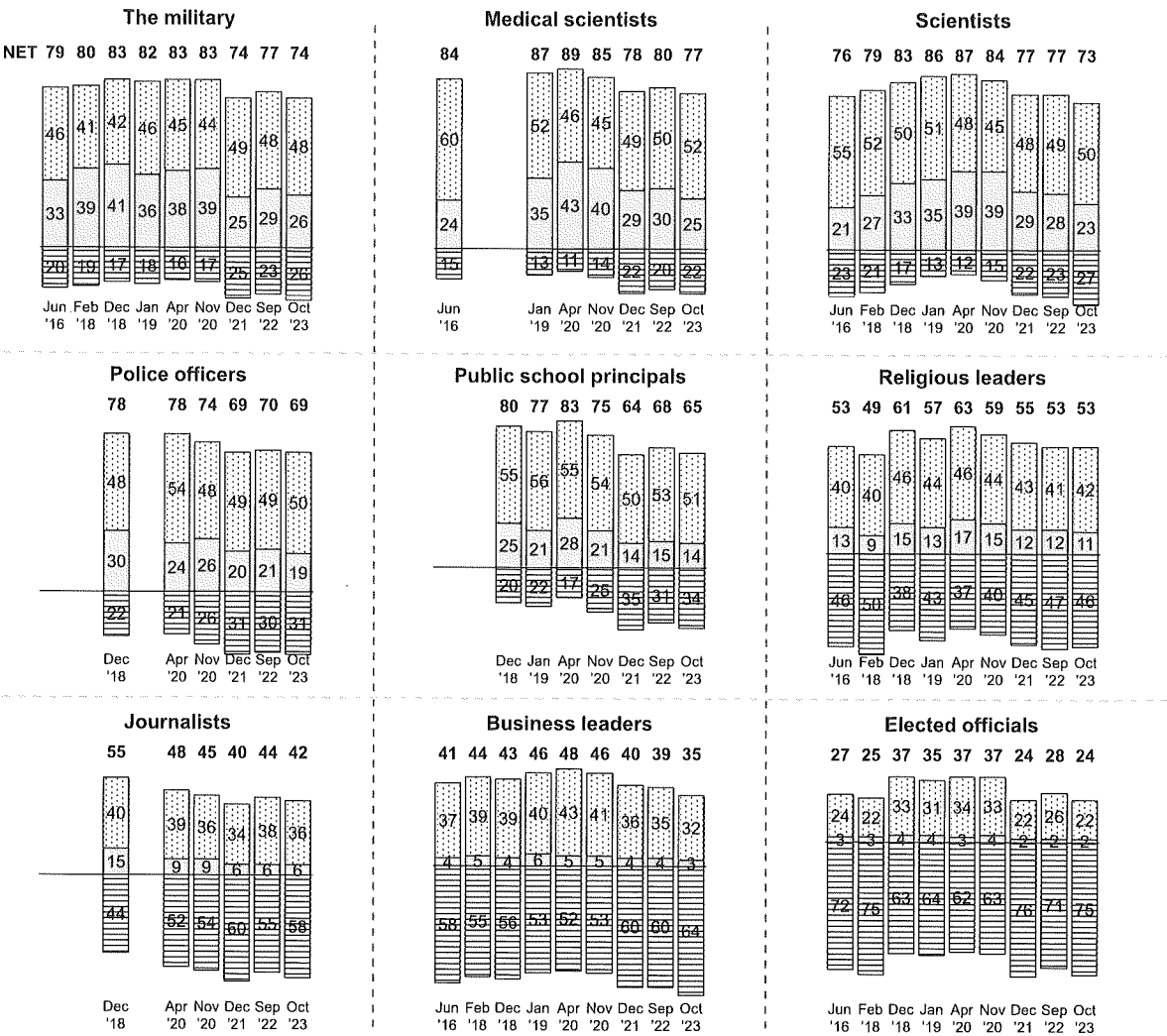
Look at the following material and write the occupation names that can best be added to [WAQ A1], [WAQ A2], and [WAQ A3], in paragraph ②.

[WAQ A Example]: *scientists*

Percentages of Americans who have confidence in various occupations

% of U.S. adults who have _____ of confidence in the following groups to act in the best interests of the public

■ A great deal ■ A fair amount ■ Not too much/No confidence at all



Note: Respondents who did not give an answer are not shown.
Source: Survey of U.S. adults conducted in autumn of 2023, regarding Americans' trust in various occupations.

