

英 語

医学部医学科・応用生物科学部共同獣医学科

問題冊子

注意事項

- (1) 試験開始の合図があるまで、問題冊子を開かないこと。
- (2) 問題冊子は 18 ページで、解答用紙は 4 枚である。問題冊子や解答用紙に、落丁、乱丁、印刷不鮮明のものがあつた場合は、ただちに試験監督者に申し出ること。
- (3) 受験番号は、4 枚の解答用紙のそれぞれの指定箇所に丁寧に記入すること。
- (4) 問題は、**1** および **2** の 2 つの大問よりなる。
- (5) 解答は解答用紙の指定箇所に丁寧に記入すること。
- (6) 解答用紙は、持ち帰らないこと。
- (7) 問題冊子は、持ち帰ること。
- (8) 各大問の満点に対する配点の比率(%)を次のとおりとする。
1 は 54 %、**2** は 46 %
- (9) 設問は英文で書かれている。



Part 1

Questions 1–8 :

Read the following text on tornadoes and fill in the blanks (1)–(8) to complete the sentences. For each blank, you have four choices given below. Choose the best word and write A, B, C, or D in boxes 1–8 on your answer sheet.

A tornado is a violently rotating column of ⁽¹⁾_____ that extends from a thunderstorm to the ground. It's often portended by a dark, greenish sky. Black storm clouds gather. Baseball-size hail might fall. A funnel suddenly appears, ⁽²⁾_____ from a cloud. The funnel hits the ground and roars forward with a sound like ⁽³⁾_____ of a freight train approaching. The tornado tears up everything in its ⁽⁴⁾_____. Some of Earth's most violent events, nearly a thousand tornadoes — many of them deadly — touch down every year in the United States. ⁽⁵⁾_____ U.S. state has experienced twisters, but Texas holds the record: an annual average of 120. Tornadoes have been reported in Great Britain, India, Argentina, and other countries, but most tornadoes occur in the United States — a product of the ⁽⁶⁾_____ geography and weather patterns. Tornadoes can be deadly, but there are steps you can take to ⁽⁷⁾_____ the risk to you and your family. Remember that although tornadoes are most prevalent in certain areas, they can appear suddenly in ⁽⁸⁾_____ places.

(Adapted from Brian Clark Howard, "How to Stay Safe from Tornadoes," *National Geographic*, May 23, 2019, <https://www.nationalgeographic.com/environment/natural-disasters/tornado-safety-tips>)

1. A. lands B. microwave C. air D. weight
2. A. preventing B. strengthening C. attaching D. descending
3. A. rolling B. destruction C. that D. which
4. A. cornerstone B. path C. amount D. hypothesis
5. A. Most B. One C. That D. Every
6. A. regional B. herbivorous C. equivalent D. acrophobic
7. A. endow B. reduce C. elision D. terminate
8. A. quiet B. designated C. few D. many

Part 2-A

Questions 9–15 :

Read the following text on commutes and fill in the blanks (9)–(15) to complete the sentences. For each blank, you have four choices given below. Choose the best phrase, and write A, B, C, or D in boxes 9–15 on your answer sheet.

Every day, millions of people around the world face long commutes to work. In the United States alone, approximately 25 million workers spend more than 90 minutes each day (9) _____ from their jobs, and about 600,000 “mega-commuters” travel at least 90 minutes each way, (10) _____ the U.S. Census Bureau. In the United Kingdom, the average round-trip commute takes 54 minutes (up from 45 minutes in 2003), and (11) _____ the world’s major cities, from Milan to Manila, it’s over an hour. And yet (12) _____ their commutes. When the Ford Motor Company surveyed 5,500 people in six European cities, many ranked commuting as more stressful than their jobs, moving into a new house, (13) _____ the dentist. In a 2006 survey of 909 working women in Texas, conducted by Nobel laureate Daniel Kahneman and his colleagues, respondents said the morning journey between home and the office was, (14) _____, the least enjoyable activity of their day; the evening trip home was the third worst. Working itself took (15) _____.

