確認問題
340

ことわざ・教養・背景知識 CHECK TEST

背景知識チートシート：医療・脳科学・睡眠 確認問題集

医療・脳・睡眠の確認問題27問。研究を紹介する英文で、主張の強さと重要語を入試形式で確かめる。

元のチートシートへ

月　日　名前　／ 27問

表で解いて、裏で答え合わせ。まちがえた所は元のシートへ。

◆ Ⅰ 次の英文を読み、設問に答えよ

[1] Many students believe that staying up all night is the best way to prepare for an exam. Research on sleep, however, points in the opposite direction. During sleep, the brain does not simply rest. It appears to replay and reorganize information gathered during the day, a process known as memory (1). In a number of experiments, people who slept after learning a list of words remembered more of them the next day than people who stayed awake for the same length of time. [2] Sleep may also help keep the brain healthy. A study published in 2013 found that in mice, waste products were cleared from the brain more quickly during sleep than during waking hours. This finding(ア) attracted a great deal of attention, but it is important to remember that it came from experiments on animals. Whether the same process works in the same way in humans is still being studied. [3] Taken together, these studies suggest that sleep is not a waste of time but an investment(イ) in learning. Cutting it short in order to study more may do more harm than good.

1 Choose the best word for (1).

a immunity　b deprivation　c resistance　d consolidation

2 下線部(ア) This finding の内容として最も適切なものを選べ。

a 睡眠中に脳が完全に休んでいること

b 単語を覚えた後に眠った人の方が翌日よく覚えていたこと

c マウスでは、起きている間より睡眠中の方が脳の老廃物が速く取り除かれること

d 人間でも、睡眠中に脳の老廃物が速く取り除かれること

3 The underlined phrase (イ) an investment is closest in meaning to ＿＿＿.

a something that brings benefits later

b something that should be avoided

c something that only adults need

d something that costs a lot of money

4 According to the passage, which of the following is true?

a Staying up all night is the most effective way to prepare for an exam.

b The brain stops working completely while we are asleep.

c The 2013 study proved that sleep cleans the human brain.

d People who slept after learning words remembered more of them than those who stayed awake.

5 What is the author's attitude toward the 2013 study?

a It is interesting, but its results should not be applied to humans too quickly.

b It shows that studying at night damages the brain.

c It proves that humans and mice sleep in exactly the same way.

d It is worthless because it was based on animals.

6 Which of the following best expresses the main idea of the passage?

a Animal studies are more reliable than studies on humans.

b Getting enough sleep is an important part of learning.

c Sleep matters only for physical health, not for the mind.

d Students should study only in the morning.

◆ Ⅱ 次の英文を読み、設問に答えよ

Antibiotics are among the most important discoveries in the history of medicine. The first of them, penicillin, was found almost by accident in 1928, when Alexander Fleming noticed that bacteria would not grow around a certain mold. (A) Since then, antibiotics have saved countless lives. (2), they must be used with care. To begin with, they work against bacteria, but not against viruses. (B) This means that taking them for a common cold, which is usually caused by a virus, does nothing to help. (C) Worse still, every time antibiotics are used, any bacteria that happen to survive can multiply and pass on their resistance(ウ). (D) Over time, drugs that once worked well may become useless. In this sense, the careless use of antibiotics buys a small benefit today at the cost of a large risk tomorrow.

7 次の英文を入れるのに最も適切な位置を、本文の (A)～(D) から選べ。It took more than ten years, however, before it could be produced in large enough amounts to treat patients.

a (A)　b (B)　c (C)　d (D)

8 Choose the best word or phrase for (2).

a In other words　b However　c Therefore　d For example

9 The underlined word (ウ) resistance here means ＿＿＿.

a the ability to survive the drug　b the power to cause a cold

c the speed at which bacteria grow　d a strong wish to fight

10 Which of the following is NOT true according to the passage?

a Fleming discovered penicillin as the result of a carefully planned experiment.

b Antibiotics do not help when a cold is caused by a virus.

c Using antibiotics carelessly can make them less effective in the future.

d Antibiotics have saved a great many lives.

