

英 語

注 意

1. 問題は全部で13ページである。
2. 解答用紙に氏名・受験番号を忘れずに記入すること。(ただし、マーク・シートにはあらかじめ受験番号がプリントされている。)
3. 解答はすべて解答用紙に記入すること。
4. 問題冊子の余白等は適宜利用してよいが、どのページも切り離してはいけない。
5. 解答用紙は必ず提出のこと。この問題冊子は提出する必要はない。

マーク・シート記入上の注意

1. 解答用紙(その1)はマーク・シートになっている。HBの黒鉛筆またはシャープペンシルを用いて記入すること。
2. 解答用紙にあらかじめプリントされた受験番号を確認すること。
3. 解答する記号・番号の○を塗りつぶしなさい。○で囲んだり×をつけたりしてはいけない。

解答記入例(解答が1のとき)

1	●	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
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4. 一度記入したマークを消す場合は、消しゴムでよく消すこと。×をつけても消したことになる。
5. 解答用紙をよごしたり、折り曲げたりしないこと。

1

次の文を読み、以下の問いに答えなさい。

Jet lag is also known as time zone change syndrome or desynchronization. Jet lag can occur when people travel rapidly from east to west, or west to east on a jet plane. It is a physiological condition which upsets our body's circadian rhythms—hence, it is classified as a circadian rhythm disorder. Jet lag symptoms tend to be more severe when the person travels from westward compared to eastward.

Circadian rhythm—this is the 24-hour cycle in the biochemical, physiological and behavioral process of our bodies. In layman's terms, it means our *body clock*. The word *circadian* comes from the Latin word *circa* meaning “about”, and the Latin word *diem* or *dies* meaning “day”. Our circadian rhythms are driven by an internal time-keeping system. This biological clock is entrained by external environmental occurrences, such as the light-dark cycle of night and day. Put simply, our circadian rhythm regulates our daily activities, such as sleep, waking, eating and body temperature regulation. Problems readjusting our internal biological clock causes jet lag, as do problems with shift work, and some sleeping disorders.

People with jet lag have their sleep-wake patterns disturbed. They may feel drowsy, tired, irritable, lethargic and slightly disoriented. ¹³ The more time zones that are crossed rapidly, the more severe jet lag symptoms are likely to be.

Researchers from the University of Washington revealed that the disruption occurs in two separate but linked groups of neurons in a structure called the suprachiasmatic nucleus, below the hypothalamus at the base of the brain. One group is synchronized with deep sleep that results from physical fatigue and the other controls the dream state of rapid eye movement, or REM, sleep.

The term “jet lag” is a relatively new one, because up to about 80 years

ago nobody travelled across many time zones rapidly — there were no jets or any other kind of rapid transportation. For this reason, many languages, such as Spanish or German also use the English term “jet lag” or “jetlag” in their own languages. In French it can be called *le décalage horaire*.

The older a human is, the more severe are their jet lag symptoms, and the longer they will take to get their body clocks back into synch. If a 60 year-old adult travels with a child from San Francisco to London by plane, the child’s symptoms will usually be much milder, and he/she will recover faster.

If we travel across a number of time zones and experience daylight and darkness contrary to the rhythms we are used to, our body clock will be out of synch (synchronization). Our natural circadian rhythm, our sleep-wake pattern will be upset, as will our rhythms for eating and working times. Our hormone regulation may be out of synch with what is going on around us, as perhaps might be our body temperature control. Until all these factors are able to respond properly to our new environment we are jet-lagged.

Travelling through time zones, and also from the northern hemisphere to the southern hemisphere at the same time can cause additional problems. Not only does the body have to get used to a new time zone, but the seasons are different. If you suffer from hayfever and leave the northern hemisphere in autumn (fall) and land about 400 miles south of Buenos Aires, Argentina, your dormant hay fever may return. Your body will have to cope with a change in daily occurrences as well as seasonal phenomena.

However, jet lag has to have an east-west or west-east movement for jet lag to occur. Flying from Chicago to Santiago, Chile will not cause jet lag because it is only straight down, while a trip from London to Tokyo by plane will. Even a flight from the eastern coast of the USA to its western coast will cause jet lag.

Jet lag does not usually occur if the individual crossed just one or two time zones.