(Adapted from Francesca Gino, Bradley Staats, Jon M. Jachimowicz, Julia Lee, and Jochen I. Menges, “Reclaim Your Commute,” *Harvard Business Review*, the May-June 2017 Issue, <https://hbr.org/2017/05/reclaim-your-commute>)

9. A. for saving time
C. is a way
- B. must take them
D. getting to and
10. A. according to
C. depending on
- B. on behalf of
D. with respect to
11. A. within almost
C. claimed from
- B. in most of
D. no excuses for
12. A. more transportations improved
C. few people enjoy
- B. the weather affects
D. traffic accidents kill
13. A. when they asked
C. but especially seeing
- B. less than visiting
D. or going to
14. A. in account
C. in average
- B. on account
D. on average
15. A. second place
C. more time
- B. many advantages
D. part in

Part 2-B

Questions 16–23 :

Read the following text on gender and choose from A–J the phrase which fits each blank (16)–(23). Write the correct letter in boxes 16–23 on your answer sheet. There are two extra phrases that are not necessary.

Conventionally, our anatomical sex (female or male) is considered to be the cause of our gender (femininity or masculinity), according to the cultural norms associated with them. But U.S. scholar Judith Butler challenges the idea of ⁽¹⁶⁾_____. According to her, it is the things that we do, our “gender acts,” that determine our gender, and even ⁽¹⁷⁾_____ our biological sex. When we behave in ways that are ⁽¹⁸⁾_____, we are imitating the norms of gender identity, which are based on the ways that each sex behaves. We ⁽¹⁹⁾_____ that does not in fact exist; in essence, there is no original template for “female” or “male” — the original itself is derived. So, if one is born female, one behaves in what is considered to ⁽²⁰⁾_____ (by, for example, desiring a male partner), and comes to accept the fact that sex with men is associated with that gender. It is, Butler says, these “gender acts” — which ⁽²¹⁾_____ dress, mannerisms, and all sorts of everyday activities as well as sexual activity and choice of sexual partner — that determine the sex we perceive ourselves to be. Even ⁽²²⁾_____ reinforces the social norms, ensuring that we perform in a certain way. Butler claims that, crucially, it is the constant repetition of this kind of performance that ⁽²³⁾_____, so that “the actors themselves come to believe and to perform in the mode of belief.”

(Adapted from Sarah, Tomley, et al., *The Sociology Book: Big Ideas Simply Explained*, DK Publishing, 2015, p. 60)

- A. “appropriate” to our sex
- B. are performing a role
- C. be a “feminine” way
- D. gender is not something
- E. include such things as
- F. molds gender identity
- G. nor as fixed and unchanging
- H. a stable and coherent gender identity
- I. the language we use
- J. the way we perceive

Part 3

Questions 24–27 :

Read sentence A, then rearrange the words and phrases in the brackets in B to make a sentence with a similar meaning to A. In each question, there is ONE word or phrase which is not used. Then, in boxes 24–27 on your answer sheet, write the words or phrases which are not necessary to complete the sentences.

Example:

0. A : Last night Peter declared his love for Emily.

B : Peter (that / very / Emily / told / loved / he / last night) her.

The completed sentence B is “Peter told Emily last night that he loved her,” and the word “very” in the brackets is unnecessary. So you write:

0
very

Write ONLY the unnecessary words or phrases in the boxes on your answer sheet.

24. A : Mr. Smith gave me permission to meet him and ask some questions tomorrow.

B : I (ask / promise / appointment / to / some questions / with / an / Mr. Smith / made) tomorrow.

25. A : I'll finish my homework first, and then I'll stretch my legs.

B : I (take / I / after / finished / a / finish / will / walk / have) my homework.

26. A : Heavy snow made us postpone the trip.

B : We (to / no / the trip / off / put / since / choice / due / but / had / to) heavy snow.

27. A : A police officer unexpectedly looked at my face very carefully.

B : A police officer (of / face / me / in / all / stared / sudden / the / from / a).