Q 3 . Which of the following words could best be added to [Q3] in paragraph ③ (line 1) ?

- 1 . discouraged
- 2 . predicted
- 3 . satisfied
- 4 . sophisticated
- 5 . surprised

Q 4 . Which of the following is true of the author's descriptions in paragraphs ② and ③ ?

- 1 . No one wants to disrespect scientific knowledge.
- 2 . Very few scientists understand the essence of science.
- 3 . Through scientific pursuit, new discoveries can modify past knowledge.
- 4 . Due to the negligence of scientists, recent science has not been corrected.
- 5 . In times of climate change and pandemics, it is inevitable that science will be neglected.

Q 5 . Which of the following words could best be added to [Q5] in paragraph ④ (line 7) ?

- 1 . reliable way
- 2 . calm moment
- 3 . easiest manner
- 4 . agreeable occurrence
- 5 . responsibility process

Q 6 . Which of the following is true of the author's description in paragraph ④ ?

- 1 . The public has a positive impression against "scholastic fallacy".
- 2 . The public understands the essence of science just as well as scientists.
- 3 . The public easily recognizes that scientific knowledge is continually revised based on new data.
- 4 . Scientists do not have enough time to do research, because they have to deal with public criticism.
- 5 . Scientists do not usually have time to try to address the public's misunderstanding of the sciences as it is updated.

Writing Answer Question [B]

In the Writing Answer Section, put the following words into the proper order necessary to complete the sentence. Put them in the order that makes the best sense within the context of paragraph ⑤.

[far], [is], [is], [known], [public], [science], [so], [that], [the], [what]

The scientific community has generally done a poor job of explaining to [] [] []
[] [] [] [] [] [] [] [].

Q 7 . Which of the following is true of the author's description in paragraph ⑤ ?

- 1 . There are no reasons why scientists should explain new discoveries to the public.
- 2 . Scientists often forget to explain to the public that their discoveries can be modified.
- 3 . It is not important to communicate new discoveries to the public in a simplified manner.
- 4 . Media that does not specialize in science journalism should not report on scientific knowledge.
- 5 . Publicizing scenes of scientists passionately discussing topics with each other increases the credibility of scientists.

Q 8 . Which of the following word could best be added to [Q8] in paragraph ⑥ (line 8) ?

- 1 . easy
- 2 . forgetful
- 3 . pleasure
- 4 . tactless
- 5 . urgent

Q 9 . Which of the following is true of the author's description in paragraph ⑥ ?

- 1 . The philosophy of science is to discuss scholastic fallacy.
- 2 . Scientists should reset their thinking about how science works.
- 3 . Teaching the essence of science for undergraduate students is not difficult.
- 4 . Undergraduate education needs to be revised to make it widely known that scientific discoveries are subject to constant revision.
- 5 . There is so much to teach in the undergraduate curriculum, that we have no choice but to give up teaching philosophy of science.

[II]

Read the following article carefully and answer the questions. For each question, choose ONE BEST answer. On your answer sheet, find the number of the question and fill in the space that corresponds to the number of the answer you have chosen. For Writing Answer Question [C] write your answers in the corresponding spaces provided in the Writing Answer Section.

(Based on John Waller, "*The Discovery of The Germ*". Icon Books, 2002.)

① 'A new science has been born', gloated Louis Pasteur in June 1888; 'it has caused a genuine revolution in our knowledge of virulent and contagious diseases'. The Frenchman was not exaggerating. The germs responsible for tuberculosis and a number of other infectious diseases had already been found. The next ten years would see the discovery of the microbial causes of plague and a half a dozen other common infectious diseases as well. Virtually every year between 1879 and 1899, scientists unlocked the secret of another important infectious disease; never before had medicine witnessed progress so rapid or so fundamental.

② In fact, many doctors felt overwhelmed by the punishing pace of change. Those who had been taught from textbooks in which germs were never mentioned, now had to start almost from scratch. So much had to be learned and unlearned that many clung on to some parts of older medical theory, interpreting the new in light of the old. But for the new generations of doctors emerging from professional medical schools, the study of infectious disease began with Pasteur, Koch, Lister and Roux. Virtually everything that went before suddenly seemed obsolete: Hippocrates*¹ was the author of [Q11] (e.g., the precept of First do no harm to the patient) and nothing else of value. Medicine had ceased to be an art and had become a fully fledged science.

