

## 2023年度一般選抜A試験問題

# 外国語（英語）

### 【注意事項】

1. この問題冊子には答案用紙が挟み込まれています。試験開始の合図があるまで問題冊子を開いてはいけません。
2. 試験開始後、答案用紙の受験番号欄に受験番号を記入しなさい。
3. 問題冊子には計4問の問題が英1～英7ページに記載されています。落丁、乱丁および印刷不鮮明な箇所があれば、手をあげて監督者に知らせなさい。
4. 答案には、必ず鉛筆（黒、「HB」「B」程度）またはシャープペンシル（黒、「HB」「B」程度）を使用しなさい。
5. 解答は答案用紙の指定された場所に記入しなさい。ただし、解答に関係のないことが書かれた答案は無効にすることがあります。
6. 問題冊子の余白は下書きに利用しても構いません。
7. 答案用紙はどのページも切り離してはいけません。
8. 答案用紙を持ち帰ってはいけません。





〔問 1〕 次の英文を読んで、あとの設問に答えなさい。

In January 2020, three-year-old Lucas Kelling was diagnosed with stage 4, high-risk neuroblastoma—a rare, <sup>(7)</sup>( ) ( ) ( ) ( ) ( ) that branch off of the central nervous system. To combat the disease, Lucas, who lives in Chardon, endured numerous chemotherapy treatments, a 12-hour tumor resection and two stem cell transplants.

The therapies that were fighting the cancer took a toll on Lucas and caused him to spend most of June 2020 to March 2021 at Cleveland Clinic Children’s. His hospital stay, coupled with complications from stem cell transplants, kept Lucas <sup>(1)</sup>( ) ( ) ( ) ( ) ( ) that time. “Lucas was quite sick and slept a lot. He didn’t really have the strength to be the kid he was,” says Lucas’ mom, Jamie Kelling. “He lost all of his core strength and most of his ability to walk during the course of his stay in the hospital.”

Soon after his discharge, and after he gained some strength back, Lucas was referred to Cleveland Clinic Children’s Mobility Program for physical therapy. “Lucas <sup>(7)</sup>( ) ( ) ( ) ( ) ( ), walk without support and had very impaired balance. He had significantly decreased strength in all extremities and his endurance was very poor. He had tightness in his ankles, a common side effect of his medications,” says Julie Nowicki, PT, DPT, a pediatric physical therapist at Cleveland Clinic Children’s Mobility Program.

Lucas went to physical therapy (PT) twice a week and focused on standing, balance, transitions and walking with a walker. As he made progress, he was given added challenges like body weight strengthening exercises and activities using TheraBand. Lucas was always willing to try new exercises and enjoyed using the Bosu Ball for balance, dynamic balance surfaces for stability and yoga poses. “I told Lucas if he wanted to play soccer in the fall, he’d <sup>(7)</sup>( ) ( ) ( ) ( ) ( ),” says Jamie.

And work he did—even doing exercises at home for increased improvement. Home exercises included ankle stretching, animal walks (walking like a crab, bear, frog, flamingo or duck), and most importantly, playing with siblings and friends. “My favorite was walking like a bear. It was fun having to use my arms and legs to walk,” laughs Lucas.

Lucas’ PT gradually decreased to weekly therapy sessions as progress was made and then transitioned to monthly follow up care as progress continued. Lucas currently goes to PT every few months <sup>(7)</sup>( ) ( ) ( ) ( ) ( ) progress and to revise his home exercise program. “Lucas has made incredible gains in his strength, range of motion, endurance and balance since starting physical therapy. He’s staying active with recreational activities,” says Julie.

Five-year-old Lucas is now back to being a fun-loving kid. He is kicking goals in soccer, playing with his siblings and can’t wait to go swimming this summer. “Lucas really enjoys his sessions with Julie. She makes PT fun for him. Julie is the reason my son is walking again and I can’t thank her enough for giving <sup>(7)</sup>that back to him,” says Jamie.