Part 1-A

Questions 28–35 :

Read the following passage taken from a website. Choose the phrase which fits each blank (28)–(35) from A–J, and write the correct letter in boxes 28–35 on your answer sheet. There are two extra phrases that are not necessary.

No Longer Science Fiction, AI and Robotics Are Transforming Healthcare

AI is getting increasingly sophisticated at doing what humans do, but more efficiently, more quickly and at a lower cost. The potential for both AI and robotics in healthcare is vast. Just like in our every-day lives, AI and robotics are increasingly a part of our healthcare eco-system.

Keeping Well:

One of AI's biggest potential benefits is to help people stay healthy so they don't need a doctor, or at least not as often. The use of AI and the Internet of Medical Things (IoMT) in consumer health applications is already helping people. Technology applications and apps encourage healthier behavior in individuals and help with the proactive management of a healthy lifestyle. It puts consumers in control of health and well-being. Additionally, AI increases the ability for healthcare professionals⁽²⁸⁾ _____, and with that understanding they are able to provide better feedback, guidance and support for staying healthy.

Early Detection:

AI is already being used to detect diseases, such as cancer, more accurately and in their early stages. According to the American Cancer Society, a high proportion of mammograms yield false results, leading to 1 in 2 healthy women being told they have cancer. The use of AI is enabling review and translation of mammograms 30 times faster with 99% accuracy,⁽²⁹⁾ _____. The proliferation of consumer wearables and other medical devices combined with AI is also being applied to oversee early-stage heart disease, enabling doctors and other caregivers to better monitor and detect potentially life-threatening episodes at earlier, more treatable stages.

Diagnosis:

IBM's Watson for Health is helping healthcare organizations apply cognitive technology to unlock vast amounts of health data and power diagnosis. Watson ⁽³⁰⁾ _____ — every medical journal, symptom, and case study of treatment and response around the world — exponentially faster than any human. Google's DeepMind Health is working in partnership with clinicians, researchers and patients to solve real-world healthcare problems. The technology combines machine learning and systems neuroscience to build powerful general-purpose learning algorithms into neural networks that mimic the human brain.

Decision Making:

Improving care requires the alignment of big health data with appropriate and timely decisions, and predictive analytics can support clinical decision-making and actions as well as prioritise administrative tasks. Using pattern recognition to identify patients at risk of developing a condition — or ⁽³¹⁾ _____ — is another area where AI is beginning to take hold in healthcare.

Treatment:

Beyond scanning health records to help providers identify chronically ill individuals who may be at risk of an adverse episode, AI can help clinicians take a more comprehensive approach for disease management, better coordinate care plans and help patients to better manage and comply with their long-term treatment programmes.

Robots have been used in medicine for more than 30 years. They range from simple laboratory robots to highly complex surgical robots that ⁽³²⁾ _____. In addition to surgery, they're used in hospitals and labs for repetitive tasks, in rehabilitation, physical therapy and in support of those with long-term conditions.

End of Life Care:

We are living much longer than previous generations, and as we approach the end of life, we are dying in a different and slower way, from conditions like dementia, heart failure, and osteoporosis. It is also a phase of life that is often plagued by loneliness.

Robots have the potential to revolutionise end of life care, helping people to remain independent for longer, reducing the need for hospitalisation and care homes. AI combined with the advancement in humanoid design are enabling robots to go even further and have 'conversations' and other social interactions with people ⁽³³⁾ _____.

Research:

The path from research lab to patient is a long and costly one. According to the California Biomedical Research Association, it takes an average of 12 years for a drug to travel from the research lab to the patient. Only five in 5,000 of the drugs that begin preclinical testing ever make it to human testing and just one of these five is ever approved for human usage. Drug research and discovery is one of the more recent applications for AI in healthcare. By directing the latest advances in AI to streamline the drug discovery and drug repurposing processes there is the potential ⁽³⁴⁾_____ for new drugs and their costs.