③ In reality, of course, the germ revolution hadn't emerged out of nowhere. Modern germ theory is the culmination of more than 2,000 years of observation and investigation. Nor did it immediately translate into massive health benefits. In the Western world, civilian deaths from big epidemic killers were already in steady decline thanks to the vast improvements in sanitation, drainage and water-quality made possible by Victorian public health reformers and civil engineers. Standards of nutrition were also on the rise, and with them people's resistance to infectious disease. As Pasteur himself noted in 1888, the germ revolution over which he had presided produced a transformation in human [Q12] more than in treatment or prevention.

④ But despite these caveats, it is hard to overestimate the importance of the fact that, for the first time in human history, doctors properly understood what causes infectious illness. At last they had a solid platform on which to build, and tangible benefits almost immediately accrued. The germ theory revealed that mankind is [Q13a] by disease agents invisible to the naked eye. Far from being restricted to obviously insanitary people and places, they might be found [Q13b]. Very careful sterile surgery, wide-ranging hygienic reforms in catering and food production, the chlorination of mains water and pasteurised dairy products were among the revolution's earliest and most important progeny.

⑤ A recognition of the deadly threat posed by unseen germs also had an enormous public impact. Around the turn of the century, studies found potentially lethal bacteria on clean fabrics, food and household objects, even children's toys boxed up and then taken out for the amusement of the next generation. Such findings shocked the public into adopting new attitudes about the prevention of sickness. Some of these bordered on the hysterical. Kissing, touching and sharing clothes and linen were strongly and openly discouraged. In many parts of the United States, even the common cups used during communion were threatened: cashing in on the growing fear of germs, Sanitary Communion Companies offered worried vicars patented sets containing individual glass cups, disinfectant solutions and serving trays. Some germ evangelists went further still and forcefully recommended [Q14] in social interactions.

⑥ More sober and less fetishist reactions to the invisible germ included large-scale public campaigns to persuade those with infectious diseases to avoid coughing and sneezing in others' faces and to dispose of contaminated material in responsible ways. Hundreds of rural mansions were converted into sanatoria, where those with contagious diseases were nursed in isolation. Hand-washing using powerful disinfectants became routine practice. Listerine, the first mass-produced mouthwash, appeared on the chemist's shelf. And for those who could afford such things, the ornate Victorian water closet gave way to the Spartan, almost puritanical, modern bathroom. The white china toilet surrounded with smooth, tiled walls and floors became the new ideal.

⑦ But it was the second-generation offspring of the germ revolution that most emphatically fulfilled Pasteur's 1888 dream of also 'destroying germs'. As he predicted, knowledge born of the germ theory gave previously unimaginable power to prevent and to fight infectious disease. From the earliest synthetic drugs, the sulphonamides developed by Paul Ehrlich and Sahachiro Hata, to the antibiotic revolution that has saved countless lives since the 1940s, the cure of bacterial infection has become a routine medical affair. The vaccinations we receive as children or before travelling to tropical countries are also the lineal descendants of the one Pasteur and Roux developed after finding the microbial agent of chicken cholera in 1880. How many of us would have gone to an early grave, were it not for the formulation of vaccines like the anti-tuberculosis jab?

⑧ Indeed, only the term 'revolutionary' can convey a proper sense of the magnitude of the change that medical practice has undergone. Until the mid-twentieth century, cynicism about the efficacy of medical remedies was the mark of the educated, self-aware doctor. After all, who but a quack could claim that the pharmacopoeia's myriad tonics and coloured pills did anything other than delude the patient into parting with their cash? 'I firmly believe that if the whole materia medica [i.e. medical drugs], as now used, could be sunk to the bottom of the sea, it would be all the better for mankind, – and all the worse for the fishes', wrote the American doctor, Oliver Wendell Holmes, in 1880.