出典: “Back In Action: 5-Year-Old With Neuroblastoma Learns to Walk Again.”  
*Cleveland Clinic: Patient Stories/580.*

(1) 下線部(ア)～(オ)に入るように各語群にある語句を最も適当な順に並べ替えて、意味の通る英文を完成させなさい。

語群(ア): aggressive / attacks / cancer / that / the nerves

語群(イ): for / his hospital bed / in / of / the majority

語群(ウ): stand / to / unable / upright / was

語群(エ): for / have / it / to / work

語群(オ): ensure / is / ongoing / to / there

(2) 下線部(カ)が指す内容を日本語で答えなさい。

〔問2〕 次の英文を読んで、あとの設問に答えなさい。

Danielle Payton’s metabolism was a mystery for most of her adult life. When she was 18, she weighed 165 pounds, which made little ( ア ) to the five-foot-four-inch high school shot put champ. “I was a very healthy eater—coming from a family of pescatarians and vegetarians—and an athlete, and I couldn’t lose a single pound,” says Payton.

Just before college, she was diagnosed with polycystic ovary syndrome (PCOS), which causes imbalances in the hormones that regulate both the reproductive system and metabolism. That solved part of the mystery—women with PCOS are ( イ ) to weight gain. But Payton continued to struggle. By the time she turned 24, she weighed 209 pounds and had developed prediabetes. Her search for a solution became more focused and urgent. “I had to find food and exercise that worked for my body,” says Payton, who lives in Miami and is cofounder of kuudose.co, an online fitness and wellness program. For her, that meant ( ウ ) up processed and fried foods, eating more animal protein, doing short daily bouts of walking (30 minutes) and strength training (5 to 15 minutes), and taking a probiotic supplement. She also takes doctor-prescribed medication for PCOS (metformin/spironolactone), which seems to help keep her weight in ( エ ). It took her four years, but Payton ultimately lost about 90 pounds and now is fairly steady at 122. “Mentally, I am tougher because of this process of standing up for my body and figuring out what worked for me,” she says. “(オ) No one knows your body like you do, and listening to your body is crucial.”

Most of us have heard that a good metabolism is the golden ( オ ) to weight loss, but that seriously underplays metabolism’s role in our bodies and in our health. Simply ( カ ), metabolism is the energy used by the physical processes that keep us alive. We ( キ ) up to 80 percent of daily calories while at rest (referred to as basal, or resting, metabolism) by breathing, digesting, maintaining circulation, and more. But while that fact inspires comparisons of your metabolism to a fire-burning furnace, it’s really more like a busy city transit system, delivering the right mix of chemicals to the right cells at the right times to extract energy from food and keep the whole machine (i.e., your body) ( ク ) seamlessly. That’s why the first sign of a troubled metabolism may be the faltering of one of these systems <sup>(ク)</sup>manifesting as rising insulin, cholesterol, or triglyceride levels or fat deposits around your waist—all markers of metabolic disorder, which heralds a higher risk of diabetes, heart disease, or stroke.

But your biggest risk—the “most universal contributor” to metabolic decline ( ケ ) to an article co-written by Nir Barzilai, MD, director of the Institute for Aging at the Albert Einstein School of Medicine—is aging. Aging naturally causes metabolic decline and also makes us more likely to require medications to ( コ ) issues such as high blood pressure or depression that could slow metabolism. <sup>(ク)</sup>While there’s obviously no fix for aging, you can learn to fine-tune your metabolism as your body changes over time, priming it to deliver the right mix of hormones, much as Payton did. “Find what works for you—then do it consistently,” she says.

出典: Courtenay Smith, “How to Fine-Tune Your Metabolism.”  
*Reader’s Digest*, February 2021. Pages 47-48.

