

[ I ] 次の英文 ( i ) ~ ( viii ) を読んで、設問 1 ~ 25 の解答として最も適切なものを、( A ) ~ ( D ) の中から選びなさい。

( i ) Cats get seasonal allergies to pollen and grass, and some have year-round allergies to fleas and dust mites. Sandy Willis, a veterinary internist who advises the American Veterinary Medical Association, says that when cats interact with an allergen, their body sends immunoglobulin E antibodies to link with it, triggering the release of histamine and other chemicals that cause itchy eyes, runny noses, sneezing, hives, and rashes.

The same process happens in other pets (for example, dogs, rats, and hamsters) and humans. In rare cases, cats can even be allergic to people. People allergies are uncommon, since we bathe more often than most other species and don't shed as much hair and dead skin — which trigger our own allergies to pets. When cats do have a bad reaction to us, it's usually caused by residue from our perfume, soap, or laundry detergent. Any water-based cleaning product usually contains some preservatives. Cats tend to be more sensitive to chemicals than dogs. Specific chemical allergies are difficult to isolate and diagnose, so pets can't be vaccinated for them or build up their tolerance with exposure like they can for organic allergies. Cats can even be allergic to other pets. Veterinarians offer antihistamines for dogs to treat cat, horse, and bird allergies. Cat antihistamines recently hit the market, too.

1. Why are cats rarely allergic to humans?
  - ( A ) Cats have lived with humans for centuries.
  - ( B ) Human skin produces fewer allergens.
  - ( C ) Humans don't have much body hair.
  - ( D ) People don't lose much hair and skin.
  
2. What most likely would cause cats to have an allergic reaction around humans?
  - ( A ) Hair
  - ( B ) Skin
  - ( C ) Soap
  - ( D ) All of the above
  
3. What can be done to help cats with chemical allergies?
  - ( A ) Bathe more often.
  - ( B ) Develop tolerance.
  - ( C ) Receive vaccinations.
  - ( D ) None of the above
  
4. What is the best title for this passage?
  - ( A ) Antihistamines Help Pets with Allergies
  - ( B ) Cats' Allergies and Their Treatment
  - ( C ) Human Allergies and Their Treatment
  - ( D ) The Challenges of Pet Allergies

(ii) On a sweltering August morning, in a classroom overlooking New York’s Hudson River, a group of 3-year-olds are rolling sticky rice balls in chocolate sprinkles, as a teacher guides them completely in Mandarin. This is just one toddler learning game at the total-immersion language summer camp run by the primary school Bilingual Buds, which offers a year-round curriculum in Mandarin for kids as young as 2.

Bilingualism, of course, can be a leg up for college admission and job hunting. But a growing body of research now offers a further rationale: The regular, high-level use of more than one language may actually improve early brain development. According to several different studies, command of two or more languages bolsters the ability to focus in the face of distraction, decide between competing alternatives, and disregard irrelevant information. These essential skills are grouped together, known in brain terms as “executive function.” The research suggests they develop ahead of time in bilingual children, and are already evident in kids as young as 3 or 4.

While no one has yet identified the exact mechanism by which bilingualism boosts brain development, the advantage likely stems from the bilingual’s need to continually select the right language for a given situation. According to Ellen Bialystok, a professor at York University in Toronto and a leading researcher in the field, this constant selecting process is strenuous exercise for the brain and involves processes beyond those required for monolingual speech, resulting in an extra stash of mental acuity, or, in Bialystok’s terms, a “cognitive reserve.”

5. What is unique about the Bilingual Buds’ curriculum?
  - (A) Children learn bilingually.
  - (B) Children learn by playing.
  - (C) Instructors only teach in Mandarin.
  - (D) Only offered in the summer.
  
6. What is a recently-discovered benefit of being bilingual?
  - (A) Can enhance brain function.
  - (B) Can talk to more people.
  - (C) Get a higher paying job.
  - (D) Get into a better college.
  
7. What is the main idea of this passage?
  - (A) Bilingual people get more executive-level jobs.
  - (B) Immersion is the best way to learn a second language.
  - (C) Learning a second language improves brain development.
  - (D) Learning another language is easier for young children.

(iii) Anyone who has ever tried to record that first feature-length album in his or her dad's garage knows that reflecting, suppressing, and otherwise manipulating sound isn't as simple as it might seem. We've got that egg-carton foam that offers some soundproofing, but beyond such muting materials we have few mature technologies that let us control the way sound travels. But Caltech researchers are working to change that via the first tunable, acoustic diode that can be used to let sound flow in one direction only.