11 本文最後の文の the careless use of antibiotics buys a small benefit today at the cost of a large risk tomorrow の意味として最も適切なものを選べ。

a 目先の小さな利益と引きかえに、将来の大きな危険を招く

b 今日も将来も、危険は小さいままである

c 今日の危険を減らすために、将来の利益をあきらめる

d 将来の利益のために、今日の小さな危険を受け入れる

◆ Ⅲ 空所に入る最も適切な語句を選べ

12 In a ＿＿＿ trial, neither the patients nor the doctors know who is receiving the real drug.

a short-term　b large-scale　c double-blind　d follow-up

13 Patients who were given a sugar pill reported less pain. This is an example of the ＿＿＿ effect.

a domino　b nocebo　c side　d placebo

14 Our internal clock, or ＿＿＿ rhythm, runs on a cycle of about 24 hours.

a musical　b annual　c circadian　d seasonal

15 When most people in a community are immune to a disease, even those who are not immune are protected. This is called ＿＿＿ immunity.

a personal　b partial　c temporary　d herd

16 Studies show that people who sleep less tend to weigh more. However, this does not prove that lack of sleep ＿＿＿ weight gain.

a prevents　b delays　c causes　d reduces

17 The brain can change its structure in response to experience. This ability is known as ＿＿＿.

a neurotransmitter　b circadian rhythm　c cortisol　d neuroplasticity

18 A ＿＿＿ lifestyle, with long hours of sitting at a desk and little physical activity, is linked to various health problems.

a nomadic　b luxurious　c competitive　d sedentary

19 In the 1840s, Semmelweis showed that hand washing by doctors greatly reduced deaths, but his idea was ＿＿＿ by most doctors at the time.

a praised　b rejected　c adopted　d welcomed

20 An ＿＿＿ is a sudden rise in the number of cases of a disease within one area, while a pandemic spreads across many countries.

a immunity　b antibiotic　c symptom　d epidemic

◆ Ⅳ 下線部の意味に最も近いものを選べ

21 Regular exercise <u>is associated with</u> better memory in older adults.

a is linked to　b is proven to cause　c has nothing to do with　d is harmful to

22 The new drug <u>had little effect on</u> most of the patients.

a worsened the condition of

b greatly improved the condition of　c was never given to

d hardly changed the condition of

23 <u>Chronic</u> stress can harm both the body and the mind.

a Imaginary　b Long-lasting　c Sudden　d Mild

24 Using a smartphone late at night can <u>rob teenagers of</u> sleep.

a teach teenagers about　b take away sleep from teenagers

c help teenagers enjoy　d give teenagers more

25 The researchers <u>ruled out</u> the possibility that the results were caused by chance.

a ignored　b confirmed　c suggested　d excluded

◆ Ⅴ 設問に答えよ

26 次の英文を和訳せよ。The fact that two things happen together does not necessarily mean that one causes the other.

27 次の日本文を英訳せよ。病気は治すより防ぐ方がよい。

1 **d consolidation**
memory consolidation＝記憶の定着。直前の「その日の情報を再生し整理する」の言いかえ。sleep deprivation（睡眠不足）は逆の話、resistance・immunity は病気の文脈の語。→ シートの『必須キーワード』

2 **c マウスでは、起きている間より睡眠中の方が脳の老廃物が速く取り除かれること**
指示語は直前の文を受ける。in mice の実験の結果。「人間でも」は次の文で「まだ研究中」とされ、動物→ヒトへの広げすぎ。単語の実験は第1段落の別の研究。

3 **a something that brings benefits later**
not a waste of time but an investment（時間の無駄ではなく投資）＝後で見返りがあるもの。眠ると記憶が定着する、という本文全体の内容とも合う。お金の意味にとるのは文脈無視。

4 **d People who slept after learning words remembered more of them than those who stayed awake.**
第1段落の実験の言いかえ。「脳が完全に止まる」は does not simply rest と逆、「人間の脳で証明」は動物実験と may の言い過ぎ、「徹夜が最善」は学生の思い込みとして否定された内容。

5 **a It is interesting, but its results should not be applied to humans too quickly.**
attracted a great deal of attention, but … came from experiments on animals から「注目すべきだが、ヒトへの当てはめは慎重に」。worthless は否定しすぎ。研究の長文は筆者の慎重さの度合いが狙われる。

6 **b Getting enough sleep is an important part of learning.**
第3段落 Taken together（まとめると）の後が結論。sleep is … an investment in learning の言いかえ。心には関係ないとする選択肢は記憶の定着の話と矛盾する。