⑨ By the end of World War II, doctors had much less need for bluffing. The drugs they dispensed in ever-increasing quantities actually worked. The amorphous category of untreatable diseases that had to be borne, with whatever stoicism the victim could muster, had shrunk dramatically. Antibiotics had put microbes on the back foot in a spectacular fashion. And, thanks to improved medical care, nutrition and sanitation, the biggest microbial killers in the Western world by 1974 – influenza and pneumonia – ranked way behind heart disease, cancer, strokes and accidents in the mortality stakes. Bronchitis (infection of the airways), the only other microbial illness making the top ten, barely scraped in. For the first time in human history, most Western patients with infectious illnesses could approach doctors in the confident expectation of a cure. Today, those who cannot be helped feel very badly let down. What a difference 100 years can make!

*1 Hippocrates: a Greek physician and philosopher, important in the history of Western Medicine.

Q10. Which of the following is the main reason why some doctors clung on to some parts of older medical theory (See the underlined sentence in paragraph ②, lines 3 and 4) ?

1. They welcomed younger doctors into joining their ranks.
2. They had not learned about germs in their medical education.
3. They believed that the new theory was superior to the old one.
4. They easily accepted the new germ theory behind infectious diseases.
5. They felt that the speed of change in learning new medical information was adequate.

Q11. Which of the following phrases could best be added to [Q11] in paragraph ② (line 7) ?

1. a novel
2. an oath
3. a newspaper
4. an award winning drama
5. a governmental constitution

Q12. Which of the following phrases is best suitable to [Q12] in paragraph ③ (line 8) ?

- 1 . 'acquaintances'
- 2 . 'architecture'
- 3 . 'knowledge'
- 4 . 'religion'
- 5 . 'vlogging'

Q13. In paragraph ④ (lines 4 and 6), which of the following contains a set of words that could best be added to [Q13a] and [Q13b], respectively ?

	Q13a	Q13b
1 .	accepted	somewhere
2 .	approved	everywhere
3 .	conditioned	nowhere
4 .	instigated	elsewhere
5 .	surrounded	anywhere

Q14. Which of the following phrases could best be added to [Q14] in the last sentence of paragraph ⑤ ?

- 1 . disapproval of vaccines
- 2 . abolition of the handshake
- 3 . destruction of all new drugs
- 4 . close personal conversations
- 5 . disadoption of all sanitary measures

Q15. Which of the following is NOT mentioned as a consequence of the recognition of the threat posed by unseen germs in paragraphs ④ and ⑤ ?

- 1 . The decontamination of milk.
- 2 . The creation of the microscope.
- 3 . The chlorination of water mains.
- 4 . The development of germ-free operations.
- 5 . The presence of potential dangers on common everyday items.

Q16. Which of the following statements best represents the key information the author is trying to make in paragraph ⑦ ?

- 1 . The germ revolution fulfilled Ehrlich's lifelong dream of destroying germs.
- 2 . The germ revolution has given us the power to prevent and fight infectious diseases.
- 3 . The germ revolution led to the development of vaccines, which didn't really prevent many deaths.
- 4 . The germ revolution has made the cure of all diseases that will ever exist an unusual medical occurrence.
- 5 . The germ revolution led to the development of technological software which has saved countless lives.

Q17. Which of the following statements best represents the shift in perspective that the quote by Oliver Wendell Holmes in 1880 illustrates in paragraph ⑧ ?

1. There was a questioning attitude towards the value of medical treatments.
2. There was a well embraced shift from traditional remedies to modern pharmaceuticals.
3. There was a complete and widespread growing trust in the effectiveness of medical drugs.
4. There was an increasing reliance on new types of medicine that were beneficial for mankind.
5. There was a growing awareness of the beneficial effects of medical drugs on the environment.

Q18. Which of the following best describes the tone of the author in paragraph ⑨ ?

1. Doubting
2. Homesick
3. Indifferent
4. Optimistic
5. Pessimistic

Q19. Based on a reading of the entire article, which of the following best represents the author's overall thinking on this topic ?

1. The germ revolution was a sudden and expected event that transformed medicine literally overnight.
2. The germ revolution was a mixed blessing, bringing both benefits and unintended negative consequences.
3. The germ revolution had a nondramatic impact on public health, leading to a sharp decline in infectious diseases.
4. The germ revolution was a quick and easy process that built upon mere decades of observation and investigation.
5. The germ revolution was primarily a philosophical revolution that changed our understanding of disease but had little practical impact.

Writing Answer Question [C]

In the Writing Answer Section, write in the corresponding spaces provided, the appropriate Japanese translation of the underlined phrase “pasteurised dairy products” in paragraph ④.

