

科目： 英文科

選擇題：共 50 題，總分 100 分，每題 2 分。

I. Language Teaching and Learning

1. “An approach that sees learning as arising from particular tasks the students do in the classroom and has been increasingly seen as a logical development from communicative language teaching.” Which of the following items represents this approach?
(A) Content-based Approach
(B) Immersion-based Approach
(C) Task-based Approach
(D) Content and Language Integrated Approach
2. “A learning method based on ideas of habit-formation and practice with a view of language as patterns and structures.” Which of the following items represents this method?
(A) Grammar Translation Method
(B) The Direct Method
(C) Community Language Learning Method
(D) Audiolingual Method
3. “The habitual juxtaposition of a particular word with another word or words with a frequency greater than chance.” Which of the following items matches this definition?
(A) collocation (B) compilation (C) coordination (D) configuration
4. “A display of every instance of a specified word or other search term in a corpus, together with a given amount of preceding and following context for each result or ‘hit’.” Which of the following items matches this definition?
(A) frequency (B) cluster (C) wordlist (D) concordance
5. “A collection of written texts, especially the entire works of a particular author or a body of writing on a particular subject.” Which of the following items better matches this definition?
(A) construction (B) consortium (C) corpus (D) conjugation

II Vocabulary & Grammar

6. The group is hoping to _____ public opinion against the proposed law by the government.
(A) jeopardize (B) confiscate (C) galvanize (D) traumatize
7. Steve was frustrated to see a new model of iPhone on the market because he felt it made the one he bought just a month ago seem _____.
(A) discreet (B) absolute (C) prominent (D) obsolete
8. For all the artistic wonders it has preserved, the Holy Mountain is not a museum, and the idea of playing host to sightseers is _____ to the monks.
(A) anarchy (B) anathema (C) anesthesia (D) anatomy
9. The authorities issued proclamations calling on all citizens, on pain of _____, not to rent, lease or sell any property to foreigners.
(A) imprisonment (B) settlement (C) compartment (D) enlightenment
10. Taiwan retailers have seen a rush on toilet paper over the weekend, as word spread of an _____ sharp price rise.
(A) inviolate (B) immanent (C) eminent (D) imminent
11. Simulation has been used in many fields. It can be used to predict population changes over a long period of time and also for charting space-satellite _____ in space exploration.
(A) custodians (B) trajectories (C) hallucination (D) seclusion

12. The social media have revealed some _____ cases of deceitful contract administration by the government of the small island, which angers the law-abiding citizens.
 (A) blatant (B) exhilarated (C) quiescent (D) vigilant
13. The government agency claimed the collection of _____ payments has increased from \$ 8 billion to \$ 11 billion under the new administration.
 (A) culpable (B) belligerent (C) voracious (D) delinquent
14. We are responsible for the disruption of the climate and for the dangerous world that we are going to _____ to our children. Therefore, we should take action to protect the earth.
 (A) exonerate (B) bequeath (C) concoct (D) confiscate
15. The tennis player was known for his after-match _____, which included an incident when he kicked down an advertising board.
 (A) equanimities (B) tantrums (C) detriments (D) cataclysms

III. Cloze Test

A.

The earliest theoretical attempts to describe and explain the universe involved the idea that events and natural phenomena were controlled by spirits ____16____ human emotions who acted in a very humanlike and ____17____ manner. These spirits had to be placated and their favor sought in order to ensure the fertility of the soil and the rotation of seasons. Gradually, however, it must have been noticed that there were certain ____18____: the sun always ____19____ in the east and set in the west, ____20____ a sacrifice had been made to the sun god. Further, the sun, the moon, and the planets followed precise paths across the sky that could be predicted in advance with considerable accuracy.

16. (A) with (B) of (C) for (D) without
 17. (A) benign (B) peaceful (C) lucrative (D) unpredictable
 18. (A) surmises (B) regularities (C) casualties (D) complexities
 19. (A) rises (B) arises (C) rose (D) arose
 20. (A) when (B) despite (C) as long as (D) whether or not

B.

