

令和6年度入学試験問題

英 語

(前期日程)

医学部医学科

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14ページあります。
3. 解答用紙は6枚あります。すべての解答用紙の受験番号欄に受験番号を記入しなさい。受験番号が正しく記入されていない場合は、採点できないことがあります。
4. 解答は、解答用紙の指定された解答欄に記入しなさい。
5. 試験中に、問題冊子および解答用紙の印刷不鮮明、ページの落丁および汚損等がある場合は、手を挙げて監督者に知らせなさい。
6. 試験終了後、問題冊子は持ち帰りなさい。

I. 以下の文を読んで、それに続く問いに答えなさい。

Sergeant Frank Spike sat behind his desk and stared out of the window. Outside, a steady stream of traffic passed by, each car moving slowly in the cold, grey rain.

Frank looked down at the grey hairs on his arms, and his round stomach, which pushed against the desk. This was his final month before he retired from the police, and, for Frank, retirement couldn't come soon enough.

(1)

Frank frowned as he considered the terrible retirement package he had been given. It was barely enough money to take a short holiday on the cold and rainy east coast of England where he lived. There was no way he could afford the round-the-world, luxury cruise he had always dreamed of.

Just as Frank was sighing heavily, Inspector Spencer came up to his desk, with his perfect white teeth and enthusiastic smile. Three years earlier, Spencer had been promoted. Now he had the position of inspector at the young age of forty. Frank, in comparison, had worked for the police for forty years and been passed over for promotion three times. It was true (had / of / Spencer / the / the / charm / he / looks / nor / neither) — sorry, *Inspector* Spencer — but the younger man didn't have Frank's 'nose for crime'. That nose meant Frank could get inside the mind of the criminal and solve the trickiest of cases. As a result, the younger man often asked for Frank's help. In fact, it was pretty much the only time Spencer spoke to him.

(3)

(2)

'Hey, Frank, do you mind if I ask your advice about something?'

Unsurprised, Frank nodded.

(4)

'Have you heard of the Babbingtons?'

Everyone had heard of the Babbingtons. Ronald Babbington was the millionaire owner of Babbington Oil, and his wife Tabitha was a model. Together they⁽⁵⁾ enjoyed nothing more than showing off how rich they were. They often appeared in magazines like *Hello!*, with their gorgeous house and collection of sports cars. Most recently, they had invited the press to take photographs of the enormous diamond Ronald had bought for his bride. Under the protection of a sophisticated alarm system, the diamond sat in a large gold and glass case. The case stood at the end of a long, red carpet.

Spencer paused for dramatic effect, then explained.

‘We’ve had some secret information about a plan to steal the Babbington diamond!’

Frank raised his eyebrows in an attempt to look suitably impressed.⁽⁶⁾

‘Peggy, the owner of the Dog and Duck pub, heard a couple of local criminals talking about it. She’s asked that we keep her identity secret of course. But our officers have made some discreet inquiries that seem to confirm what Peggy says.’

Frank nodded again and waited for the inevitable question.

‘So?’ Spencer asked. ‘What do you think is the best thing to do? After all, it’s only a rumour. We’ve got nothing concrete to arrest them on.’

Frank looked thoughtfully out of the window. He remembered his retirement money. He didn’t want to be alone in his retirement, but the money wouldn’t even⁽⁷⁾ be enough to buy a cat to keep him company.

The sound of a car horn brought him back to the case. He put his fingers together under his chin to look as if he was thinking deeply. Which he was, but⁽⁸⁾ not quite in the direction Inspector Spencer expected.

‘Listen, do this the clever way,’ said Frank, leaning towards the younger officer. ‘What you need to do is let them commit the crime. If you catch them ⁽⁹⁾red-handed, you’ve got all the evidence you need, no problem.’

‘But, Frank,’ said Spencer, ‘we’d need the approval of the Babbington family. And there are laws about tricking criminals like that, you know!’

‘That’s why you let them commit the crime. Then, apparently by chance, stop them for speeding as they escape the crime scene. You search the car to find the diamond, and you’ve caught them red-handed! Plus, the owner of the pub is protected, and you have all the evidence you need.’

‘Hmmm. OK.’ Spencer was uncomfortable with the methods Frank was suggesting. But he couldn’t deny the plan would work.

Frank continued, ‘Of course, you need to ensure the arresting officer is someone you know is reliable.’

Spencer understood immediately.

‘Are you sure you want to do it, Frank? It could be dangerous.’

‘I’ll make sure I’m with a couple of tough young officers, but, yes, of course I want to do it.’

‘Why?’ asked Spencer. ‘You’re just about to retire! Don’t you want to take it easy?’

‘That’s exactly why I want to do it,’ Frank replied. ‘⁽¹⁰⁾My last case will be my final chance for glory!’