Training:

AI allows those in training to go through naturalistic simulations in a way that simple computer-driven algorithms cannot. The advent of natural speech and the ability of an AI computer to draw instantly on a large database of scenarios, means the response to questions, decisions or advice from a trainee can challenge in a way that a human cannot. And the training programme can learn from previous responses from the trainee, meaning that the challenges ⁽³⁵⁾_____. And training can be done anywhere; with the power of AI embedded on a smartphone, quick catch up sessions, after a tricky case in a clinic or while travelling, will be possible.

(Adapted from Tim Wilson, “No Longer Science Fiction, AI and Robotics Are Transforming Healthcare,” 2019, <https://www.pwc.com/gx/en/industries/healthcare/publications/ai-robotics-new-health/transforming-healthcare.html>)

- A. can either aid a human surgeon or execute operations by themselves
- B. reducing the need for unnecessary biopsies
- C. can be reproduced inexpensively all over the world
- D. seeing it deteriorate due to lifestyle, environmental, genomic, or other factors
- E. can be continually adjusted to meet their learning needs
- F. combine multiple data sources
- G. to better understand the day-to-day patterns and needs of the people they care for
- H. to significantly cut both the time to market
- I. to keep aging minds sharp
- J. can review and store far more medical information

The examination continues on the next page.

Part 1-B

Questions 36–44 :

Each of the following two passages explains one of the “Sustainable Development Goals” of the United Nations. Choose from A–J the sentence or phrase which best fits each blank (36)–(44), and write the correct letter in boxes 36–44 on your answer sheet. There is one extra sentence or phrase that is not necessary.

Life Below Water: Why It Matters

What’s the goal here?

To conserve and sustainably use the world’s oceans, seas and marine resources.

Why?

Oceans provide key natural resources including food, medicines, biofuels and other products. _____, and their coastal ecosystems act as buffers to reduce damage from storms. (36) Maintaining healthy oceans supports climate change mitigation and adaptation efforts. And have you been to the sea-side? It’s also a great place for tourism and recreation.

Even more, Marine Protected Areas contribute to poverty reduction by increasing fish catches and income, and improving health. _____, as women do much of the work at small-scale fisheries. (37) The marine environment is also home to a stunning variety of beautiful creatures, ranging from single-celled organisms to the biggest animal ever to have lived on the Earth — the blue whale. They are also home to coral reefs, one of the most diverse eco-systems on the planet.

Sounds like a worthwhile thing to protect. So what’s the problem?

_____. (38) Marine debris impacts biodiversity through entanglement or ingestion of debris items by organisms, which can kill them or make it impossible for them to reproduce. As far as the world’s coral reefs are concerned, about 20 percent of them have been effectively destroyed and show no prospects for recovery. About 24 percent of the remaining reefs are under imminent risk of collapse through human pressures, and a further 26 percent are under a longer-term threat of collapse. Furthermore, improper marine management results in overfishing. _____ (39) The UN Environment Programme estimates the cumulative economic impact of poor ocean management practices is at least US\$200 billion per year. In

the absence of mitigation measures, climate change will increase the cost of damage to the ocean by an additional US\$322 billion per year by 2050.

What would it cost to correct this?

The costs of taking action largely are offset by the long-term gains. In economic terms, the Convention on Biological Diversity suggests that scaled up actions to sustain the global ocean require a US\$32 billion one-time public cost and US\$21 billion dollars a year for recurring costs.

So what can we do?

For open ocean and deep sea areas, sustainability can be achieved only through increased international cooperation to protect vulnerable habitats. Establishing comprehensive, effective and equitably managed systems of government-protected areas should be pursued to conserve biodiversity and ensure a sustainable future for the fishing industry. On a local level, we should make ocean-friendly choices when buying products or eating food derived from oceans and consume only what we need. Selecting certified products is a good place to start. Making small changes in our daily lives, like taking public transport and unplugging electronics saves energy. ⁽⁴⁰⁾_____ . We should eliminate plastic usage as much as possible and organize beach clean-ups. Most importantly, we can spread the message about how important marine life is and why we need to protect it.

Responsible Consumption and Production

What is the goal here?

To ensure sustainable consumption and production patterns.

Why?