The acoustic diode works much like the electrical component of the same name, letting current (or, in this case, sound waves) pass in one direction but blocking it in the other. Composed of a structured arrangement of elastic spheres that ferry the sound through the material, the diode can be tuned to work only at certain frequencies or to downshift the frequencies moving through the material to lower frequencies as needed.

That opens up the technology to several potential applications. In the case of soundproofing, the technology could enable true one-way transmission of sound (rather than the simple dispersion and muting performed by "soundproofing" foams). But perhaps more interestingly, the material could be used to harvest energy from sound waves.

8. What is the traditional method of soundproofing?

- (A) Blocking
- (B) Muting
- (C) Recording
- (D) Tuning

9. What happens to sound waves using the Caltech technique?

- (A) Blocked
- (B) Dispersed
- (C) Reflected
- (D) Suppressed

10. What is the best title for this passage?

- (A) Caltech Improves Garage Band Recordings
- (B) Electrical Component Leads to Sound Breakthrough
- (C) Researchers Update Soundproofing Technology
- (D) Soundproofing Tech Challenges Scientists

(iv) We just can't get our solar system right. First, the beloved Pluto is downgraded to "dwarf planet." Now it turns out that the moon may be 200 million years younger than scientists estimated. A study in the journal *Nature*, based on a new analysis of a lunar rock brought back to Earth in 1972 by Apollo 16 astronauts, indicates that the moon could be a more youthful 4.36 billion years old — and that the process by which it was formed happened later than scientists thought. Or possibly this lunar rock, part of the moon's crust, isn't exactly what scientists thought it was. Maybe the crust wasn't formed by a magma ocean after all. "And that's a big deal," said Lars Borg, the lead author of the study and a geochemist at Lawrence Livermore National Laboratory. Although not a done deal, scientists will keep studying and debating this. "I'm running a lunar sample on the mass spectrometer as we speak," noted Borg.

For centuries, scientists have been making paradigm-shifting discoveries that reordered our sense of the universe and our place in it. Otherwise, Earthlings would still think that the sun and the planets revolved around Earth, forcing scientists and philosophers to create increasingly elaborate explanations for observations of celestial movements that don't fit that worldview.

11. Why does the author think that "we just can't get our solar system right"?

- (A) Appropriate samples can't be obtained.
- (B) Philosophers and scientists agree to disagree.
- (C) Scientists keep finding new facts about the solar system.
- (D) The public is not kept informed of discoveries.

12. When was the moon rock sample obtained?

- (A) 4.36 billion years ago
- (B) 200 million years ago
- (C) 1972
- (D) Not enough information given

13. What is the best title for this passage?

- (A) Lunar Rock Sample Found to be Incorrect
- (B) Paradigm-shifting Discovery about the Moon
- (C) Scientists Estimate the Age of the Solar System
- (D) Surprising Discoveries about Our Solar System

(v) The dining room table was set with roses and silver candlesticks. At one end, near a grandfather clock, sat two plates of mealworm fried rice. “So, a small lunch,” said my host, Marian Peters. “Freshly prepared.” The inch-long larvae, flavored with garlic and soy sauce, reminded me in texture of delicate, nutty seedpods. “Mealworm is one of my favorites at the moment,” Peters told me, speaking of the larvae of the darkling beetle. When they’re fresh, she added, their exoskeletons don’t get stuck in your teeth.

Based near Amsterdam, Peters’s company, Bugs Originals, has put freeze-dried locusts and mealworms on the shelves at the 24 outlets of Sligro, the Dutch food wholesaler. It has also developed pesto-flavored “bugsnuggets” and chocolate-dipped “bugslibars” — chicken nuggets and muesli bars, respectively, infused with ground-up mealworms. Both, like Peters’s chicken-mealworm meatballs, await approval for sale across the European Union.

The company’s goal is to get consumers to embrace bugs as an eco-friendly alternative to conventional meat. With worldwide demand for meat expected to nearly double by 2050, farm-raised crickets, locusts, and mealworms could provide comparable nutrition while using fewer natural resources than poultry or livestock. Crickets, for example, convert feed to body mass about twice as efficiently as pigs and five times as efficiently as cattle. Insects require less land and water—and measured per kilogram of edible mass, mealworms generate 10 to 100 times less greenhouse gas than pigs.