A large study offers more evidence of a link between traumatic brain injuries and dementia later in life, with repeated injuries and severe ones posing the greatest danger. Researchers analyzed 36 years of health records of 2.8 million people in Denmark, where a national health system makes it possible to explore connections in a far-reaching way. ____21____ the risk was small. About 95 percent of people who suffered a brain injury never developed dementia. But a single severe brain injury increased the risk of later dementia by 35 percent ____22____ a person who never had brain trauma. A mild brain injury increased the risk by 17 percent. Each additional brain injury added to the danger.

Scientists know that a blow to the head can damage brain cells, but they don't know exactly ____23____ that might lead to later cognitive problems. This kind of study can't prove a cause-and-effect relationship, but researchers tried to eliminate the possible effects of age, gender, marital status and health, including depression. In a commentary in the journal, Dr. Carol Brayne of University of Cambridge's medical school in England wrote that improvements in care mean more people are surviving brain injuries, making it crucial to understand more about their long-term effects.

21. (A) Therefore (B) Overall (C) Instead (D) On the contrary
 22. (A) connected with (B) referred to (C) compared with (D) thriving on
 23. (A) how (B) what (C) where (D) when

C.

Black holes are hanging out at the center of our galaxy by the thousands, according to scientists who have detected a bunch of them in the neighborhood of a supermassive black hole already known to reside at the heart of the Milky Way. Researchers said data from the NASA's orbiting Chandra X-ray Observatory allowed them to detect a dozen black holes surrounding Sagittarius A, the mammoth black hole at the center of our spiral-shaped galaxy. Black holes, which ____24____ a variety of sizes, are extraordinarily dense entities with gravity so powerful that not even light can escape. Based on these findings, the scientists estimated that up to 10,000 black holes dwell within about 3 light years of Sagittarius A, boasting ____25____ our sun and located 26,000 light years from Earth. The newly detected black holes, all produced by the collapse of massive dying stars, are rare ones that captured and bound themselves to a passing star, forming what is called a stellar binary. Black holes ____26____ are hard to find, but the X-ray signatures of stellar binaries allowed their detection. "Black holes can form farther out from the center of the galaxy. They gravitationally interact with stars, cosmic collisions ____27____, and lose energy," one expert in NASA said. "As they lose energy, they sink to the center of the galaxy, the same way heavy sediment sinks faster than light sediment in water. They get captured by the gravity of the supermassive black hole, catch a star, and voila, you have something we can see X-rays from."

- | | | | |
|--|------------------------------------|-------------------------------|------------------------------|
| 24. (A) grow in | (B) hold on | (C) come in | (D) ward off |
| 25. (A) the mass of four million times | (B) four million times the mass of | (C) four million times big as | (D) four million bigger than |
| 26. (A) in progress | (B) in proportion | (C) in detail | (D) in isolation |
| 27. (A) so to speak | (B) out of stock | (C) by all means | (D) by and large |

IV Discourse Structure

Yes, go ahead and grab that cup of joe, or two, or more. Doing so may improve your health and help you live longer, suggests new research. In a new observational study involving close to 20,000 individuals, people who consumed at least four cups of coffee daily had a 64% lower risk of early death compared to those who never or rarely consumed coffee. ____28____ These findings echo the recent results of another large observational study, which found that coffee drinkers appear to live longer, regardless of whether they consume regular or decaf coffee.

Coffee has also been shown to reduce the risk of many diseases, including type 2 diabetes, liver disease, colorectal cancer, Alzheimer's and skin cancer, too. "Coffee is loaded with antioxidants," said Joe DeRupo, a spokesman for the National Coffee Association. "Many are naturally occurring antioxidants found in the coffee bean, while others are created during the roasting process. ____29____"

While coffee consumption may appear to be healthful for many, others should proceed with caution. Pregnant women, for example, should cautiously limit their intake of caffeinated coffee. "Current evidence suggests that consuming moderate amounts of caffeine up to 200 mg per day, the amount in a 12-ounce cup of coffee, is not associated with increased risks for miscarriage or preterm birth," said Dr. Joseph Wax, chair of the American College of Obstetricians and Gynecologists' Committee on Obstetric Practice. "____30____" Additionally, "there is insufficient evidence to draw any conclusion regarding the effects of caffeine on fetal growth."