More people globally are expected to join the middle class over the next two decades. ⁽⁴¹⁾_____. If we don't act to change our consumption and production patterns, we will cause irreversible damage to our environment.

What are some of the current consumption and production patterns that need to change?

There are many aspects of consumption that with simple changes can have a big impact on society as a whole. For example, each year about one third of all food produced — equivalent

to 1.3 billion tonnes worth around \$1 trillion — ends up rotting in the bins of consumers and retailers, or spoiling due to poor transportation and harvesting practices, something that businesses need to address. When it comes to consumers, households consume 29 percent of global energy and contribute to 21 percent of resultant CO₂ emissions. However, if people worldwide switched to energy efficient lightbulbs the world would save US\$120 billion annually.⁽⁴²⁾ _____ . We are polluting water faster than nature can recycle and purify water in rivers and lakes.

How can I help as a business?

It's in businesses' interest to find new solutions that enable sustainable consumption and production patterns. _____, both of product life cycles and how these are affected by use within lifestyles.⁽⁴³⁾ Identifying “hot spots” within the value chain where interventions have the greatest potential to improve the environmental and social impact of the system as a whole is a crucial first step. Businesses can also use their innovative power to design solutions that can both enable and inspire individuals to lead more sustainable life-styles, reducing impacts and improving well-being.

How can I help as a consumer?

There are two main ways to help: 1. Reducing your waste and 2. Being thoughtful about what you buy and choosing a sustainable option whenever possible. Reducing our waste can be done in many ways, from ensuring you don't throw away food to reducing your consumption of plastic — one of the main pollutants of the ocean. Carrying a reusable bag, refusing to use plastic straws, and recycling plastic bottles are good ways to do your part every day. Making informed purchases about what we're buying also helps. For example, the textile industry today is the second largest polluter of clean water after agriculture, and many fashion companies exploit textile workers in the developing world.⁽⁴⁴⁾ _____ .

(Adapted from Web pages of the United Nations, “Responsible Consumption and Production,” <https://www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/Goal-12.pdf> and “Life Below Water,” <https://www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/14.pdf>)

- A. A better understanding of environmental and social impacts of products and services is needed
- B. If you can buy from sustainable and local sources you can make a difference as well as exercising pressure on businesses to adopt sustainable practices
- C. Increasing levels of debris in the world's oceans are having a major environmental and economic impact
- D. Many cities and farmlands have been submerged by sea level rise
- E. The lost economic benefits from the fisheries sector are estimated to be around US\$50 billion annually
- F. These actions reduce our carbon footprint, a factor that contributes to rising sea levels
- G. They also help improve gender equality
- H. They help with the breakdown and removal of waste and pollution
- I. This is good for individual prosperity but it will increase demand for already constrained natural resources
- J. Water pollution is also a pressing issue that needs a sustainable solution

Part 2

Questions 45–50 :

Read this blog post by a doctor who reflects on why he spends so little time with his patients, and fill in the blanks (45)–(50) to match the responses. For the blanks, you have six choices given below. For each question (Q) below, choose the best answer (A) by writing A, B, C, D, E, or F in boxes 45–50 on your answer sheet.

There Are No More Essays in Medicine

We live in an era of industrialized and impersonal medicine, where time spent with our doctors is kept to a minimum, almost as a science. But it wasn't always this way. At my grandfather's funeral, in 2005, hundreds of his patients came to say goodbye. He was a cardiologist in the Chicago area, the son of a doctor — my great-grandfather — and the father of two doctors.

I recently asked one of his sons, my uncle Dr. James Hines — a physician in Phoenix who graduated from Harvard College and Northwestern Medical School, is triple board-certified in internal medicine, cardiology, and interventional cardiology, and is recognized as one of Phoenix's best doctors — to talk about his experience in his 35 years as a doctor, and specifically how his interactions with his patients differ from his father's and his grandfather's.

Q : What are the major differences between how your grandfather and father practiced medicine vs. how you practice medicine today?

A : (45) _____

Q : Has the way the community views doctors changed as a result?

