

英

1

次の英文を読み、設問に答えよ。

After a long week at the office, there's nothing quite like going to bed on Friday night with the intention of sleeping in on Saturday morning. But while sleep can help us relax and refresh our mind and body, it can be stressful, too. The questions of when and how long to sleep have been the sources of much debate in the scientific community. An important contribution to this debate is a study published in 1997 by Torbjörn Åkerstedt in the *Journal of Sleep Research* which found that, for those under 65, catch-up sleep on the weekends can lead to an earlier death. However, it would be mistaken to conclude that more sleep on the weekend is bad for you. In fact, results from this single study are rather complicated and deserve further explanation.

In this study, researchers looked at almost 50,000 Swedish people for about 13 years. They also considered data from a 36-page survey filled out by all participants which covered a number of medical matters. Data revealed that not getting enough sleep on the weekend was associated with an increased mortality rate among people below 65 years old. Among this population, however, sleeping too much on the weekend was also associated with increased mortality. In other words, while sleeping in on the weekend might actually make up for not sleeping enough during the week, sleeping too much can have the opposite effect. These results produce a U-shaped graph in which the risk of death increases either when people do not get enough sleep (five hours or less) or when they sleep too much (nine hours or more).

On the other hand, this pattern was not found among subjects over the age of 65. From this, Åkerstedt concluded that the U-shaped graph only makes sense for sleepers less than 65 years of age. For Åkerstedt, this reveals new knowledge about both weekend sleep and old age. "Research prior to 1997 hasn't considered weekend sleep," Åkerstedt told *Popular Science*. "As our study shows, weekend sleep may help people get enough sleep overall, particularly when they are younger. However, as people get older, the effect goes away," he says. Older people seem to require less sleep, and sleep irregularity does not appear to harm them in the way it affects younger people's health.

Åkerstedt is very careful to point out two weaknesses in his 13-year-long study. First, his survey showed self-reported sleep habits, as opposed to sleep habit data collected from experiments. We are therefore not completely sure if those figures are real or made up. "In studies of this scope and time length," Åkerstedt says, "we can't be sure that people are completely honest and report accurate data about their sleep and health habits." Second, the data was collected in an uncontrolled environment. This is normal, since it would have been

almost impossible to get 50,000 people to live and work in a controlled laboratory environment for 13 years. Yet, we simply cannot tell how the participants lived for the duration of the study. This also means that we don't really know all the life factors which influenced their sleeping patterns.

However, clear patterns can be seen in Åkerstedt's findings. The large amount of data does suggest a clear U-shaped pattern when it comes to weekend sleep, a pattern that disappears after age 65. Sleep expert Jennifer Prichard, a neuroscientist from the University of St. Thomas, says that Åkerstedt's study is very interesting because it provides a lot of helpful information about sleep at different stages of human life. However, she also says that the study only looks at mortality, and does not look carefully at other important factors such as quality of life. "Understanding sleep means understanding the life factors which influence sleep patterns," she says, "and this can be understood generally speaking as quality of life." Most sleep experts agree that the primary cause of excessive sleepiness is self-imposed sleep deprivation, or refusing to go to bed even when your body tells you to do so. According to Prichard, research should focus on uncovering the multiple reasons behind self-imposed sleep deprivation, and help people identify them.

Åkerstedt agrees with Prichard's criticism, but adds that his team chose to focus on mortality only because they were specifically trying to understand the U-shaped graph with regards to weekend sleep. For them, mortality is an easier factor to look at than lifestyle factors and diseases, which are much more difficult to research. "When we look at factors shaping quality of life," he says, "there is a lot more room for interpretation and misinterpretation." Åkerstedt's team is, however, currently trying to understand how sleep influences stress and eating habits. They have found that people who don't get enough sleep are more likely to have bigger appetites because their appetite-regulating hormone drops.

Prichard argues that the importance of Åkerstedt's findings varies from nation to nation. "Swedish society has different causes of mortality than other countries do," she says. In Sweden, after adjusting for age, suicide is a much bigger problem than in other countries. One reason is that Swedish people experience winters in near darkness. This disrupts their sleep patterns, which can lead to depression and suicide. In this sense, one could argue that weekend sleep could potentially reduce the number of early deaths in Sweden.