____31____ "Caffeine is an aggravator and accelerator of one's heart rate," said Dr. Vince Bufalino, a spokesman for the American Heart Association and senior vice president and senior medical director of Cardiology-AMG, Advocate Health Care, in Naperville, Illinois. "Those with atrial fibrillation or hypertension should limit their caffeine intake. One to two cups daily is probably fine, but if you are sensitive, you should restrict all caffeine."

- (A) If you have any heart conditions, you should also limit your coffee and caffeine consumption.
(B) It's these compounds that science links with positive effects in reducing the risk of several diseases.
(C) The reduction in risk was more significant once people reached the age of 45, suggesting that it may be even more beneficial to consume coffee as we get older.
(D) However, data are contradictory regarding these pregnancy outcomes when women consume more than 200 mg per day of caffeine.

28. _____ 29. _____ 30. _____ 31. _____

V. Reading Comprehension

A.

The UK education system is failing to produce enough students with foreign language skills, an indispensable tool for the study of history. Research published in June this year by the Confederation of British Industry revealed that one in five schools in England had a persistently low take-up of languages, after what the government is describing as “a decade of damaging decline.” This slump has taken its toll on the university system. In the past 15 years more than a third of UK universities stopped offering specialist modern European language degrees, arguing that rigorous marking at A-level had deterred teenagers from studying languages at school.

The same period of time has witnessed the “rise of the machine translators.” In 2006 Google launched its pioneering “Google Translate” service, offering instant on-screen translations between English and Modern Standard Arabic. Today Google offers translation services in and out of more than 70 languages, meeting the needs of the monolingual student generation with ever increasing efficiency and popularity. However, the one-dimensionality of machine translation restricts the response of the on-screen polyglot to a singular, literal definition of each word or phrase. Mistranslations across the widest cultural gulfs abound.

The problem lies in the machine’s inability to consider the cultural context that gives each word its meaning. The French idiom *se taper le cul par terre*, for example, is understood by every Francophone as “to laugh heartily” and has little to do with the literal definition offered by Google – “ass banging on the floor.” The dangers inherent in this acultural approach to foreign source material did not begin with the invention of the robotic interpreter. Some of history’s most ambitious translation projects have failed just as miserably to notice or bridge the cultural gap between what is said and what is meant.

The Christian preoccupation with Muslim belief, which became obsessive during the Crusades, resulted in the first European attempts to make sense of the Quran. Arabic-to-Latin translation services were in no short supply. Centuries of Arab astronomy and mathematics had made Arabic-Latin bilingualism a matter of scientific necessity. Yet, whether out of ignorance or hostility, these early Christian translations were often woefully devoid of cultural understanding. In this most nuanced of subject areas, a singular or literal interpretation is often the most damaging or damning. The first western attempts to make sense of this notoriously complex source, therefore, offer some valuable lessons to the upcoming Google Translate generation.

32. How many UK universities stopped offering degrees in French, German, Italian and Spanish since the turn of the century?
(A) less than 25% (B) about 35% (C) more than 45% (D) Not mentioned.
33. What is the reason for the decline in numbers of UK students studying foreign languages?
(A) The rise of machine translation
(B) Difficulty in getting good grades
(C) Not as many degrees available
(D) Government policy
34. What causes machine mistranslation?
(A) The appearance of foreign idioms
(B) Ignorance or prejudice of Google Translators
(C) Religious conflict
(D) Cultural gap
35. Which is true about Arabic-to-Latin translation services?
(A) They first began with the translations of Quran.
(B) There were few Arabic-to-Latin translation services in the past.
(C) They were necessary in medieval Europe due to the development of Arab science.
(D) They were made available by Google Translate in 2006.