A few days later, Frank went into the Dog and Duck pub after work.

‘Did you get it?’ he asked Peggy as she handed him his drink.

‘Yes. I am now the proud owner of a perfect replica Babbington diamond,’ she said. ‘I told the glassmaker I was a huge fan of the Babbingtons and that my mean boyfriend wouldn’t buy me a diamond of my own.’

‘You need a new boyfriend,’ said Frank. ‘If I were your boyfriend, I’d buy you a diamond ring and take you on a long luxury cruise if I had the chance.’

‘Oh, really?’ she said and smiled.

Frank was sitting in the back seat of the police car, which was hidden on the road through the woods to the Babbington mansion. In the front seats were two young officers who were strong and reliable.

At 23.30, a message had come in on the police radio. The burglars had met outside the Dog and Duck pub. At 23.37, the young man started the car and left the pub. In the passenger seat was a tall, athletic woman.

At midnight, the pair passed the hidden police car on their way to the mansion. At 00.13, the woman threw heavy ropes over one of the mansion’s garden walls. A second hidden police team watched her climb over, while the man waited in the car.

At 00.20, the woman reappeared at the top of the wall with an excited smile on her face. (climbed / before / it / the / she / down / pulling / rope / down) with ⁽¹¹⁾ her and running back to the car. Smiling in triumph, the man waited for her to jump in and then sped off in the car.

At 00.23, the thieves passed Frank’s car. The young police officer in the driver’s

seat immediately switched on the flashing blue lights and followed them.

Inside the car, the thieves panicked.

‘What are they doing here?’ the man shouted. ‘I thought you said you turned off the alarms?’

‘Relax, I did,’ she replied. ‘They couldn’t have got here this fast anyway.’⁽¹²⁾ They’re just traffic police. Just keep calm and act normally and we can walk away from this with the diamond.’

The man slowed their car to a stop and pressed the button that lowered his window.

‘Is there a problem, officer?’ he asked, his face shiny with nervous sweat.

‘You were speeding. We’ll need to give you a ticket. Can you both get out of the car, please?’

The man still looked nervous. While one officer wrote out the speeding ticket and the other stood by ready to get involved if things turned nasty,⁽¹³⁾ Frank began thoroughly searching the car.

‘Hey, what’s he searching the car for?’ the woman said. But she knew the game was over.

Frank breathed heavily as he knelt down and started lifting up the rubber mats underneath the seats. His hand felt something smooth, hard and cold under the front passenger floor mat. *The Babbington diamond!* He took the diamond and put it in his jacket pocket. At the same time, with his other hand, he took a very similar object out of his trouser pocket. He held it up.

‘OK, you two!’ he said. ‘You are under arrest for robbery!’

While the young police officers arrested and handcuffed the criminals, Frank held the evidence up for everyone to admire. It shone rainbow colours as it caught the light from the moon.

The two officers sighed in appreciation.

‘I’ve never seen a real diamond up close,’ said one.

‘Imagine someone giving you that as a present!’ said the other.

‘Just imagine,’ Frank agreed. He carefully put it into an evidence bag. Half an hour later, back at the station, he handed it over to Spencer. Spencer took it from him carefully, as if it was a newborn baby.

Five weeks later, Frank was sitting in his new luxury massage chair and drinking a glass of the finest champagne. His expensive new cat rubbed her tail around his legs, and he reached down to stroke her.

With a satisfied sigh, he leaned over and picked up the local newspaper. The two burglars had got six years in prison. The accompanying photo was of the Babbingtons happily showing off the diamond inside its new, extra-thick glass case. Frank looked closely at the photo of the diamond.

Only a jewellery expert would spot anything strange about the Babbington
⁽¹⁴⁾diamond. And even then, only if they saw the stone up close.

Frank put the newspaper down and picked up one of the travel magazines on his beautiful new coffee table.

‘Peggy?’ he said. ‘Would you like to go to the Bahamas or the Maldives?’

Peggy put down her own champagne glass, a small diamond ring on her finger shining in the light. ‘Why not both?’ she smiled.

‘I did promise you a long cruise,’ he said.

‘You did!’ she replied. ‘I’m so glad I called you first when I heard them talking about that robbery.’

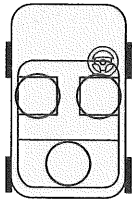
‘Me too, Peggy,’ he said. ‘Me too.’