[III]

Read the following article carefully and answer the questions. For each question, choose ONE BEST answer. On your answer sheet, find the number of the question and fill in the space that corresponds to the number of the answer you have chosen.

(Based on Rupa Marya & Raj Patel, *Inflamed (Deep Medicine and the Anatomy of Injustice)*". Allen Lane/Penguin Books, 2021.)

① In 2008 a young doctor in training, Dr. Smith, felt frustrated reading CT scans without knowing anything about the patients as people. He started including a photo of patients' faces alongside their scans and then studied the impact on other doctors who read diagnostic images, who could see the person whose images they were analyzing. All of the doctors involved with the study reported feeling more empathy toward the patients after seeing the photograph, and in turn, the interpretations they gave were more "meticulous." Rehumanization can begin with something as simple as looking at a photograph. Rehumanizing, then, means seeing not only the human behind a CT scan but the more-than-human behind the picture of any individual. Our bodies have evolved in systems of deep relationships with the sun, soil, water, tides, seasons, single-celled organisms, viruses, animals, plants, fungi, and the rest of the teeming world. Each of those depends on relationships with one another. The study of ecology is becoming indispensable to the study of medicine because humans are not just a single animal, but a multitude, an ecology of beings living on us, in us, and around us.

② Studying the ways in which systems interact to create health or illness is the leading edge of a revolution of understanding in medicine. The reductionist understanding of disease in singular terms, such as one gene encoding one faulty protein or one drug targeting one receptor, can get us only so far. We evolved as systems within systems. There is nothing singular about us.

③ Systems-level understanding is yielding important new understandings in medicine and in the very concept of health. Our anatomical systems are embedded in more systems—ones that humans have engineered and that make up our surrounding ecologies. At this space of intersection, the medical imagination is limited.

④ Improving medicine begins with the project of rehumanization and reconnection, linking scans to people's faces; patients to their families, communities, and histories; peoples to their lands and mountains and waters; and relatives to one another across the vast web of life. It is a process of imagining a "we" that is bigger than the sum of you and me. It involves a far wider community than Facebook can ever offer.

⑤ When the world is in balance, we are too. But the modern world in all its structures is out of balance, leading to bodies that are badly damaged by chronic inflammation*¹. The biological cost, in the face of ongoing damage, is an accumulated wear and tear on the body known as allostatic load.

- ⑥ The abnormality of the modern world makes it incredibly hard for us to get back to a healthy equilibrium. The fast food marketed to us most frequently is unhealthy and contributes to damage that makes it harder to return to health. The air we breathe carries noise and particulate pollution that presents a cognitive and biochemical load for our brains. Living in a low-income neighborhood means carrying biomarkers of a higher allostatic load.
- ⑦ To be Black in the United States is to be confronted with daily acts of discrimination—sources of stress that manifest as higher blood pressure even while we are asleep. Instead of the restoration that sleep and melatonin afford, the allostatic load that racism brings effectively leaves Black people sleeping with one eye open. Differences in allostatic load are contributing to the disparities between health outcomes for cardiovascular death between Black people and white people. Increased allostatic load may explain why most people in modern industrial societies develop high blood pressure as they get older—beginning even in childhood. People in hunter-gatherer and agricultural societies don't experience the same age-related high blood pressure and have lower rates of high blood pressure altogether.
- ⑧ We also live in a world steeped in industrial chemical noise. Signals from some of the thousands of products of the pesticide, plastics, and manufacturing industries are already interfering with our bodies' own biochemical conversations. Endocrine disruptors mimic or interfere with our own hormones, leading to a wide range of problems from developmental disorders to cancer.
- ⑨ In spite of the evidence that the structures around us are causing these health problems, medicine often treats endocrine conditions as something patients have done to themselves. One of the most troubling and widespread examples is type 2 diabetes. When your body is deficient in insulin or when your cells grow insensitive to it, blood sugar levels can fluctuate harmfully. The possible dire consequences include blindness, tissue death, cardiovascular disease, and kidney failure. One in eleven adults on Earth now has the disease, with the highest concentrations in Asia: China and India lead the world, with 110 and 70 million cases, respectively. The main drivers are generational poverty, chronic stress, and ultraprocessed foods. Predictably, Black, Indigenous, and other people of color suffer the most from the colonial diet's scourge, with higher diabetes rates than settler populations across the world. This happens not by magic but by design. In the United States, advertising for sugary drinks increased by \$1 billion from 2013 to 2018, with Black and Latinx youth as the primary targets.
- ⑩ Furthermore, feelings of isolation create a vicious circle between the body and the environment. In cities, people have more access to the kinds of foods that will provide both a short-term uplift and a longer-term predisposition to diabetes. A full spectrum of products exploit the disruptions of modern life to help us cope with this stress, to make us temporarily less unhappy. Such products seek to hook us with a promised return to some imagined state of [Q23]. The physical environment drives us, through anxiety and opportunity, to the kinds of behaviors that generate more inflammation: overeating, drug use, and self-isolation.