14. How does Peters’s company get their bugs to consumers?

- (A) Convenience store
- (B) Restaurant
- (C) Wholesaler
- (D) Not enough information given

15. Why should food alternatives be explored?

- (A) Insects cause less pollution.
- (B) Many people prefer the taste of crickets.
- (C) Mealworms have a delicate texture.
- (D) People like to try new things.

16. What is the main idea of this passage?

- (A) Crickets require less space than pigs and cattle.
- (B) Insects are more earth-friendly than conventional meat.
- (C) People like insect meals once they get used to them.
- (D) Sales of insect food products will increase by 2050.

(vi) Can online education be the rock that disturbs the placid waters of American higher education? Several industry experts believe it will have a significant ripple effect on colleges and universities of all sizes in coming years—but only if it's subject to regulation, governed by a common set of accreditation standards, and widely accepted by institutions who have long clung to the traditional face-to-face model of instruction.

Citing the vast online enrollment gains made by for-profit institutions like the University of Phoenix and Kaplan University, Louis Soares, director of postsecondary education at the Center for American Progress, recently dubbed online education a potential “disruptive innovator” in the higher education landscape. “A disruptive innovation always starts out at a lower quality,” he says. “But, if you take that for-profit energy out of higher education, online education wouldn't have grown the way it has in the last 10 years.”

In the coming decade, experts say, college students should expect an increased presence of online classes at traditional nonprofit schools. Already, about 30 percent of American college students take at least one course online, says Elaine Allen, statistical director of the Sloan Survey on Online Education, which monitors student involvement in online higher education.

17. What does the expert imply about online colleges?

- (A) Cheaper tuition
- (B) Greater profits
- (C) Higher enrollment
- (D) Lower quality

18. How might traditional colleges change?

- (A) Higher profits
- (B) Increased presence
- (C) More online classes
- (D) Stronger tradition

19. What is the best title for this passage?

- (A) Computers Change College Curricula
- (B) For-profit Colleges: The Future of Education
- (C) Online Colleges Could Influence Traditional Schools
- (D) The Merits and Demerits of Online Learning

(vii) New York City is exploring ways to reduce waste and improve its residential recycling rate, which is down from what it was a decade ago. One strategy practiced in many large cities is the “pay as you throw” system, which charges residents on the basis of weight for the trash they throw away. New Yorkers now pay for their garbage collection through local taxes and are charged the same thing no matter how much trash they generate. Cities like San Francisco charge residents for trash collection according to the size of the container— for example, \$21.21 a month for the weekly pickup of trash from a 20-gallon cart, \$55.10 for a 64-gallon container and up to \$82.65 for the 96-gallon version— whereas pickups of recyclables or compost are free.

The abundance of apartment buildings versus single-family dwellings in New York City poses extra challenges in introducing such a system. But city officials say they are nonetheless reviewing how such an economic incentive has steered more residents to recycle more and reduce their waste in other cities. Because no other American city is as densely populated as New York, officials are looking at cities like Seoul, which instituted pay-as-you-throw in 1995 for more than 10 million residents. The South Korean capital charges not only by the trash bag but by location, with residents and businesses paying varying rates based on what the actual disposal costs are for a given district.

20. Why do New York City officials want to change the city’s waste collection system?
- (A) Decreased recycling
  - (B) Fewer trash collectors
  - (C) Increased revenues
  - (D) Not enough information given
21. How have other cities improved their trash collection systems?
- (A) Charge by container size
  - (B) Fees calculated by weight
  - (C) Free recycling
  - (D) All of the above
22. What is the main idea of this passage?
- (A) New York learns from other cities about garbage collection.
  - (B) New York officials struggle to fix garbage system.
  - (C) New Yorkers resist efforts to increase trash fees.
  - (D) Seoul’s trash collection is far better than New York’s.

(viii) More American families are eating out than ever before, but what impact are all of those out-of-home meals having on health, not to mention our waistlines? In the first study to examine the relationship between where food is prepared and increased calorie consumption, researchers report that eating commercially-made food can lead children to take in more calories than if they had eaten similar meals at home. And with most Americans taking in about a third of their daily calories from restaurants or other vendors, such trends can only contribute to climbing childhood obesity rates. In the study released today in the Journal of the American Dietetic Association, scientists looked at the eating habits of 29,217 children aged 2 to 18 between 1977 and 2006. They recorded where the food they ate came from, as well as where the youngsters were actually consuming the food, and included meals prepared outside of the home, but eaten at home (take out, pre-packaged supermarket meals) and foods consumed outside of the home (restaurant meals and on-the-go snacks). Fast-food meals accounted for the largest percentage of foods prepared away from home for all ages and even surpassed meals from the school cafeteria in terms of calories consumed. But for foods eaten away from home, store-bought meals beat out all other sources, accounting for the largest percentage of daily calories eaten outside of the home. Fast food was increasingly eaten at home while store-bought prepared foods were now more likely to be eaten on the go.