So, can catching up on sleep during the weekend actually be beneficial to you? The above discussion suggests that there is no single rule or formula applicable to all cases. It depends on what age you are and how often you have weekend catch-up sleep. If you are below 65, you

can do it sometimes but don't do it too often. If you are over 65, chances are that it will not affect your health much. The most important factor to remember, however, seems to be regular sleep. Sleeping a lot during the weekend and very little during the week is probably going to negatively affect your health and quality of life over time.

There are a few basic rules you should follow if you want better sleep and want to improve your health and lifestyle: pay attention to what you eat and drink, create a peaceful environment at home, don't take daytime naps too often, try to do some exercise or physical activity every day, try to manage your stress level, and always be on the lookout for physical and mental changes. In principle, regular exercise is the most effective way to sleep soundly. But be careful: irregular exercise or exercising immediately before going to bed will actually have the opposite effect. When it comes to sleep, there is one basic rule experts all agree on: as long as you are functioning well during the daytime, you are probably getting enough sleep.

問1 Choose the best answer based on the reading.

1. What is true about the study published in the *Journal of Sleep Research*?
 - A. It is difficult to draw a clear conclusion from the study's findings.
 - B. The study proves that weekend catch-up sleep is good for you.
 - C. The study caused much concern among sleep experts.
 - D. The study says that weekend catch-up sleep will lead to fewer deaths.
2. What did the study reveal about people under 65 years old?
 - A. Weekend sleep is more dangerous than weekday sleep.
 - B. They can die in their sleep if they sleep too much.
 - C. Not enough sleep is worse than sleeping too much.
 - D. Both too much and not enough weekend catch-up sleep is bad for health.
3. How are people over 65 years old different from younger people?
 - A. They are less affected by irregular sleep than younger people.
 - B. They have more knowledge about sleep than younger people.
 - C. They usually sleep more on the weekend than younger people.
 - D. They usually sleep more irregularly than younger people.

4. Why can self-reported data be problematic?
 - A. Scientists can only get it in a controlled environment.
 - B. Scientists need to get this data from a lot of people.
 - C. Scientists don't know if this data is accurate.
 - D. Scientists need to get this data over a long period of time.

5. What does Prichard claim about the study of sleep?
 - A. Scientists need to study sleep at different stages of human life.
 - B. Scientists can't understand sleep without clearly defining it.
 - C. Scientists can't understand sleep without understanding how people live.
 - D. Scientists need to study people's sleep patterns before they turn 65.

6. According to Åkerstedt, what advantage does the study of mortality have?
 - A. There are more possibilities for interpreting the data.
 - B. It's easier to misinterpret the data and reach the wrong conclusion.
 - C. The relationship between mortality and stress is easier to understand.
 - D. Mortality is simpler to study than people's quality of life.

7. What does Prichard conclude from the data collected in Sweden?
 - A. Weekend catch-up sleep might help Swedes live longer.
 - B. Suicide is a bigger problem for older people than younger people.
 - C. Very few Swedes suffer from sleeping problems.
 - D. Many Swedes die at an early age because of severe winters.

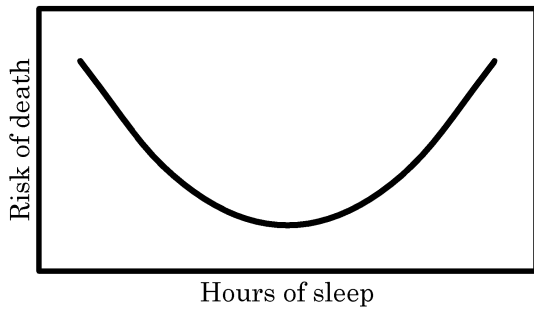
8. What can be said about weekend catch-up sleep?
 - A. Younger people should do it as much as possible.
 - B. Older people will not receive its benefits.
 - C. It is as important as regular sleep during weekdays.
 - D. It affects everyone's quality of life equally.

