

英 語

(問 題)

2013年度

〈2013 H25071119〉

注 意 事 項

1. 問題冊子は、試験開始の指示があるまで開かないこと。
2. 問題は2～11ページに記載されている。試験中に問題冊子の印刷不鮮明、ページの落丁・乱丁および解答用紙の汚れ等に気付いた場合は、手を挙げて監督員に知らせること。
3. 解答はすべて解答用紙の所定欄にHBの黒鉛筆またはHBのシャープペンシルで記入すること。
4. マーク解答用紙については、受験番号を確認したうえ、試験開始後、所定欄に氏名のみを記入すること。
5. マーク欄ははっきり記入すること。また、訂正する場合は、消しゴムでていねいに、消し残しがないようよく消すこと（砂消しゴムは使用しないこと）。

マークする時	<input checked="" type="radio"/> 良い	<input type="radio"/> 悪い	<input type="radio"/> 悪い
マークを消す時	<input type="radio"/> 良い	<input type="radio"/> 悪い	<input type="radio"/> 悪い

6. いかなる場合でも、解答用紙は必ず提出すること。
7. 試験終了後、問題冊子は持ち帰ること。

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

(i) Is coal doomed? The dirty yet abundant energy source has had some rough patches before, but nothing like this. In 1985 coal accounted for 57 percent of all power generated in the U.S. Last year it was 42 percent. The U.S. Energy Information Administration estimates it will fall to 40 percent this year.

Coal is in a struggle with a perfect adversary: Ultracheap natural gas. With all the shale reserves unlocked by using a new mining technique, gas prices have steadily declined since mid-2008, to the point where they're hovering around \$2 per million British thermal units for the first time in a decade. That's lower than coal prices. The natural gas is all domestically derived energy, so the country's fuel import bill doesn't go up. It's clean. And it's so abundant that the industry may run out of places to store it. Utilities that switch to natural gas are already passing savings on to customers. In 2013 residential U.S. utility bills should fall 1 percent. With the price of natural gas around \$2, everyone who can switch is switching.

1. Who suffers from the reduced use of coal?
(A) Energy customers
(B) U.S. Energy Information Administration
(C) Utility companies
(D) None of the above
2. What problem might natural gas producers face?
(A) Competition from imported natural gas
(B) Inadequate storage facilities
(C) Lower prices per million British thermal units
(D) U.S. Energy Information Administration regulations
3. How are consumers reacting?
(A) Concerned about imported gas.
(B) Encouraged by falling prices.
(C) Nostalgic for coal-burning stoves.
(D) Replacing existing energy with gas.
4. What is the main idea of this passage?
(A) Abundant gas reserves enhance stability.
(B) Coal is being replaced by a cheaper, cleaner fuel.
(C) Lower prices produce greater demand.
(D) Utilities are switching to a cheaper alternative.

(ii) The National Science Foundation provided \$10.9 million to convert an old military A-10 Thunderbolt airplane into the world's most formidable storm-chasing research craft, outfitted to withstand the lightning, turbulence, and hail that big clouds unleash. "The A-10 was designed to be shot at," says Paul Smith, an atmospheric scientist at the South Dakota School of Mines and Technology, who helped acquire the aircraft.

The A-10 will replace the T-28 Trojan, which retired from chasing storms in 2005. It can soar more than eight miles high compared with the T-28's five, carrying meteorological equipment into the tops of thunderheads where lightning is generated. Optical imagers will use lasers to cast shadows, capturing the motion of rain, hail, and snow. And the A-10 can stay aloft for three hours, three times as long as the T-28, allowing researchers to observe a storm's full life cycle. The data could improve precipitation forecasts and models of hail formation, ultimately providing more accurate and timely warnings for hurricanes and other severe weather.

But first, the Air Force must reconfigure the A-10 for peacetime duty. The wings will carry instrument pods with sensors to detect wind speed, temperature, and pressure. The 30mm Gatling gun will be removed to make space for computers that analyze sensor readings. To protect the rear engine during extreme precipitation and cold, engineers will install heaters and inflatable bladders that swell to shed ice.