36. What offers good lessons to Google Translate generation?

- (A) The first western translations of Quran
- (B) Decreasing number of students studying languages
- (C) The Crusades
- (D) The acultural approach to foreign source material invented by the robotic interpreter.

B.

In 2017, Dubai—one of seven emirates that make up the United Arab Emirates—vowed that within three years it would have the world's first government powered by blockchain, the technology underlying cryptocurrencies like Bitcoin. And at the World Government Summit in Dubai in February, Sheik Hamdan bin Mohammed bin Rashid al-Maktoum, Dubai's crown prince, launched 26 government-led projects under the 10x initiative, which aims to make its eponymous capital city the world's most innovative within a decade.

The strategy reflects the emirate's desire for soft power as it seeks to turn itself into a hub for global innovation. But it's also a test of whether a benign autocracy like Dubai can usher in the next wave of technology—AI—by decree, and if so, what that means for more open, democratic countries that are also trying to incubate technologies intended to reshape the world.

It can feel as if Dubai is constructing the set of a science-fiction movie. Based on the prototypes it has unveiled in recent months, autonomous robocops may someday patrol the Dubai Mall as flying taxis whisk passengers above the gridlock-prone Sheikh Zayed Road. Self-driving buslike pods might drop commuters directly at their doorsteps. At the main airport, a system of hidden cameras disguised as a virtual aquarium tunnel may in the near future scan passengers' faces and irises as they gawk at digital fish.

These aren't just futuristic follies intended to look good on press releases. There's real money behind such ideas. In 2016, Sheik Mohammed put up \$270 million for the Dubai-based Future Endowment Fund, which invests in innovation. Its Accelerators program accepts startups on the basis of their proposed solutions to government concerns. The Dubai police department, for instance, asked Accelerator applicants to "utilize artificial intelligence ... to provide statistics that may support the decision-making process or allow for faster response to emergency situations."

A leadership reshuffle in October reinforced the government's commitment as Sheik Mohammed appointed 27-year-old Omar bin Sultan al-Olama as the UAE's Minister of Artificial Intelligence, creating what is thought to be the world's first such Cabinet position. "With AI, we cannot afford to be reactive. We must be proactive," al-Olama says. "That's the goal of government: to be proactive and do something about it today."

The push to attract tech startups and investors to Dubai is consistent with Sheik Mohammed's reorienting of the emirate's economy away from dependence on oil revenue after taking over in 2006. The early years of that effort resulted in what Dubai is best known for today: fantastical skyscrapers, ultra-luxury tourist accommodations and global trade. It seems to have paid off; while the price of oil has dropped 37% since 2013, the Dubai stock market is up 155%, according to Bloomberg data from January. Oil once made up about 50% of Dubai's gross domestic product. Now it accounts for less than 1% of it.

The initial stage changed the face of Dubai as vast infrastructure and commercial projects were built. Now the next stage aims to create an urban environment where flying cabs and robot cops are everyday sights. If the government intends to construct a thriving playpen for technological guinea pigs, the people who live there are—by one measure—receptive to it. An Accenture study last year found that three-fourths of UAE residents are ready to adopt AI-powered devices and services, compared with a world average of 62%.

It's not as if they have much choice. The UAE's leadership may be benevolent, but it is authoritarian. The state ranks 147th out of 167 countries on the Economist Intelligence Unit's Democracy Index. Political parties are outlawed, and the rulers' word is absolute. And democracy matters when it comes to technological advancement, argues Loren Graham, an MIT professor emeritus in the history of science. Innovation has historically flourished in open, democratic societies not least because they have legal systems that are not subject to political whims, he says. Disruptive technology can ignite courtroom squabbles, and more repressive societies can't always guarantee a level legal playing field—plus there's the risk that a sitting ruler could see an entrepreneur with enough success and wealth as "an implicit, if not explicit, challenge," Graham says.