9. According to the experts, what is the best way to sleep well?
 - A. Get some exercise every day.
 - B. Make a calm atmosphere at work.
 - C. Find quiet time at work.
 - D. Take a nap every day.

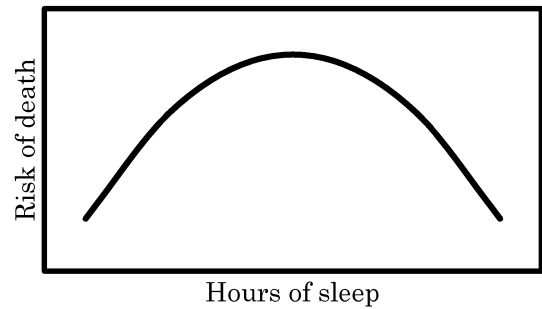
10. What would be a good title for this reading?
- A. Lack of Sleep as a Cause of Death
 - B. The Effect of Sleep Medication on Lifestyle
 - C. Sleeping in on Weekends
 - D. Modern Life and Changing Sleep Patterns

問2 Which of the four graphs shows the weekend sleep pattern for people under 65?

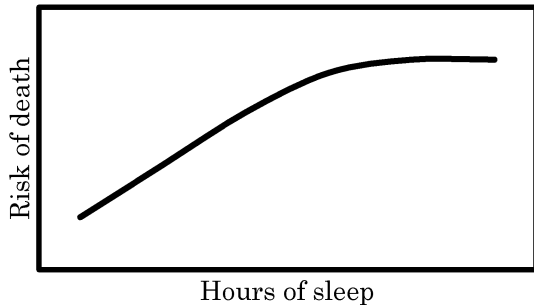
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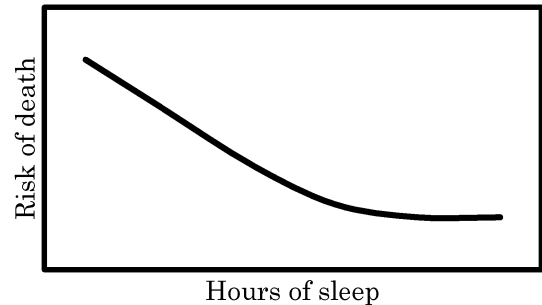
A



B



C



D

問3 Complete the chart based on the reading.

Topics	Statements
Findings from Åkerstedt's study	● (12) can increase the possibility of death for people under 65.
Prichard's criticism of Åkerstedt's study	● (13).
What sleep experts agree on	● The main reason people feel sleepy during the daytime is (14).

12. A. Sleeping too little or too much on the weekend
B. Sleeping too much during the week
C. Sleeping in on the weekend
D. Living in populated areas
13. A. The data was gathered only from a survey
B. The participants were over 65 years old
C. The 13-year-old participants could not be controlled
D. Little information was collected on participants' quality of life
14. A. they don't go to bed although their body needs some rest
B. they work very long hours without afternoon naps
C. they put too much importance on their quality of life
D. they are overly concerned with their own mortality

問4 *Mark A for TRUE and B for FALSE for each of the following statements.*

15. Sleeping in on weekends can help older people recover from lack of sleep during the week, but not necessarily younger people.
16. The survey collected data from 50,000 people about their quality of life.
17. Prichard thinks that Åkerstedt's study is helpful because it explains the effects of sleep on people of different ages.
18. If you don't sleep enough, you will probably want to eat more than if you had enough sleep.