Retirement was turning out to be a wonderful thing after all.
(15)

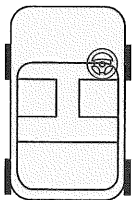
Story written by Clive Lane and adapted by Nicola Prentis

1. 下線部 (1), (5) を和訳しなさい。
2. 下線部 (2), (11) を意味が通るように並べ替え、それぞれ 3 番目と 6 番目にくる語を答えなさい。
3. 下線部 (3), (7), (9) の意味を説明する下記の文に適語を入れなさい。
(3) Frank is a well- () police officer and has () many cases.
(7) The amount of money was too () to () his life after retirement.
(9) in the ()
4. 下線部 (4) について、その理由を本文から 1 文をそのまま抜き出しなさい。
5. 下線部 (6) について、①和訳しなさい。②なぜそのようにする必要があったのか。物語の結末を交えて日本語で説明しなさい。
6. 下線部 (8) について、①和訳しなさい。②この文脈から読み取れる Spencer が expect したことを日本語で説明しなさい。
7. 下線部 (10) の Frank のセリフには二重の意味がある。その 2 つを日本語で簡潔に説明しなさい。

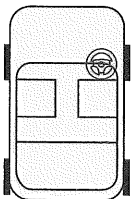
8. 下線部 (12) について、①和訳しなさい。②なぜそう思ったのか理由を日本語で答えなさい。
9. 下線部 (13) について、どのような事態を想定していたのか。日本語で説明しなさい。
10. 下線部 (14) について、その理由を説明する下記の文に適語を入れなさい。
(14) Because it was a ().
11. それぞれの問いにある人物や物が車内のどこに位置していたか。図に描いて答えなさい。



- ① 犯人の車両：人物全員の位置について、○の中に性別 (M/F) を書きなさい。



- ② パトカー (Frank が同乗)：人物全員の位置を○で示し、Frank のみ○の中に F と書きなさい。



- ③ 犯人の車両：ダイヤモンドの位置を●で書きなさい。

12. 下線部 (15) について、事件を解決した後の顛末 (てんまつ) も想像して、その理由を 30 語程度の英語で説明しなさい。

II. Translate the following passage from Japanese into English.

2009 年から 2013 年の間 *NSA に勤務していた Snowden は、その間 NSA の膨大な監視活動の情報を密かに収集した。彼は NSA が数百万人の通話記録を米国の通信会社である Verizon を通じて収集していることを発見し、暴露した。また、PRISM と呼ばれる監視プログラムが、NSA にフェイスブック、アップル、グーグルを含む 9 つの大手インターネット会社へのシステムへの直接的なアクセスを与えているとメディアに話した。このプログラムはユーザーの閲覧履歴、電子メール、ファイル送受信、チャットへのアクセスに使用されている可能性がある。彼は、一部の人の安全を脅かすとして裏切り者の烙印を押されている。しかし、自分のプライバシーが侵害されていることを気づかせてくれた彼を英雄視する人もいる。

*NSA: アメリカ国家安全保障局

III. Read the following scientific article and answer the questions that follow it.

Getting enough hours of high-quality sleep fosters attention and concentration, which are requirements for most learning. Sleep also supports numerous other aspects of *cognition, including memory, problem-solving, creativity, emotional processing, and judgment. Levels of brain activity increase and decrease during each stage of sleep, including both rapid eye movement (REM) and non-REM (NREM) sleep, and evidence increasingly suggests that sleep enhances most types of cognitive function.

For people with sleep problems which prevent them from getting ⁽¹⁾adequate rest, short-term daytime cognitive impairment is common. Improving sleep quality can ⁽²⁾boost cognitive performance, promote sharper thinking, and may reduce the likelihood of age-related cognitive decline and *dementia.

During a typical night of sleep, an individual cycles through the three stages of NREM sleep, followed by a period of REM sleep every 90 to 120 minutes, several times per night. Both the brain and body experience distinct changes during these cycles. During each part of this process, different chemicals in the brain become activated or deactivated to coordinate rest and recovery.

Without proper sleep, the brain struggles to function properly. If it does not have time to recover, neurons in the brain become overworked and less capable of optimal performance.

Poor sleep can take many forms, including short sleep duration or ⁽³⁾fragmented sleep. Both insufficient and interrupted sleep make it difficult to progress through sleep cycles in a normal, healthy way, which makes it more difficult to think straight, process information and do day-to-day tasks. Sleepiness and

fatigue are common daytime effects. These reduce a person's attention, as well as their learning. A lack of sleep has also been found to induce effects that are similar to being drunk, which slows down thinking and reaction time.

Poor sleep reduces higher-order processes, which include the ability to carry out instructions. Motor skills, keeping rhythm, and even some types of speech can decline without proper sleep.