5. Why is an old military airplane being used for weather research?

- (A) Civilian airplanes are not powerful enough.
- (B) Flying into storms is similar to battle conditions.
- (C) Its heavy-duty construction is necessary for storms.
- (D) Weather knowledge is key for national security.

6. How is the new airplane better than the old airplane?

- (A) Faster
- (B) Flies longer
- (C) Holds more instruments
- (D) All of the above

7. What is the best title for this passage?

- (A) Science Benefits from High-tech Storm Chasing
- (B) Meteorologists Rebuild Airplane for Research
- (C) Repurposed Airplane May Improve Weather Forecasts
- (D) Retired Airplane Gets New Military Job

(iii) This past summer, at an undisclosed location in a northeastern metropolis, the U.S. Department of Homeland Security (DHS) was trying to predict the future. There were no psychics or crystal balls, just a battery of sensors designed to determine human intention through the subtlest of changes in heart rate, gaze, and other physiological markers.

Together, the sensors are called Future Attribute Screening Technology, or FAST, a \$20 million federal project that aims to highlight airport passengers whose bodies betray hostile intentions. In theory, FAST has the potential to detect terrorists in the final minutes before they act, but critics warn that the system may have other consequences, such as flagging innocent travelers through false positives while letting some with ill intent sneak by through false negatives. The DHS, for its part, maintains that FAST is merely improving on a far older and more fallible crime predictor: Human judgment.

About 3,000 DHS officers already roam the nation's airports scanning for suspicious behavior and facial expressions in a program called Screening of Passengers by Observational Techniques, or SPOT. The automated FAST system is intended to supplement SPOT by catching signals that are undetectable to the naked eye. FAST is not designed to replace the decision-making of human screeners, but government officials hope it will eventually be able to passively scan airport passengers and single out those worth pulling aside for additional screening.

8. What information does FAST use?

- (A) People's intentions
- (B) Physical markers
- (C) Things people say
- (D) All of the above

9. How is FAST different from SPOT?

- (A) Automated
- (B) Detectable
- (C) Passive
- (D) Subjective

10. What is the best title for this passage?

- (A) Airport Security Goes High-tech
- (B) DHS Works to Secure Airports
- (C) Security Machines Replace Human Staff
- (D) Sensors Tested for Terrorist Detection

(iv) The meter is fixed to the speed of light and a second to the radiation of cesium, but the mass of one kilogram is still not defined by a universal constant. Instead, it's still pegged to an old-fashioned cylinder of platinum iridium alloy kept under lock and key in Sèvres, France.

The method isn't just old-fashioned, it's imprecise, which has literal ramifications across the world when the point is to set the kilogram standard. The cylinder is weighed every few decades against official copies that had the same mass when they were all cast in 1899. When they were last weighed in 1988, however, their masses had drifted 70 micrograms apart.

Last October, the International Bureau of Weights and Measures (IBWM) met to determine a new strategy for defining the kilogram, this time using universal constants. The kilogram is way more complicated than a supermarket scale would have you think.

Delegates from the bureau's then 55 member countries unanimously agreed on a tentative plan to base the kilogram on a fundamental constant of quantum mechanics. This coup is largely the result, after decades of work, of steady strides in two challenging strategies for measuring mass. One approach attempts to pin down the exact electromagnetic force needed to balance the gravitational tug on an object. The other harnesses Cold War-era uranium enrichment technology and a host of experimental techniques to count the number of atoms in extremely round balls of ultrapristine silicon.

11. Which word best describes the status of the kilogram?

- (A) Alloy
- (B) Imprecise
- (C) Pegged
- (D) Universal

12. How often is the official kilogram checked?

- (A) 1899
- (B) 1988
- (C) Every few decades
- (D) Last October

13. How will the IBWM change the way the kilogram's weight is determined?

- (A) Electromagnetic force needed to balance gravitational pull
- (B) Number of atoms in balls of ultrapristine silicon
- (C) Weight of cylinders of platinum iridium alloy
- (D) Not enough information given

(v) Cornell University polled 100 people and found the average American had only two friends in whom they would confide important, personal matters. During times of high stress, friendships have a tendency to fade into the background, while work and family take center stage, battering themselves into the foreground of our lives. Research shows this is actually harmful to your physical, mental and emotional well-being. Here are a few tips on how to build and keep the right tribe to improve your health, happiness and even life expectancy!