英**2**

次の 19～26 の空所に入れる語句として最も適切なものを A～D の中から選べ。

19. X: What's this thing on your belt that keeps on flashing?
Y: It's a () device that tells me how much energy I'm spending while walking.
A. portable B. suitable C. measurable D. considerable
20. X: Do you have any hidden talents?
Y: Well, I can () the calls of many different kinds of birds.
A. facilitate B. hesitate C. dictate D. imitate
21. X: How did you like the new movie about Michael Jackson?
Y: It was okay, but it didn't really satisfy my ().
A. curiosity B. requirements C. demands D. hunger
22. X: It was so nice out there! Did you spend the whole day inside the hotel?
Y: I did. I was sitting () in the lounge, reading books.
A. comfortably B. notably C. partially D. tightly
23. X: How was the problem between the company and its employees resolved?
Y: Each worker received 7,000 dollars in ().
A. certification B. dedication C. compensation D. sensation
24. X: Did you enjoy your trip to India?
Y: I sure did. Visiting the Taj Mahal () my childhood dream.
A. healed B. fulfilled C. mobilized D. utilized
25. X: So, did you lose everything including all the cash and credit cards?
Y: Yes, I spent the weekend feeling so ().
A. desirable B. preferable C. miserable D. valuable
26. X: You gave a very good speech at the Japanese speech contest.
Y: Thanks, but actually I was very () of my poor pronunciation.
A. proud B. embarrassed C. convinced D. conscious

3

次の 27 ～ 36 の空所に入れる語句として最も適切なものを A ～ D の中から選べ。

27. X: My back really hurts. I must be getting old.
Y: Well, research does show that people in their fifties are more () to suffer from back pain.
A. maybe B. certainly C. perhaps D. likely
28. X: Hi, how can I help you?
Y: I want to talk to () of this store. There was a problem with what I bought yesterday.
A. a manager B. one manager C. the manager D. manager
29. X: How much meat do you think we need for the barbecue?
Y: There'll be only four of us, so 1 kilogram () be enough. I'll pick it up.
A. could B. might C. ought D. should
30. X: I can take care of the plants while you're on the trip.
Y: Thanks! They only need to () once every two days.
A. water B. watered C. be watered D. watering
31. X: I'm hungry. Let's find a place to eat.
Y: Don't worry. There are many restaurants () this street.
A. to B. along C. into D. out of
32. X: It's very hot today. Why don't you get something cold to drink?
Y: I checked the fridge, but there was () in there.
A. nothing B. none C. everything D. no
33. X: Did you see Hiroshi today?
Y: No. He () to school on Wednesdays.
A. isn't coming B. didn't come C. doesn't come D. came
34. X: Hey, honey! Welcome back home! How was your vacation?
Y: Oh, it (). I had a wonderful time.
A. could be better B. couldn't be better
C. could have been better D. couldn't have been better

英

35. I was so surprised that my ex-girlfriend came to my wedding out of the ().
A. blue B. green C. red D. white
36. I'd love to go out with you tonight, but I have to take a () check because I have to work overtime.
A. cash B. pay C. rain D. shine

4 それぞれの会話の空所に入れる文として最も適切なものを A ~ D の中から選べ。ただし、同じ文が2箇所に入ることはない。

Woman: Hi, Keita. Are you ready for your trip to London?

Man: Not yet. I still have a lot of things to do. (37)

Woman: Don't worry, they can issue you a new one in about a week. You have plenty of time before you leave. (38)

Man: I need a bigger and nicer suitcase. I don't want to spend a lot of money on it. I browsed the Internet, but I couldn't find a reasonable one.

Woman: I have an idea! Why don't you try second-hand shops? There's a good one near the university. (39)

Man: That sounds good. Could you email me the URL for the shop?

Woman: Sure. Problem solved.

- A. They usually have a lot of travel stuff.
- B. You can buy your ticket there.
- C. The first thing I have to do is renew my passport.
- D. What else do you have to do?

Woman: Hello. May I speak to Ryo Takeda, please?

Man: Yes, speaking.

Woman: This is Hana Sasaki calling from Hokkai Electronics. (40) I see that you were the head of several award-winning software programming teams. That's impressive.

Man: Thank you. I'm hoping to use this experience in future projects.

Woman: Excellent. (41) How about this Friday at 3 o'clock?

Man: That's perfect. (42)

Woman: Great. Just give your name to our receptionist when you come in. I'll see you soon.

- A. Let's say 3 p.m.?
- B. Can you come over for an interview?
- C. I look forward to meeting you.
- D. You've applied for our computer programming job.