A : (46) _____

Q : You first began practicing in 1980. How has the patient-provider relationship changed in these last 35 years?

A : (47) _____

Q : Does care feel different from a patient's perspective?

A : (48) _____

Q : How frequently do you interact with patients by email, video calls, or social media?

A : (49) _____

Q : Do you think there's an expanded role for nurses or other non-doctors to play in improving patients' understanding of their own health, given the constraints on the amount of time doctors can spend with them?

A : (50) _____

(A) What they used to do when someone had stomach pain and they didn't understand why they had stomach pain: They put them in a hospital on a Monday. On Tuesday they would have an upper gastro-intestinal (GI) exam. On Wednesday they would have a lower GI exam. By Friday, the main doctor would come in and tell you what was happening. So my dad would see them over a period of four to five days. He would see them five times on one investigation. Now, it's out of the hospital. If the patient is admitted, the hospital is on the clock by the insurance company. So insurance companies are doing everything they can to minimize the interaction between the hospital and a patient. Once this move was made to commoditize what a provider does — well, then we want a product that we can measure and sell. So much of what is good in a doctor-patient relationship is immeasurable.

(B) I don't want that. I can't bill for it, and their communications would often be very extraneous to true medical issues. Also, the U.S. Justice Department is all too eager to find a doctor-patient communication that occurs outside a secure form of electronic communication. This is a Health Insurance Portability and Accountability Act (HIPAA) violation. For instance, two heart surgeons in Phoenix were threatened with a \$1 million fine for using email to communicate with patients. They settled for \$100,000.

(C) I think so. This is a more subtle difference between my dad's generation and mine. I have memories of going to the hospital with my dad on the weekends. He would park me at the nurses' station. He was a real professional, very well-respected — I saw the notes that he would take. He didn't cut corners. It was pretty much a universal respect without many questions, without many reservations or judgments. Today, if you do a good job, your patients still do respect you and they appreciate what you do. Every once in a while, you have a patient come in and say, "I saw what Medicaid paid you and how underpaid you are." But in the community, apart from your patients, you're just another guy making a nice living. Are you any different from the guy selling real estate or a successful banker? I don't think so. The mystique has gone away.

- (D) I work with a nurse, and I'm constantly amazed by how good she is, how patient she is. We're a great team. There are certain medical decisions that she's not comfortable making. But she's far more patient than I am and it's absolutely necessary in this system for nurses to play a big part in communication. The most important thing, for every health care provider, is that quality must be extremely high. And if they're a very caring person, that goes a long way.
- (E) One obvious difference is that my father and grandfather could afford to spend more time with their patients. Though they had much less to offer their patients in terms of testing and treatments, my father had the time to make house calls — I'm sure that I went on a house call or two with him. Today, while that nugget of human interaction and the human element is still there, we've got so much else to deal with that is extraneous to our core work as doctors. We have to work harder to have a good relationship with a patient. This includes a lot more paperwork and a lot more data to review.
- (F) The mandates of government and insurance companies to collect and record a multitude of data pieces, whether or not they're relevant to the patient's problem and situation, has taken much time and effort away from individualized evaluation and treatment. Significant cuts in reimbursement for all services has required me and just about all other physicians I know to see more patients but spend less time with each one. Bureaucracies are forcing doctors to spend large amounts of time filling out data fields. It takes lots of time away from personal interaction. On average, I'm spending about 15 minutes per patient per appointment, and then charting everything afterward. I'm booked every 15 minutes. I think I spend about 20 to 25 hours per week on paperwork, on top of what my assistant already does. Doctors used to take beautiful notes. They would describe a patient's history. They would talk about the tests that they were going to run. Bureaucracies have no interest in the narrative form. There are no more essays in medicine. They only want structured data. If you can't put it in a field, they're not interested. There are no more novels, no more short stories.

(Adapted from Katherine Ryder, "There Are No More Essays in Medicine': A Doctor Reflects on Why He Spends So Little Time with His Patients," *HuffPost*, December 20, 2014, https://www.huffpost.com/entry/there-are-no-more-essays_b_6011346)