⑪ Chronic [Q24] makes the body vulnerable to addiction, increasing levels of emotional [Q24] cause decreased impulse control, and the more chronic the [Q24] becomes, the more maladaptive the behavior becomes.

⑫ Central to the story of how human well-being is regulated in nature is the chemical language of hormones. Even though we're at the early stages of understanding the human-web-of-life boundary, we are a little further along in understanding how human bodies create hormones that react to being in harmony with their surroundings and in relationships. One such hormone is oxytocin.

⑬ Oxytocin is essential to social cooperation and empathy and to modulating the impact of stress. Called "the love hormone" because of the feeling of connection it engenders, oxytocin [Q25a] an organism's responsiveness to socially relevant stimuli. It boosts the action of endogenous feel-good molecules, like anandamide, that help cannabis promote a sense of well-being and social reward. It is also involved in the complex behavior of bonding, which makes you want to cuddle your partner or kiss your children even after they've drawn on the walls with permanent markers. Oxytocin levels rise when one feels strong social support and when one gives or receives a massage. Its presence drives down the amount of circulating cortisol, even in the face of psychosocial stress, creating a [Q25b] effect. It also has an anti-inflammatory effect through direct modulation of the immune system.

⑭ Although one study showed that oxytocin may be involved in developing in-group bias, Jewish Israelis who were given a dose expressed more empathy toward the pain of Palestinians. When taken intranasally, oxytocin makes people more generous, more trusting, and even better at anticipating and understanding others' emotional states. It enhances social cooperation, but only when participants are not overwhelmed by greed or self-interest. It also acts differently depending on an individual's cognitive approach, whether intuitive or more reflective.

⑮ Listening to music increases our oxytocin levels, and when the music gives us chills, dopamine is released in the deep reward centers of the brain. Singing together in groups also stimulates oxytocin release, and improvised singing promotes higher levels. In birds, singing plays a crucial role in bonding and mating, often for life in pairs—and these behaviors are also mediated through this hormone. Research is ongoing into how language acquisition in humans might be tied to the action of this incredible molecule.

⑯ Deficits of oxytocin are, we suggest, symptoms not of an underdeveloped pharmaceutical approach or of a personal failure to find happiness—a neurochemical deficiency for which something might be prescribed—but of a world that has severed human connections to the web of life. The exposome is, by definition, not something for which there can be a pill. No chemical can erase the cumulative burden of exposures from before birth or remove social, ecological, or economic injustice. The solution to stress isn't an oxytocin pill, just as

the solution to a denuded microbiome isn't a stool transplant. If oxytocin is like happiness, then the answer isn't a Brave New World*² with happiness dispensed to all for the profit of a multinational corporation. It's reimagining and reconfiguring how we live, so as to fill our lives with the opportunities to naturally enjoy oxytocin by connecting with other humans and the rest of the web of life.

*¹ inflammation: the body's immune system response to infection or damage.

*² Brave New World: a story about a futuristic nightmarish-like society, where through emphasizing conformity and control, all of life's problems are efficiently solved with science.

Q20. Which of the following is true of the authors' description in paragraph ①?

1. Rehumanizing means categorizing the person's face as a distinct entity apart from all other categories.
2. Evaluating both the diagnostic images and the faces of the person being treated created more concern for the person as a whole.
3. Current diagnostic imaging practice never allows for the proper visualization of both internal and external human ecological concerns.
4. The careful reading of CT scans has always been an easy task for both doctors and patients, due to multiple body system interactions.
5. Separating the consideration of the person being treated from the disease and any environmental factors involved is what is now known as a deep consideration approach involving facial recognition.