(1) 英文の意味が通るように、空所(ア)～(コ)に入る最も適当なものを①～⑩から1つ選び、数字で答えなさい。同じものを2度使うことはない。

- ① according    ② address    ③ burn    ④ check    ⑤ giving  
⑥ prone    ⑦ put    ⑧ running    ⑨ sense    ⑩ ticket

(2) 下線部(サ)を和訳しなさい。

(3) 下線部(シ)と最も意味の近いものを1つ選び、数字で答えなさい。

- ① appearing    ② improving    ③ supplying    ④ utilizing

(4) 下線部(ス)を和訳しなさい。

〔問 3〕 次の英文を読んで、あとの設問に答えなさい。

In some respects, hibernating bears, ground squirrels and other animals share striking similarities with people suffering from Alzheimer’s or Parkinson’s disease. In humans, those diseases are marked by a buildup of “tau” proteins that form tangles in the brain. Hibernating bear and squirrel brains go through a similar transformation, perhaps because the proteins help to protect neurons during <sup>(ア)</sup>the long rest. “During hibernation, there is a massive accumulation of tau in the brain and central nervous system,” says Elena Gracheva, a neurophysiologist at Yale University.

The big difference: While tau proteins continue to accumulate in Alzheimer’s and Parkinson’s patients as the disease inevitably worsens, hibernators quickly clear the tangles in an impressive feat of spring cleaning. Their brains show no signs of damage, and their memories and motor skills are completely intact. “Hibernators do just fine,” says Gracheva, whose work is partly funded by the Michael J. Fox Foundation for Parkinson’s Research.

Could it ever be possible to give human patients a similar awakening? Gracheva cautions that the science is still ( イ ) an early stage, but researchers are carefully studying hibernation to gain new insights into progressive brain disease. A 2021 study published in *Scientific Reports* found that a single round of induced hibernation and awakening strengthened the brain connections and improved the memories of mice that had a condition very similar to Alzheimer’s. <sup>(ウ)</sup>The authors suggest that it might be possible to develop drug therapies that could provide a similar cognitive boost to people, no hibernation required.

Gracheva, who has spent much of her career working with hibernating ground squirrels, is now part of a team of researchers studying the brain changes that cause cognitive impairment in people with Parkinson’s disease. Specifically, she will be working on gene sequencing to help better understand the genetic difference between the brain cells that are <sup>(エ)</sup>vulnerable to Parkinson’s disease and the brain cells that remain unaffected.

She’ll be using some of the same approaches that she has used in her studies of hibernators—another nod to remarkable similarities between animals awaking and reactivating in the spring and people who seek a quite different kind of recovery. “Studying bears and marmots,” she says, “can tell us something very fundamental about how the human nervous system ( オ ) .”

出典: Chris Woolston, “Why Amazing Discoveries About Bear Hibernation May Help Improve Human Health.” *Knowable Magazine*, April 15, 2022.



(1) 下線部(ア)が具体的に指す内容を1つ選び、数字で答えなさい。

- ① accumulation      ② hibernation      ③ Parkinson's disease      ④ transformation

(2) 空所(イ)に入る最も適切なものを1つ選び、数字で答えなさい。

- ① at      ② for      ③ on      ④ with

(3) 下線部(ウ)を和訳しなさい。

(4) 下線部(エ)と最も意味の近いものを1つ選び、数字で答えなさい。

- ① immune to      ② resistant to      ③ susceptible to      ④ traced to

(5) 空所(オ)に入る最も適切なものを1つ選び、数字で答えなさい。

- ① functional      ② functionally      ③ functioning      ④ functions

〔問 4〕 次の和文を英訳しなさい。

未来の健康は、ふだん特に意識しなくても、さまざまなテクノロジーが先回りして健康維持をサポートしてくれる、いわば“見えない医者”、“見えない管理栄養士”によって支えられるでしょう。「気がついたら、120 歳になっていた」となる人がひょっとしたら続出するかもしれません。

石川伸一著、『「食べること」の進化史』。光文社、2019 年。147 頁。