Officials in Dubai brush off any suggestion that their type of government has any effect on how the gadgets and AI tested on its roadways and in its airspace are developed and deployed. Dubai is investing in technology that serves the people, says al-Olama. "His Highness Sheik Mohammed says the main goal of government is happiness," he says. "He made my mandate that, yes, we need to be AI-ready, but in a way that makes people happier."

37. Which statement best describes Dubai's position in innovation?
- (A) Dubai is the most open city in the world.
 - (B) Dubai is the most innovative city in the world.
 - (C) Dubai has the world's first government powered by blockchain.
 - (D) Dubai's Ministry of Artificial Intelligence is the first of its kind in the world.
38. Which description is true about Dubai's investment in technological development?
- (A) Dubai turns to the development of soft power in order to become a more democratic country.
 - (B) Dubai's current strategy reflects the emirate's desire to inaugurate the next wave of technology.
 - (C) Dubai produces a science-fiction movie to feature its technological development.
 - (D) The aim of Dubai's investment in innovation is to issue a new kind of cryptocurrency that can dominate the world economy.
39. What is the priority of Dubai's current technological strategy?
- (A) Cryptocurrency
 - (B) Public transportation
 - (C) Statistic information system
 - (D) Artificial intelligence
40. Which of the following is true?
- (A) The desire to be less dependent on oil revenue fueled Dubai's urban development.
 - (B) Dubai's next stage is to advance domestic infrastructure and commercial projects.
 - (C) The Dubai stock market is declining due to the drop in oil price.
 - (D) People in Dubai are resistant to the new technological trends.
41. Which of the following is not on Loren Graham's list of risks regarding technological advancement in authoritarian countries?
- (A) Inadequate currency in circulation
 - (B) Legal system influenced by political forces
 - (C) Control over public opinions
 - (D) Ruler's attitude toward the success of a wealthy entrepreneur

C.

The origins of nest-building remain obscure, but current observation of nest-building activities provide evidence of their evolution. Clues to this evolutionary process can be found in the activities of play and in the behavior and movements of birds during mating, such as incessant pulling at strips of vegetation or scraping of the soil. During the early days of the reproductive cycle, the birds seem only to play with the building materials. In preparation for mating, they engage in activities that resemble nest-building, and continue these activities throughout and even after the mating cycle. Effective attempts at construction occur only after mating.

Although nest-building is an instinctive ability, there is considerable adaptability in both site selection and use of materials, especially with those species which build quite elaborate constructions. Furthermore, some element of learning is often evident since younger birds do not build as well as their practiced elders. Young ravens, for example, first attempt to build with sticks of quite unsuitable size, while a jackdaw's first nest includes virtually any movable object. The novelist John Steinbeck recorded the contents of a young osprey nest built in his garden, which included three shirts, a bath towel, and one arrow.

Birds also display remarkable behavior in collecting building materials. Crows have been seen to tear off stout green twigs, and sparrow-hawks will dive purposefully onto a branch until it snaps and then hang upside down to break it off. Golden eagles, over generations of work, construct enormous nests. One of these, examined after it had been dislodged by high winds, weighed almost two tons and included foundation branches almost two meters long. The carrying capacity of the eagles, however, is only relative to their size and most birds are able to carry an extra load of just over twenty percent of their body weight.

42. According to the passage, which of the following activities is characteristic of the early part of the reproductive cycle of birds?
- (A) Selecting a mate
 - (B) Collecting nest-building materials
 - (C) Playing with nest-building materials
 - (D) Building a nest

43. The novelist John Steinbeck is mentioned in this passage because he _____.
(A) conducted a scientific study on the behavior of ospreys
(B) was the first to describe where ospreys built their nests
(C) described the materials ospreys can use to build their nests
(D) compared the size of osprey nests with the nests of other species
44. Which of the following birds are mentioned as those that build nests that include specific color objects?
(A) Ravens (B) Ospreys (C) Crows (D) Sparrow-hawks
45. According to the passage, when gathering materials to build their nests, sparrow-hawks do which of the following?
(A) Hang upside down
(B) Select only green twigs
(C) Use objects blowing in the wind
(D) Collect more branches than necessary
46. The author mentions twenty percent in the final paragraph to indicate that _____.
(A) eagles are twenty percent bigger than most birds
(B) twenty percent of all nests include foundation branches
(C) the nests of eagles are twenty percent of larger than those of other birds
(D) birds can carry twenty percent of their own weight

D.