Q21. Which of the following is true of paragraphs ⑤, ⑥, and ⑦?

1. Being healthy in an unbalanced world is not a difficult goal to accomplish these days.
2. Urban life is more convenient and balanced and therefore naturally healthier in all aspects overall.
3. High blood pressure has affected all humans equally in all social groups throughout human history.
4. The modern world is molded into a simpler and entirely safe and beneficial existence for humans by virtue of its protecting us from potential harm in the external environment.
5. Racial minorities can encounter additional burdens in life that can contribute to the development of diseases that may not necessarily impact other groups of people in the same way.

Q22. Which of the following is true of paragraphs ⑧ and ⑨ ?

- 1 . Diabetes is the leading cause of mental disabilities.
- 2 . Non-white ethnic groups suffer disproportionately from elevated blood sugar abnormalities.
- 3 . Plastic wrappings and insect poisons are the primary reasons causing an abnormal rise in blood sugar levels.
- 4 . The Indian population suffers more from harmful blood sugar disorders than the Chinese population does.
- 5 . Signals from multiple sources throughout the environment enhance our lives and create benefits in terms of communication between biological life forms.

Q23. In paragraph ⑩ (line 6), which of the following could be best added in [Q23] ?

- 1 . anguish
- 2 . despair
- 3 . gloom
- 4 . happiness
- 5 . melancholy

Q24. In paragraph ⑪, which of the following words could be placed in [Q24] (in all three spaces) ?

- 1 . detection
- 2 . frequency
- 3 . rest
- 4 . shaping
- 5 . stress

Q25. In paragraph ⑬ (lines 3 and 9), which of the following contains a set of words that could best be added to [Q25a] and [Q25b], respectively ?

	Q25a	Q25b
1 .	attenuates	roughing
2 .	cuts	rousing
3 .	defeats	stormy
4 .	enhances	calming
5 .	fades	heavy

Q26. Which of the following best represents what the authors are saying in paragraphs ⑭ and ⑮ ?

- 1 . Birds and mammals share a definite goal involving communication with other species.
- 2 . The human behavior of intolerance has no basis in relation to chemical modulators in the brain.
- 3 . The modern world in terms of relationships in society, is not influenced at all by neurochemistry.
- 4 . Hobbies are the only way to access the core areas of the brain responsible for the ability to formulate languages.
- 5 . It is possible that chemicals could help modify in a positive direction the dynamics underlying some social interactions and communications between different groups of people, as well as influence various forms of enjoyment.

Q27. Which of the following could best be deduced to be the definition of the underlined word exposome as used by the authors in paragraph ⑯ (line 4) ?

- 1 . The word exposome means the complete microbiology of an environment's ecosystem.
- 2 . The word exposome means the pharmaceutical manufacturing capacity of a particular industry.
- 3 . The word exposome means the exponential component of isolated parts in determining which medications to administer.
- 4 . The word exposome means the cognitive evaluation of the influence involved in particular diseases, especially in the psychiatric field.
- 5 . The word exposome means the sum of the measure of an individual's lifetime exposures (including prior to birth, environmental, and lifestyle, etc.) and how they relate to health.

[IV]

This question pertains to all three articles (I , II , and III). Read the following question carefully and answer the question. Choose ONE BEST answer. On your answer sheet, find the number of the question and fill in the space that corresponds to the number of the answer you have chosen.

Q28. Which of the following expresses a statement that correctly summarizes and could best be considered representative of the overall concepts discussed in all three articles (I , II , and III)?

- 1 . Medicine is only possible secondary to science. For this reason alone, germs are always the cause of inflammation.
- 2 . Drug discovery has only moved medicine and science forward in a clear, unambiguous manner, resulting solely to the benefit of humanity.
- 3 . The solutions to global problems are only to be found through the scientific enterprise and undeviatingly enhance and uplift the quality of life for all life forms on the planet.
- 4 . Scientists, along with the healthcare system, serve entirely the best interests of mankind—selflessly and in way that results in the constant and consistent improvement of everyone.
- 5 . Science and modern world developments can result in both beneficial and unforeseen detrimental changes; the application of the scientific method can be helpful when used correctly or potentially harmful if the process is not well understood, or misused.

