

2021 年 度

## 基礎学力テスト I (英語)

時間 60分

### 注意

1. この問題用紙は、表紙1ページ、白紙1ページ、問題6ページである。開始後点検すること。
2. 解答は解答用紙に記入すること。
3. 試験終了後、解答用紙のみ回収する。
4. 問題用紙は持ち帰ってよい。

### 解答記入上の注意

1. 受験番号は解答用紙上段空欄に記入すること。
2. マークを訂正する場合は、プラスチック消しゴムで完全に消し、消しくずを残さないこと。  
マークは*ていねい*にすること。

例： 

基礎学力テストⅠ (全6の1)

1 次の1～8の( )に入れるのに最も適切なものを、下の(a)～(d)からそれぞれ1つずつ選び、その記号をマークせよ。

1. In our country, most blood ( ) are unpaid volunteers that give blood for a community supply.  
(a) accusations (b) donors (c) hostages (d) manuscripts
2. A ( ) is a lack or shortage of a functional entity, by less than normal or necessary supply or function.  
(a) beneficiary (b) deficiency (c) descendant (d) specification
3. There have been a number of studies on this topic, but the results are mixed and ( ) so far.  
(a) inconclusive (b) institutional (c) unconventional (d) undoubted
4. During the chess match, the champion sat quietly, ( ) what move he should take in the next turn.  
(a) menacing (b) abandoning (c) confusing (d) pondering
5. With the current system, it could only take winning a ( ) of the popular vote in the 11 most populous states, containing 56% of the population of the United States, for a candidate to win the Presidency with a mere 26% of the nation's votes.  
(a) particularity (b) separability (c) plurality (d) singularity
6. Telework enables us to work at home without being bothered by commuting a long distance. However, you should be careful not to live a ( ) lifestyle spending too much time in front of a PC.  
(a) sedentary (b) sedate (c) sedative (d) seditary
7. This handbook is designed to take students completely through the scientific experiment step by step. So, what does this have to do with the teacher librarian? A great deal, if you look at the research model to be used in a ( ) science project. It is actually the basis on which all the information literacy models in the 1990s were created.  
(a) formal (b) corrupt (c) reprehensible (d) fraudulent
8. Falls, accidents with sharp objects, and car accidents are the most common causes of open ( ). In the case of a serious accident, one should seek immediate medical care.  
(a) inquiries (b) substances (c) transplants (d) wounds

基礎学力テスト1 (全6の2)

2 次の 1 と 2 の各パラグラフ (段落) には、まとまりをよくするために取り除いた方がよい文が一つある。取り除く文として最も適当なものを、それぞれ下線部(a)～(d)のうちから一つずつ選び、その記号をマークせよ。ただし、各パラグラフは独立したものである。

1.

Can you control your dreams? (a)Researchers wanted to study how people react to external stimuli. (b)Some people, known as "lucid dreamers," are able to change their dreams while they are sleeping. (c)For example, if they do not like a dream, they can change the story to make it more interesting. (d)These talented dreamers are now being asked to help researchers learn how the brain works during the dream state.

2.

Before starting a brainstorming session, there are a few considerations that will help people generate ideas. (a)The people in the room need to feel comfortable with each other. (b)Unless the people in the group know each other well, it will be difficult for them to come up with creative ideas until they relax. (c)If the participants can see each other, then it is easier for everyone to continue. (d)One way is to have everyone introduce himself or herself and answer a few questions from the other members.

(Takeuchi, O. et al. (2019). *English Streamer* より一部改変)

基礎学力テストⅠ (全6の3)

- ③ 次の英文が完成した文章になるように、文意に沿って、(1)～(4)の(a)から(f)を並べ替えた後、それぞれ1番目、3番目、6番目にくるものの記号をマークせよ。

A new University of Wisconsin Oshkosh analysis of raptor teeth published in the peer-reviewed journal *Palaeogeography, Palaeoclimatology, Palaeoecology* shows that Velociraptors and their kin likely did not hunt in big, coordinated packs like dogs. The raptors, with their sickle-shaped talons were made famous in the 1993 blockbuster movie *Jurassic Park*, which portrayed them as highly intelligent, apex predators that worked in groups to hunt large prey.

Raptorial dinosaurs often are shown as hunting in packs similar to wolves, just like in the movie *Jurassic Park*. However, the evidence for this behavior is not altogether convincing. Since we have no way (1) [(a) these dinosaurs hunt (b) methods to determine (c) use indirect (d) in person, we must (e) their behavior in life (f) of watching].