23. Which of the following is NOT mentioned in the passage?
- (A) Children's eating habits were studied for about 30 years.
  - (B) Eating habits of nearly 30,000 children were investigated.
  - (C) Gender differences were seen in children's eating habits.
  - (D) Researchers looked at where the food was consumed.
24. From where do children get the largest percentage of daily calories eaten away from home?
- (A) Fast-food meals
  - (B) Home-made meals
  - (C) School cafeteria meals
  - (D) Store-bought meals
25. What is the main idea of this passage?
- (A) American children eat more out-of-home meals.
  - (B) Americans take in a third of their calories at restaurants.
  - (C) Children should not eat outside of the home.
  - (D) Commercially-made foods contribute to child obesity.



〔Ⅱ〕 次の設問26～40の空所を補うものとして最も適当な語を、(A)～(K)の中から選びなさい。ただし、使われない語が含まれていることもあります。また、同じ語を繰り返して使うこともできます。空所に何も補う必要のない場合には (L) を選びなさい。

(A) against	(B) around	(C) at	(D) between	(E) in	(F) of
(G) off	(H) on	(I) over	(J) to	(K) with	(L) NO WORD

26. As the new division chief, Junko will work longer hours, but she'll have to take the good \_\_\_\_\_ the bad.
27. It was like I was banging my head \_\_\_\_\_ a brick wall in trying to change her mind.
28. Her letter doesn't communicate much, but reading \_\_\_\_\_ the lines, I can tell that she is sad.
29. The professor put his reputation \_\_\_\_\_ the line writing about the impact of immigrants on social programs.
30. The issue is important, so let's stop beating \_\_\_\_\_ the bush and discuss how we should handle it.
31. According to a recent survey, five percent of men and eight percent of women \_\_\_\_\_ worldwide are obese.
32. Older people with chronic illnesses are usually \_\_\_\_\_ greater risk of contracting colds and influenza.
33. The government forces used only small arms \_\_\_\_\_ their effort to turn back the rebel group.
34. Experts agreed that the cause of the gas pipeline explosion was almost certainly mechanical \_\_\_\_\_ nature.
35. I usually try to avoid responsibilities, but Brady caught me \_\_\_\_\_ guard and I agreed to participate in the project.
36. Last month, Mr. Tanaka, a former diplomat, took \_\_\_\_\_ as president of a well-known company.
37. The proposed center for Japan's pop art will create a new area \_\_\_\_\_ a par with Tokyo's Akihabara district.
38. Due to a high fever and extreme fatigue, the team's best pitcher was confined \_\_\_\_\_ bed.
39. The Bank of Japan has been monitoring key indicators in order to keep abreast \_\_\_\_\_ economic changes.
40. One of my unforgettable memories \_\_\_\_\_ him is his singing the school song at the year-end party.

〔Ⅲ〕 次の設問41～50のA～Dのうち、誤った英語表現を含んだ部分がある場合にはA～Dの中の一つを、誤りがない場合にはEを選びなさい。

41. In this bad economy, more people are calling it quits before aging 65 rather than working longer.  
A B C D  
NO ERROR  
E
42. Since Taro has broad shoulder he has trouble finding shirts that are large enough to fit.  
A B C D  
NO ERROR  
E
43. After losing my sweater somewhere, I looked everywhere I could think, and finally found it out.  
A B C D  
NO ERROR  
E
44. After several years in college studying sociology, Susan became interested in economy.  
A B C D  
NO ERROR  
E
45. Recently I've heard that it's less expensive to rent some office equipment than to buy it.  
A B C D  
NO ERROR  
E
46. During the final minutes of the city championship basketball game, I was very exciting.  
A B C D  
NO ERROR  
E
47. It won't be easy, but she will challenge the English proficiency exam one more time.  
A B C D  
NO ERROR  
E
48. Kevin's salary is so cheap that he can't begin to consider getting married until he is promoted.  
A B C D  
NO ERROR  
E
49. When Kim and Sue were in elementary school, they were said that they looked like sisters.  
A B C D  
NO ERROR  
E
50. If anyone needs assistance with their work, he or she should feel free to ask me. NO ERROR  
A B C D E

〔以下余白〕