7 **a (A)**
it はペニシリンを指すので、Fleming の発見の直後。「偶然見つかった。しかし薬として量産できたのは10年以上後」→ Since then（それ以来）と時の流れもつながる。代名詞と however が決め手。

8 **b However**
「無数の命を救った」（プラス）⇔「注意して使う必要がある」（マイナス）の対比なので逆接。Therefore だと「命を救ったから注意が必要」と因果がおかしい。

9 **a the ability to survive the drug**
生き残った菌が増えて受け継ぐもの＝薬に負けない性質（耐性）。antibiotic resistance（抗生物質耐性）はこのテーマの最重要語。「抵抗したい気持ち」は日常の意味に引っぱられた誤り。

10 **a Fleming discovered penicillin as the result of a carefully planned experiment.**
almost by accident（ほぼ偶然）と矛盾する。ほかの3つは does nothing to help・may become useless・saved countless lives の言いかえで一致。→ シートの『よく紹介される研究・出来事』

11 **a 目先の小さな利益と引きかえに、将来の大きな危険を招く**
at the cost of ～＝～を代償として。今の小さな利益を得る代わりに将来の大きな危険を背負う、という皮肉。シートの論理の型『目先と長期』そのもの。

12 **c double-blind**
double-blind＝二重盲検の。患者も医師も知らない＝「二重に目隠し」。期待や思い込みで結果がゆがむのを防ぐ。neither A nor B＝AもBも～ない。

13 **d placebo**
有効成分のない偽薬で痛みが減った＝プラセボ効果。nocebo は思い込みで悪くなる逆の現象なので less pain と合わない。side effect は副作用。

14 **c circadian**
circadian rhythm＝概日リズム（体内時計）。circa（約）＋dies（日）で「約1日」。about 24 hours が言いかえ。seasonal・annual は季節・1年の周期。

15 **d herd**
herd immunity＝集団免疫。herd は家畜の群れ。多くが免疫を持つと病気が広がりにくく、免疫のない人も守られる。予防接種の「個人の自由か社会の健康か」の論点で出る。

16 **c causes**
tend to（傾向がある）は相関。However＋does not prove で「因果までは証明されない」。Correlation does not necessarily mean causation. の考え方。

17 **d neuroplasticity**
neuroplasticity＝神経可塑性（経験で脳が変わる力）。plastic＝形を変えられる。neurotransmitter は神経伝達物質、cortisol はストレスホルモンで「能力」ではない。

18 **d sedentary**
sedentary＝座りがちな。sitting … with little physical activity が言いかえ。nomadic（遊牧の・移動する）は逆のイメージ。

19 **b rejected**
but があるので「死亡を減らした」と逆の流れ＝受け入れられなかった。発見の物語の型『最初は認められない→やがて常識に』。welcomed・praised・adopted はどれも but と合わない。

20 **d epidemic**
epidemic＝（地域の）流行、pandemic＝世界的大流行。pan＝すべて。while が対比を示すので、pandemic と対になる語を選ぶ。

21 **a is linked to**
be associated with＝～と関連がある（相関）。「原因と証明された」は言い過ぎで、研究の選択肢で最もよく使われる罠。

22 **d hardly changed the condition of**
little（ほとんどない）は否定。have little effect on＝～にほとんど効果がない。a little（少しある）との区別も狙われる。悪化させた、とまでは言っていない。

23 **b Long-lasting**
chronic＝慢性の（長く続く）。⇔ acute（急性の）。短期のストレスは力を発揮させることもあるが、慢性のストレスは害がある、がシートの論点。

24 **b take away sleep from teenagers**
rob A of B＝AからBを奪う。deprive A of B と同じ形で、sleep deprivation（睡眠不足）につながる。of は「分離」の of。

25 **d excluded**
rule out＝（可能性を）除外する。偶然による可能性を否定した、の意。confirmed（確かめた）は逆。ignored は「無視した」で、検討して除いたわけではない。

26 **2つのことが同時に起こるという事実は、必ずしも一方がもう一方の原因であることを意味しない。**
採点ポイント：the fact that～（～という事実：同格）／not necessarily（必ずしも～ない：部分否定）／one … the other（一方…もう一方）。「相関≠因果」の考え方。

27 **It is better to prevent illness than to treat it.**

採点ポイント：It is better to A than to B／治す＝treat[cure]。
別解：Preventing illness is better than treating it.／
Prevention is better than cure.（ことわざ）

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