英

- 5** 次の文章の空所に入れる文として最も適切なものを A ～ D の中から選べ。ただし、同じ文が2箇所に入ることはない。

What is a healthy diet? In the past, nutritionists divided food into four main groups. Now, however, they also focus on the appropriate amount that we should eat from each group. They have created a food guide pyramid to explain our nutritional needs. At the base of the pyramid is the grain group; on the second level is the fruit and vegetable group; on the third level is the meat and dairy group. (43) Let's look at each of the four levels. Breads, cereals, rice, and pasta are the foundation of a healthy diet. Six or more daily servings are recommended because these grains provide B vitamins, iron, carbohydrates, and some protein. The fruit and vegetable group provides vitamins, minerals, and fiber. About three servings of fruit and four of vegetables should be eaten every day. (44) It includes beans and nuts as well as fish and animal products like cheese. Two to three daily servings are recommended. At the top of the pyramid, the smallest section, are foods that add little nutritional benefit to one's diet. (45) These foods should be eaten sparingly.

- A. They include salad dressings, butter, and sugars.
- B. The meat and dairy group is high in protein, calcium, and iron.
- C. However, overcooking reduces the vitamins in fruits and vegetables.
- D. At the top of the pyramid, at the fourth level, is the fats, oils, and sweets group.

6 Read the following email and answer the questions.
 (1部および工学部受験者のみ)

From:	Harry Sinclair
To:	Takashi Sato
Date:	July 4th, 2018
Subject:	Helping the brass band club

Dear Mr. Sato,

As the head of the PTA, I would like to thank you for being in charge of fundraising this year. As you know, the PTA needs to hold an event to raise money for the school brass band club. The brass band club needs to replace old instruments, including some of its clarinets, trumpets, and trombones which have been used for more than 30 years.

I am thinking of a doughnut party. What do you think? Please see the attached file. If you agree, we will start working on the event. If you have other ideas, please let me know.

Your quick reply is appreciated.

Best,
 Harry Sinclair

(Attached file)

K & K Doughnut Company Fundraising Support for Communities

Since early in K & K Doughnut Company's history, many schools and non-profit organizations have raised funds by selling K & K original glazed doughnuts. Traditional doughnut sales are opportunities for you to achieve your fundraising goals.

Raise Some Dough Today!
 K & K offers our doughnuts to non-profit groups at a reduced price, which are then resold at full retail price, or slightly higher. Selling doughnuts at high-traffic areas such as shopping centers or community festivals can generate significant funds.

Fundraising Doughnuts
 Your Cost: \$5 / dozen
 Suggested Selling Price: \$10 – \$12 / dozen
 Quantity: 50 dozen or more
 Minimum quantities vary by region

How to Participate
 To participate, please download, fill in, and submit both a Fundraising Application and a Purchase Order Form to your local K & K store. Also submit a letter with your non-profit organization's letterhead. The letter should clearly state that this is for fundraising purposes, and specify how funds will be used.

46. What part of the PTA is Mr. Sato assigned to?
- A. Doughnut delivery.
 - B. Event planning.
 - C. Instrument maintenance.
 - D. Fundraising.
47. What does Mr. Sinclair suggest to do for the event?
- A. Organize the brass band.
 - B. Buy doughnuts and sell them.
 - C. Replace the instruments.
 - D. Raise the price of doughnuts.
48. K & K Company has been supporting . . .
- A. commercial companies.
 - B. the brass band club.
 - C. schools and non-profit organizations.
 - D. the community center.
49. How much does K & K Company charge the PTA for doughnuts per dozen?
- A. 5 dollars.
 - B. 10 dollars.
 - C. 12 dollars.
 - D. 50 dollars.
50. How many documents are needed to apply?
- A. One.
 - B. Two.
 - C. Three.
 - D. Four.
51. The letter to the doughnut company should include . . .
- A. how many doughnuts will be needed.
 - B. the purpose of the PTA.
 - C. the date of the purchase.
 - D. how the PTA will use the money.

52. What does Mr. Sinclair want Mr. Sato to do?
- A. Send him a reply soon.
 - B. Replace the instruments.
 - C. Send Mr. Sinclair a file.
 - D. Call the doughnut company.