- 1) Engage in a Weekly Activity: Join a club or engage in an activity that captures your interest. There are many organizations that meet weekly. Sports enthusiasts can join a recreational sports club. Social dance groups (i.e. salsa, swing, ballroom, etc.) benefit physical and mental health, in addition to providing a platform for meeting new people.
- 2) Volunteer: According to a Duke study, volunteering just 2 hours every week produces significant health benefits, including increased happiness and longevity, an added bonus! Pick a program that ties to your interests. Making friends with similar interests increases the chance of positive interactions, improves the emotional stability of the relationship and increases the likelihood of joint extracurricular activities.
- 3) Get Out With Your Dog: An increasing number of coffee shops and businesses are allowing people to bring their dogs on-site. Animals are great conversation starters and can help break the ice when meeting new people.

14. What is NOT a benefit of dancing?

- (A) Better mental health
- (B) Enhanced physical condition
- (C) Improved coordination
- (D) Meeting people

15. What is a benefit of owning a dog?

- (A) Better mental health
- (B) Enhanced physical condition
- (C) Improved coordination
- (D) Meeting people

16. What is the best title for this passage?

- (A) A Friend in Need is a Friend Indeed
- (B) Benefits of Friendship
- (C) Man's Best Friend Helps Make Friends
- (D) Strategies to Make Friends, Improve Health

(vi) Concerns about the digital divide have started to take on a bit of hysterical edge. Make no mistake, however, there is more than ample reason to be concerned about the degree of access people have to technological resources, which includes equipment, information, and education. As technology becomes increasingly integrated with different areas of our lives, not being connected can definitely present certain challenges with regard to information and services. These separations have largely been aligned with age, education, and household income, but recent data from the Pew Internet & American Life Project report the digital divide is diminishing — thanks in part to the rise of mobile technologies.

While age, education, and household income are the strongest negative predictors for Internet use, access has become less of a limiting factor for non-Internet users. In the last decade, only 6% of this group have cited a lack of access as the main reason they don't go online. Access is now almost ubiquitous since almost every electronic gadget that goes to market needs to be able to connect to the Internet to some degree. From cell phones to MP3 players to game consoles to e-readers and tablets, access to online content has moved beyond the bulky, stationary confines of a desktop computer.

17. What is the strongest negative predictor for Internet use?

- (A) Age
- (B) Education
- (C) Income
- (D) Not enough information given

18. How has Internet access changed?

- (A) Many devices can access.
- (B) Most people have access.
- (C) Not limited to PCs.
- (D) All of the above

19. What is the main idea of this passage?

- (A) Increased PC use has narrowed the digital divide.
- (B) Internet access has become less expensive.
- (C) Many businesses provide free Internet access.
- (D) More Internet-capable devices have increased access.

(vii) The Beijing Star Brand Building Materials West Factory has been demolished, and in its place is a construction pit crawling with dump trucks as cranes tower above. This is the future home of the Taiheyuan Affordable Housing Project, which will have grocery stores, restaurants, and 2,400 apartments for factory hands and other low-income residents.

As growth slows and real estate values slump, Chinese officials are counting on cheap housing to help prop up the economy. The Taiheyuan project is just a tiny piece of a vast national effort to build subsidized housing for the urban poor. Five million affordable apartments are to be built this year, with a goal of reaching 36 million units by the end of 2015. "We will work speedily to improve the system for constructing, allocating, and managing low-income housing," Premier Wen Jiabao said in a speech. Leaders in Beijing, though, may encounter stiff opposition at the local level as cities and towns balk at footing the bill and seek more profitable investments for their money.

Social housing, as it is known in China, is not just meant to give the growing numbers of low-income workers and pensioners affordable places to live. It is also intended to boost the steel, cement, copper, and aluminum industries as prices sag and construction slows in the real estate market.