Though widely accepted, evidence for the pack-hunting dinosaur proposed by the late famed Yale University paleontologist John Ostrom is relatively weak. The problem with this idea is that living dinosaurs (birds) and their relatives (crocodilians) do not usually hunt in groups and rarely hunt prey larger than themselves. Also, (2) [(a) whether the animals actually (b) hunting does not fossilize so (c) to hunt prey (d) behavior like pack (e) we cannot directly test (f) worked together].

Recently, scientists have proposed a different model for behavior in raptors that is thought to be more like Komodo dragons or crocodiles, in which individuals may attack the same animal but cooperation is limited. In Komodo dragons, babies are at risk of being eaten by adults, so they take refuge in trees, where they find a wealth of food unavailable to their larger ground-dwelling parents. Animals that hunt in packs do not generally show this dietary diversity.

Looking at the (3) [(a) we can come (b) hunted in groups (c) diet of young raptors (d) for whether they (e) up with a hypothesis (f) versus old raptors]. To do this, the scientists considered the chemistry of teeth from the raptor *Deinonychus*, which lived in North America during the Cretaceous Period about 115 to 108 million years ago.

Stable isotopes of carbon and oxygen were used to get an idea of diet and water sources for these animals. The scientists also looked at a crocodilian and an herbivorous dinosaur from the same geologic formation. The scientists found that the Cretaceous crocodilians, like modern species, show a difference in diet between the smallest and largest teeth, indicating a distinct transition in diet as they grew.

The researchers believe this is what should be expected for an animal where the parents do not provide food for their young. They also saw the same pattern in the raptors, (4) [(a) teeth and the largest teeth (b) where the smallest (c) carbon isotope values, (d) eating different foods (e) do not have the same average (f) indicating they were]. This means the young were not being fed by the adults, which is why they believe *Jurassic Park* was wrong about raptor behavior.

(Frederickson, J.A. (2020). *UW Oshkosh Today* より一部改変)

基礎学力テストI (全6の4)

4 次の英文を読んで、以下の問いに答えよ。

Whether it be a brisk walk around the park or high intensity training at the gym, exercise is very good for your body and your health. But what if you could harness the benefits of a good workout without ever moving a muscle?

Michigan Medicine researchers studying a class of naturally occurring protein called Sestrin have found that it can mimic many of exercise's effects in flies and mice. The findings could eventually help scientists combat muscle wasting due to aging and other causes.

Researchers have previously observed that Sestrin ( 1 ) in muscle following exercise. A team of researchers wanted to know more about the protein's apparent link to exercise. Their first step was to encourage a bunch of flies to work out. Taking advantage of *Drosophila* flies' normal ( 2 ) to climb up and out of a test tube, researchers developed a type of fly treadmill. Using it, the team trained the flies for three weeks and compared the running and flying ability of normal flies with that of flies bred to lack the ability to make Sestrin.

They found that flies can usually run around four to six hours at this point and the normal flies' abilities improved over that period. The flies without Sestrin did not improve with exercise. Further, when they overexpressed Sestrin in the muscles of normal flies, essentially maxing out their Sestrin levels, they found those flies had abilities above and beyond the trained flies, even without exercise. In fact, flies with overexpressed Sestrin did not develop more ( 3 ) when exercised.

The ( 4 ) effects of Sestrin included some more elements as well. Mice without Sestrin lacked the improved aerobic capacity, improved respiration and fat burning typically associated with exercise.

The researchers suggested that Sestrin can coordinate these biological activities by turning on or off different ( 5 ) pathways. This kind of combined effect is important for producing exercise's effects.

The scientists also demonstrated that muscle-specific Sestrin can help prevent atrophy in a muscle that is ( 6 ) such as the type that occurs when a limb is in a cast for a long period of time. This highlights that Sestrin alone is sufficient to produce many benefits of physical movement and exercise. However, scientists still do not know how exercise produces Sestrin in the body. This is a very critical factor for future study and could lead to a treatment for people who cannot exercise.

(Kim, M. et al. (2020). *Nature Communications* より一部改変)

1. 本文の空所 (1) ~ (6) に入れるのに最も適切な語を、下記の (a) ~ (d) からそれぞれ 1 つ選び、その記号をマークせよ。

- |                    |                  |               |                 |
|--------------------|------------------|---------------|-----------------|
| (1) (a) creases    | (b) accumulates  | (c) messes    | (d) ebbs        |
| (2) (a) luxury     | (b) depletion    | (c) instinct  | (d) plight      |
| (3) (a) screen     | (b) compensation | (c) asylum    | (d) endurance   |
| (4) (a) beneficial | (b) commercial   | (c) tactical  | (d) detrimental |
| (5) (a) detaching  | (b) encrusted    | (c) metabolic | (d) smooth      |
| (6) (a) modest     | (b) immobilized  | (c) dominant  | (d) immaculate  |

2. 本文の内容と適合するものを下記の(a)~(h)から 3つ 選び、その記号をマークせよ。

- (a) A type of fly did some exercise during the study.
- (b) It is well known how all proteins are produced.
- (c) The researchers wanted to find out more about the decline of the body's muscles.
- (d) The flies that did not receive Sestrin showed an improvement when exercising.
- (e) Some of the mice used in the study showed an improved ability to breathe.
- (f) An increase of Sestrin in the body can contribute to muscle degeneration.
- (g) Sestrin was found to have similar effects to exercise.
- (h) The researchers wanted to find a way to not exercise at all.