Experts say that there is a link between environmental levels of oxygen and susceptibility to jet lag. An airplane's cabin air pressure is much lower than it is at sea level, meaning that the amount of oxygen reaching the brain may be lower when most people are flying. ¹⁴This may make us slightly lethargic, resulting in a higher risk of more severe jet lag symptoms. If the flyer has an underlying medical condition, such as anemia or heart disease, having less oxygen may worsen jet lag symptoms even more. In all these cases jet lag will only occur if the flyer travels across at least two time zones (probably at least 3 time zones).

Which is worse, east-west or west-east? — If you travel eastward the chances of more severe symptoms are greater, because the day will seem longer.

If you land in London from Chicago at 10pm London time, it is still 4pm Chicago time. Come midnight it will be hard to sleep, because for your body clock it is still 6pm (not bed time). However, if you land in Chicago from London, by 10pm you will find it easier to get to sleep, because 10pm in Chicago is 4am in London — for your body clock, if you live in London it is very late to be awake. A good night's sleep helps you recover from jet lag more quickly.

Experts say that drinking alcohol during your flight may result in more severe jet lag symptoms when you arrive at your destination.

Notes:

desynchronosis 物事が関連のない時期に起こる時に存在する現象,
physiological 生理学上の, entrain(ed) 同調する, drowsy 眠そうな,
lethargic 無気力な, disoriented 混乱した, neuron(s) 神経細胞,
suprachiasmatic nucleus 視神経交差上核, hypothalamus 視床下部,
be synchronized with …と一致した, hemisphere 地球の半球,
hay fever 花粉症, susceptibility 感じやすいこと,
cabin 航空機などの機室, anemia 貧血症

[1] 下線部A, Bを日本語にしなさい。(解答用紙その2)

[2] 1～15の質問に対して英文の内容から判断し, 最も適切だと思われるものを一つ選び, その番号をマークしなさい。(解答用紙その1)

1. What is the best title for this article?

- (1) Jet Lag: Its Causes
- (2) The Elderly Are at Risk When Flying
- (3) Scientists Find a Cure for Jet Lag
- (4) Jet Lag: Resetting our Body Clocks

2. Another term for jet lag is

- (1) body clock.
- (2) circadian rhythms.
- (3) physiological condition.
- (4) time zone change syndrome.

3. From what language does the word *circadian* come from?
- (1) English.
 - (2) Latin.
 - (3) French.
 - (4) None of the above.
4. Which statement is NOT true?
- (1) Jet lag is the only cause that disrupts our biological clocks.
 - (2) A change in a person's work schedule can produce the same effect as jet lag.
 - (3) People with certain sleep disorders can experience the same effects as those brought on by jet lag.
 - (4) The light-dark cycle of day and night affects our body clocks.
5. Which statement is true?
- (1) People suffering from jet lag are usually only mentally affected.
 - (2) People suffering from jet lag do not feel tired but only sleepy.
 - (3) People flying farther and faster recover from jet lag more quickly than those flying shorter distances and at a slower pace.
 - (4) People flying farther and faster across several time zones experience more severe jet lag symptoms.
6. Researchers at the University of Washington were able to determine that the disruption in the sleep-wake patterns
- (1) is related to the disruption of rapid eye movement sleep and the ability to dream.
 - (2) takes place in the hypothalamus of the brain.
 - (3) occurs in two separate groups of neurons that are both related to deep sleep.
 - (4) happens in two separate groups of neurons that are linked.

7. Which group of people are most likely to suffer severe jet lag?
- (1) Younger children flying east to west.
 - (2) Older people who fly over several time zones.
 - (3) Older people who cross only a few time zones when traveling.
 - (4) Younger children no matter in which direction they fly.
8. When our body clocks are disrupted,
- (1) our sleep-wake patterns will be upset.
 - (2) we will eat at the same times we normally do.
 - (3) our body temperature will not be affected.
 - (4) we will respond properly to the environment.
9. Flying north to south
- (1) will not cause dormant symptoms related to seasonal conditions.
 - (2) will not lead to the severest symptoms of jet lag.
 - (3) for a few hours will disrupt our body clocks.
 - (4) for a long distance will not cause additional problems.
10. Which statement is NOT true?
- (1) A person's medical conditions could be affected by oxygen levels in flight.
 - (2) Experts believe there is a link between oxygen levels on planes and jet lag.
 - (3) An airplane's cabin air pressure is much higher than it is at sea level.
 - (4) Traveling across one or two time zones will not cause severe jet lag.

11. Traveling from east to west

- (1) will shorten one's day.
- (2) is easier on the body than traveling from west to east.
- (3) makes it harder to fall asleep upon arrival.
- (4) can prevent a person from adjusting more easily to the time change.