Some studies have found lack of sleep to hinder cognitive flexibility, reducing the ability to ⁽⁴⁾adapt and ⁽⁵⁾thrive in uncertain or changing circumstances. Poor sleep can also alter how emotional information is understood. When learning something new, analyzing a problem, or making a decision, recognizing the emotional context is often important. However, insufficient sleep reduces the ability to properly process the emotional information. In some cases, this impairs judgment. People who do not get sufficient sleep are more likely to make risky choices and may focus on a potential reward rather than downsides. It can also be difficult to learn from these mistakes, since the normal method of processing and storing emotional memory is ineffective due to lack of sleep.

Poor sleep can also harm ⁽⁶⁾intellectual performance, academic achievement, creative pursuits, and productivity at work.

Some cognitive effects of poor sleep can be felt immediately, but mounting evidence shows that sleep influences the long-term risks of memory issues, cognitive decline, and dementia. NREM sleep is important for memory, which includes things like basic facts or statistics, and REM sleep is believed to help memories such as remembering a sequence of steps. Poor sleep ⁽⁷⁾impairs memory *consolidation by disrupting the normal process that needs both NREM and REM sleep for building and retaining memories.

Creativity is another aspect of cognition that is affected by sleeping problems. Connecting ideas helps creativity, and is strengthened by good sleep. NREM sleep provides an opportunity for information to be restructured and reorganized in the brain, while new ideas and links between thoughts often emerge during REM sleep, when more vivid dreams occur. These processes enable insight, a core element of innovation and creative problem-solving.⁽⁸⁾

Not everyone is affected by poor sleep in the same way. Studies have found that some individuals may be more affected by a lack of sleep because of their genes. Research has discovered that adults are better at overcoming the effects of sleep deprivation than younger people. Teens are considered to be at a heightened risk for detrimental effects of poor sleep on thinking, decision-making, and academic performance because of the ongoing brain development that occurs during the teen years.⁽⁹⁾

On the other hand, many studies examining the effects of sleep on thinking have found that an excess of sleep can also be problematic for brain health. In many cases, research has discovered that both too little and too much sleep are associated with cognitive decline.

For people with sleeping problems, improving sleep quality offers a practical way to enhance cognitive performance. Getting the recommended amount of uninterrupted sleep can help the brain recover and avoid many of the negative consequences of poor sleep on different aspects of thinking.

Researchers and public health experts increasingly view good sleep as a potential form of prevention against dementia and Alzheimer's disease.

Anyone who feels that they are experiencing cognitive impairment or excessive daytime sleepiness should first speak with their doctor. A physician can help

identify or rule out any other conditions, including sleep disorders, that may be causing these symptoms. They can also discuss strategies to get better sleep.

Many approaches to improving sleep start with healthy sleep hygiene. By ⁽¹⁰⁾ *optimizing your bedroom environment and everyday habits and routines, you can eliminate many common barriers to sleep. Setting a regular bedtime and sleep schedule, avoiding alcohol and caffeine in the evening, and minimizing electronics in the bedroom are a few examples of sleep hygiene tips that can make it easier to rest well each night.

Adapted from <https://www.sleepfoundation.org/sleep-deprivation/lack-of-sleep-and-cognitive-impairment>

*注) cognition 認知 / dementia 認知症 / consolidation 統合 / optimize 最適化する

Questions

Q1) Match the following underlined words from the article (1-10) with similar meanings on the right (a-j).

- | | |
|-----------------|-----------------|
| 1) adequate | a) appear |
| 2) boost | b) reasoning |
| 3) fragmented | c) harmful |
| 4) adapt | d) reduce |
| 5) thrive | e) adjust |
| 6) intellectual | f) accelerate |
| 7) impair | g) flourish |
| 8) emerge | h) cleanliness |
| 9) detrimental | i) broken |
| 10) hygiene | j) satisfactory |

Q2) The following passage is a summary based on the text. Change the word forms for 1) ~ 4) to correctly fill in the blanks a) ~ d) in the summary.

- 1) adventure 2) anxious 3) reduce 4) quickly

There are many negative effects of not having enough sleep. Over the short term, people might become more (a) focusing too much on rewards rather than risks, but at the same time struggling to make (b) decisions. As they become elderly, there is a higher risk of (c) and (d) in mental ability.

Q3) Based on the article, the following statements are either true (T) or false (F). Mark each one as either T or F as your answers.

- a) Some people have sleeping problems because of their ancestors.
- b) NREM is important for developing imaginative thoughts.
- c) Teenagers' brains are still growing so they are more adaptable to less sleep.

Q4) What kinds of things can NREM sleep help the memory to do? Give examples in your answer. Write your answer in English in 20-30 words.

Q5) What kinds of things can REM sleep help the memory to do? Give examples in your answer. Write your answer in English in 20-30 words.

Q6) What are the benefits of sleep? Write your answer in English in about 30 words.

Q7) What in your opinion are the purposes of dreaming? Write your answer in English in 20-30 words.