基礎学力テスト1 (全6の5)

- 5 次の英文を読んで、以下の問いの答えを、それぞれ(a)～(d)より1つずつ選びマークせよ。

Japan has long been famed for an intense work culture defined by arduously long hours – it is normal for workers to take the last train home every night. The nation is also the birthplace of *karoshi* – “death from overwork” – a word invented in the 1970s to describe deaths caused by work-related stresses and pressures. Unfortunately, it is still a regular fixture in Japan’s lexicon today. A Japanese university professor specializing in human resources management indicated that Japanese society is collectivist and hierarchical and that many people refrain from taking a holiday because their bosses do not take time off, or they are afraid that it will disrupt the group harmony. Indeed, Japan’s managers were rated the least likely to approve worker leave in a study surveying 19 countries.

The issue of Japan’s working culture was high on the agenda of former Prime Minister Shinzo Abe, as reflected in the government’s new Work Style Reform Bill, which was passed by Japan’s national legislature in 2018 and went into effect the following April. The bill is a cornerstone of his attempts to modernize Japan’s way of working with amendments to eight key labor laws. Initiatives range from caps on excessive working hours to increased flexibility, as well as a requirement for employees to designate at least five days off work for staff with at least 10 days of unused leave. Highlighting the government’s goal of boosting rates of taken annual leave to 70% in 2020, the director of the Work and Life Harmonization Division at the Ministry of Health, Labor and Welfare has admitted that gaining time off work is important to refresh employees both mentally and physically.

The reality of trying to change Japan’s work habits, however, is challenging – particularly when they are so deeply engrained in society, as reflected in a Vacation Deprivation study on annual leave in workforces around the world from Expedia, the travel booking company. Japan scored lowest among 19 countries and regions in its 2018 study, with workers taking on average only half their annual leave – 10 days out of 20. As many as 58% of Japanese workers cited “feeling guilty” as the main reason for not taking their entitled holiday leave in the 2018 Expedia report, with only 43% stating that their employer was supportive of them taking leave – the lowest globally. A gap between generations may exist as well; 62% of Japanese aged 18 to 34 were shown to be feeling vacation deprived, compared to only 40% of over-50s. This generation gap suggests that even the younger employees want and see the need to take more vacation, but are challenged by their superiors who do not think or operate in the same manner.

Work Life Balance Co., Ltd., a Tokyo-based consultancy firm, has advised companies and organizations across the country, like the prime minister’s Cabinet Office and the Japan Post courier company, on how to modernize their workforces. The firm released a video of top management staff talking about what they have missed with their families due to work. Exploring the reasons behind Japan’s low rate of annual leave, companies have not been always found to be understaffed; instead, they seem to need more interpersonal communication. Once employees get used to communicating with each other positively, ( ) information within the team, and confirming that taking days off would not impact their evaluation negatively, most of them start taking more holiday leave.

(Demetriou, D. (2020). *BBC.com* より一部改変)

基礎学力テストⅠ (全6の6)

1. Choose the word that fits best in the (      ) in the passage.
  - (a) sharing
  - (b) such important
  - (c) who gives
  - (d) whose
2. Which of the following items is NOT included in the government's bill to change working habits?
  - (a) flexible working styles
  - (b) law revisions
  - (c) working time reduction
  - (d) annual leave extension
3. Why are Japanese employees unable to take holiday leave easily?
  - (a) Different attitudes toward taking holiday leave exist across generations.
  - (b) Employers are more likely to approve holiday leave than other countries.
  - (c) The working environments lack group harmony and manpower.
  - (d) The government does not admit the necessity to take holiday leave.
4. Which of the following items is suggested as a key to take more holiday leave?
  - (a) sharing travel costs with colleagues
  - (b) securing the correct amount of staff
  - (c) mutual understanding on holiday leave
  - (d) positive attitudes for work
5. Choose the INCORRECT statement about the text.
  - (a) The working culture in Japan has not improved very much in the last 50 years.
  - (b) Many workers hesitate to take holiday leave, being afraid of troubling others.
  - (c) Some features of Japanese society prevent long holiday leave.
  - (d) Many Japanese companies have started to enhance their internal communications.