12. The circadian rhythm is

- (1) disconnected from one's internal body clock.
- (2) only the behavioral process of one's body.
- (3) the 24-hour cycle in several processes of one's body.
- (4) not affected by external circumstances.

13. What does "they" refer to?

- (1) Sleep disorders.
- (2) Disturbed sleep patterns.
- (3) People with jet lag.
- (4) Circadian rhythms.

14. What does "this" refer to?

- (1) The lack of oxygen reaching a person's brain.
- (2) Cabin pressure at sea level.
- (3) The link between environmental levels of oxygen.
- (4) Flying at sea level.

15. Based on this reading, one would say that a person living in Tokyo and travelling by plane to _____ would most likely experience jet lag.

- (1) Russia
- (2) India
- (3) Taiwan
- (4) Canada

2

以下のそれぞれの定義に従って、最初と最後の文字が与えられた最も適切な単語を書きなさい。ただし、1下線に1文字が入る。(解答用紙その2)

(解答例)

someone who is trained in science, especially someone whose job is to do scientific research

⇒(s _____ t)

正解(scientist)

1. a collection of information that is arranged in rows and columns

⇒(t _____ e)

2. a statement that tells a person what to do and how to do it: an order or instruction

⇒(d _____ s)

3. the correct or desired result of an attempt

⇒(s _____ s)

4. a device that is placed inside a machine (such as a clock, toy or car) to supply it with electricity

⇒(b _____ y)

5. a series of actions that are done in a certain way or order: an established or accepted way of doing something

⇒(p _____ e)

3

次の会話文を読んで、以下の問いに答えなさい。

Joe: So, are you still looking for a part-time job?

Mia: That's right. How about you?

Joe: (16)? I got that internship position at the movie production company.

Mia: (17)! I knew you were the perfect person for it. You've been preparing for some time.

Joe: Thanks. There were some really qualified applicants, so I wasn't sure I would get it.

Mia: I've got a couple of interviews this weekend, so hopefully, I'll get hired soon. (18).

Joe: How many days a week do you want to work?

Mia: Three or four days will do. I want some time to do my own stuff.

Joe: I know what you mean. Summer is a time to have fun. (19) fun, why don't we go to the mall this afternoon?

Mia: (20) good to me. Meet you there at 3:00?

Joe: Sure. I'll see you then.

[1] 下の選択肢1～0の中から、上の空欄16～20に最も適切だと思われるものを一つ選び、その番号をマークしなさい。同じ語句を複数回選択してはならない。(解答用紙その1)

- | | |
|------------------|--------------------|
| 1. Speaking of | 6. Fingers crossed |
| 2. Will do | 7. Fair enough |
| 3. Guess what | 8. Sure thing |
| 4. Sounds | 9. Way to go |
| 5. Can't imagine | 0. Sure |

〔2〕 次の文で、会話文の内容と一致するものは1を、一致しないものは2をマークしなさい。(解答用紙その1)

21. Mia is going to do an internship.
22. Joe and Mia both have their summer plans finalized.
23. Joe wasn't the only qualified applicant.
24. Mia has more than one interview this weekend.
25. Mia wants to have some time for herself this summer.

4 次の日本語の文を表す英文を、与えられた語句を用いて完成させた場合、2番目と4番目になる語句を番号で答えなさい。(解答用紙その1)

26. 有利な為替レートのため、海外旅行をする日本人が増えている。

The .
2番目 4番目

- ① favorable foreign exchange rates ② Japanese
 ③ because of the ④ has increased recently
 ⑤ number of ⑥ traveling abroad
 1) ④-③ 2) ②-④ 3) ⑤-① 4) ⑤-⑥

27. 外国の大学で取得した単位が日本に移せれば、より多くの日本人学生が留学をするであろう。

If credits .
2番目 4番目

- ① study abroad ② more Japanese students
 ③ could be ④ would
 ⑤ earned at foreign universities ⑥ transferred back to Japan
 1) ③-② 2) ①-④ 3) ⑤-③ 4) ⑥-②

28. 上司に明日までに仕事を終わらせろと言われたが、ほとんど不可能だ。

My boss .
2番目 4番目
 impossible.

- ① by tomorrow ② it is ③ told me
 ④ but ⑤ all but ⑥ to finish the job
 1) ①-③ 2) ③-⑥ 3) ⑥-④ 4) ⑥-⑤