Scientists have cleared a major barrier to transplanting organs from pigs into humans after removing threatening viruses from the animals' DNA. The new research opens up the possibility of breeding animals to harvest their organs to meet the demand for new tissue. Some challenges, including major ethical objections still remain, but experts said the breakthrough is a significant step towards pig-to-man transplants, also known as xenotransplantation. The shortage of organs for transplants is one of the biggest challenges to modern medicine, and the current supply of tissue meets only a tiny amount of the total demand, the authors said. But the ability to breed pigs specifically for that purpose would allow that to be easily addressed, since they have similar organs to ours and can be bred in large numbers.

Until now, the use of pig organs in humans has been held back in large part by fears about retroviruses that are found in pigs and could prove fatal to humans, if they made their way into the body, and could then cause an epidemic as they spread from human to human. Porcine endogenous retroviruses, known as Pervs, are a permanent part of the gene and so appeared to be impossible to remove. But the researchers have now successfully removed those Pervs from the pig genome, using the CRISPR-Cas9 gene editing technique that allowed them to produce Perv-free, living pigs. That, _____, removes one of the biggest barriers to organ transplantation from pigs to man.

"This represents a significant step forward towards the possibility of making xenotransplantation a reality," said Darren Griffin, a professor of genetics at the University of Kent. "The chance of transmitting PERV from the pig organ to the human cells was a significant barrier and the study shows yet another application of the CRISPR-Cas9 system. By comprehensively demonstrating that PERV is the problem that we suspected that it may be, then providing a solution, the authors present a very elegant study. However, there are so many variables including ethical issues to resolve before xenotransplantation can take place."

Those ethical worries are significant, and include a consideration of the harm and benefit brought to the person receiving the heart. Though scientists have eliminated the biggest barrier to safety in putting a pig's heart into a human, there remain risks – and those risks would have to be balanced by ethical committees. It would also be difficult to ensure that people could give proper consent to the procedure, which could be used in the most dire of circumstances.

But those objections may fade if it becomes clear that the transplants will be useful. When human organ transplantation was beginning, in the 1960s and 1970s, many opposed the idea – but those objections were put aside when it became clear how effectively transplants could keep people alive.

47. Which of the following statements about xenotransplantation is true?
- (A) Only when the organs of pigs and humans become mutually transplantable can it become a reality.
 - (B) One of the biggest barriers of the research on xenotransplantation is the shortage of animal organs.
 - (C) The research on xenotransplantation is to meet the demand for new tissues in medical treatments.
 - (D) Scientists are now developing the way to remove threatening viruses from human bodies undergoing xenotransplantation.
48. How do scientists solve the problem of retroviruses found in pigs?
- (A) They develop antibiotics to remove the retroviruses from the organs.
 - (B) They administer vaccines to patients undergoing organ transplantation.
 - (C) They improve the environment of breeding farms to lower the rate of viral infections.
 - (D) They use gene editing technique to produce virus-free living pigs.
49. Which of the following may best fill in the blank in paragraph 2?
- (A) in turn (B) by contrast (C) however (D) alternatively
50. How does the author think about the future of xenotransplantation?
- (A) The biggest barriers still remain.
 - (B) The objections may fade when people realize how beneficial it is to the extension of human lives.
 - (C) The objections may fade as scientists develop less harmful ways to take organs from animals.
 - (D) The ethical worries have overshadowed the research development.