20. Which word describes the rent of the Taiheyuan apartments?

- (A) Cheap
- (B) Growing
- (C) Low-income
- (D) Slump

21. What is NOT a benefit of the social housing program?

- (A) Affordable housing for retirees
- (B) Cheap apartments for factory workers
- (C) High-paying construction jobs
- (D) Sales of various building materials

22. What is the best title for this passage?

- (A) China's Building Boom Continues
- (B) Chinese Economy Pins Hopes on Affordable Housing
- (C) Local Governments Seek Construction Projects
- (D) Premier Wen Jiabao Announces New Initiative

(viii) In the late 1980s and early 1990s, Joseph Fagan and his colleagues tested 61 infants between 7-12 months of age on their ability to selectively attend to novel pictures. First they showed the infants unseen pictures (e.g., the face of a baby) for only a few seconds. Then they kept pairing old pictures with new pictures, and recorded how long the baby looked at the old pictures. The idea is that smarter infants get bored faster looking at pictures they have already seen. The researchers then followed this group up once they reached the age of 21 and tested their IQ scores and looked at their academic achievement. How well did this simple test in infancy predict later performance?

Strikingly well. The infant attention test given during the first year of life was significantly correlated with both adult IQ and academic achievement. What's more, these correlations were independent of the education levels of their parents. This is rather impressive considering this was only a very brief test lasting only a few minutes given to them when they were just infants. To put these numbers in perspective, these correlations are identical to the correlation found between SAT scores and college GPA.

23. What materials were used to test the infants?

- (A) Novels
- (B) Pictures
- (C) Stories
- (D) Videos

24. How did the smarter babies react to the old pictures?

- (A) Bored
- (B) Interested
- (C) Looked
- (D) Pointed

25. What is the best title for this passage?

- (A) Impressive IQ Research Results
- (B) Improving Infant Intelligence
- (C) Infant Test Predicts Adult IQ
- (D) Researchers Find IQ Gene

〔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) about	(B) at	(C) by	(D) for	(E) of	(F) on
(G) out	(H) over	(I) to	(J) up	(K) within	(L) NO WORD

26. I believe in the precept that we should worry first and enjoy ourselves _____ later.
27. The imported items in the store have been marked _____ 30 percent.
28. I don't want everyone to know, so if you could keep it _____ yourself I'd appreciate it.
29. Susan feels lonely _____ times because no one invites her to go out on the weekends.
30. John worried that he couldn't live up _____ his parents' expectations.
31. This handbook will be _____ great use when you need to create a list of works cited.
32. To earn money, she has to grind _____ magazine stories one after another.
33. If the cost is _____ reasonable bounds, we might purchase ten of them.
34. Perhaps he isn't the best candidate, but let's give him the benefit _____ the doubt.
35. Mary lost her boyfriend and was _____ the verge of a nervous breakdown yesterday.
36. The team doesn't stand _____ a chance of reaching the finals of the tournament.
37. My father used to tell me that it would be wise to save money _____ a rainy day.
38. Kevin continued turning the offer _____ in his mind.
39. His wit and writing style were recognized _____ the award committee.
40. A major corporation has decided to take _____ the IT start-up company.

〔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. As soon as you get off work, please meet me in the corner of Main Street and Prince Avenue.

A B C D

NO ERROR

E

42. A fairly large number of stars explode and then goes into black holes. NO ERROR

A B C D E

43. As time past, she gave up her dream of entering the field of marine biology. NO ERROR

A B C D E

44. It is important to have the ability to respond changes in your social environment. NO ERROR

A B C D E

45. At the beginning, I tempt to keep the wallet I found, but my conscience wouldn't let me.

A B C D

NO ERROR

E

46. New analyses suggests that a new virus may be emerging in northern Vietnam. NO ERROR

A B C D E

47. It took few weeks to complete the project, but I was pleased with how it worked out.

A B C D

NO ERROR

E

48. One of the committee members insisted that exceptions not be made. NO ERROR

A B C D E

49. This new aircraft, many of whose parts are quite innovative, was made in Japan. NO ERROR

A B C D E

50. My family gathers together at a resort in the mountains every year in New Years Day.

A B C D

NO ERROR

E

〔以下余白〕