

103 年度全國科學班試辦聯合學科資格考英文科試題卷

第一部分：選擇題(共 72 分)

一、文意字彙 15% (共 15 題，每題 1 分)

- Sandy, though on a diet, couldn't _____ the temptation of ice cream and ate two big scoops.
(A) acquaint (B) conclude (C) wander (D) resist
- The court found the man _____ of murder and hence he was released from prison.
(A) involved (B) innocent (C) inclusive (D) informed
- Appendectomy, compared with other major operations, is _____ easy and poses a lower risk.
(A) partially (B) mutually (C) relatively (D) truthfully
- Be careful not to buy expensive items on impulse, or you will regret the _____.
(A) purchase (B) announcement (C) achievement (D) exchange
- Mr. Smith was offered the position of finance manager, but he _____, saying that he preferred to stay in his current job.
(A) threatened (B) declined (C) replaced (D) consented
- Good communication skills are _____ for applicants for the post of the sales manager.
(A) vulnerable (B) overwhelming (C) indispensable (D) permanent
- IKEA sells furniture that is easy to _____. People even have fun putting the pieces together.
(A) recite (B) assemble (C) model (D) spear
- The president had vowed to achieve certain _____ before the end of his term, but it turned out that none of them was met.
(A) objectives (B) burglaries (C) approaches (D) admonitions
- Beating Apple in sales is a great _____ for Samsung.
(A) asset (B) feature (C) possession (D) triumph
- About one-third of the residents in this village are said to have _____ AIDS, and they're in desperate need of medical aid.
(A) infected (B) combated (C) eliminated (D) contracted
- Video conference technology enables world leaders to conduct diplomatic negotiations _____ without having to leave their countries.
(A) unexpectedly (B) simultaneously (C) pessimistically (D) enthusiastically
- Three days after the kitchen fire, there was still a _____ smell in the house.
(A) dominant (B) lingering (C) successive (D) domestic
- When the police came, the protesters put up a strong _____ by locking arms and chanting, "Of the people, for the people, by the people."
(A) tendency (B) objection (C) resistance (D) division
- Not only was the arena filled to _____, but there were thousands of enthusiastic fans queuing outside, hoping to somehow squeeze in.
(A) alternative (B) capacity (C) sprout (D) determinant
- Many parents try to _____ an interest in music in their young kids, hoping to shape them into the next Mozart.
(A) ponder (B) signify (C) compile (D) foster

二、綜合測驗 15% (共 15 題，每題 1 分)

[A] Our names are an important part of our identity—a way to distinguish ourselves from everyone else. 16, names are so much more than what people call us. It can be interesting as well as informative to learn about the family names that we obtain when each of us comes into the world.

According to genealogists, many of our ancestors didn't even have surnames long ago. Surnames evolved over time. The first family names 17 in a number of ways. More often than not, a man was named after the place in which he lived. For example, in ancient China, many people took their surnames from the places they lived in. 18 Chinese people, people in England could be named after some familiar landmarks of the places they lived in. The surnames Church, Lake, or Hill are good examples.

Family names also came from a person's 19. For example, a person who looked after sheep, a sheep-herd, might take

the name Shepherd. And the surname Smith originally meant “cut or strike.” Years ago, “Smiths” were people who made things out of metal.

Tracing the origin of our surnames can be much fun. Learning about them also provides 20 to a better understanding of our culture and history.

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| 16. (A) Hence | (B) Likewise | (C) Namely | (D) However |
| 17. (A) put out | (B) came about | (C) got over | (D) made up |
| 18. (A) Like | (B) As for | (C) Despite | (D) But for |
| 19. (A) intonation | (B) suspicion | (C) civilization | (D) occupation |
| 20. (A) margin | (B) access | (C) obstacle | (D) retreat |

[B] If you stroll down the aisles of any toy store, you are bound to find several entertaining toys and games. But 21 unlocking a person’s creativity and imagination, nothing beats LEGO bricks. For over 75 years, children and adults have been interlinking these colorful blocks and various parts together to build some truly amazing things. It had all begun in 1932, 22 the LEGO Group was founded and started manufacturing toys. At first, the LEGO pieces were crafted exclusively from wood. However, after the company’s warehouse burned down in 1950, plastic ones began to be used 23. Over the years, LEGO sets were continually improved, 24 the company made the parts brighter and more colorful and increased their durability. To date, billions of blocks have been produced and thousands of theme sets are available—each designed around fun, interesting topics, such as space exploration, robots, and pirates. For even more LEGO fun, fans can head to one of the four Legoland amusement parks and go on rides 25 with LEGO bricks! With so many choices available, you’ll surely never run out of ways to play with LEGO sets.

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| 21. (A) on the basis of | (B) depending on | (C) when it comes to | (D) as a result of |
| 22. (A) which | (B) that | (C) then | (D) when |
| 23. (A) instead | (B) yet | (C) after all | (D) by contrast |
| 24. (A) though | (B) so | (C) as | (D) while |
| 25. (A) constructing | (B) constructed | (C) constructive | (D) to construct |

[C] For many people, there are few things more nerve-racking than a smart phone or tablet that’s been accidentally soaked. Now, there is a product called Liquipel, which can make your phone water-resistant. Liquipel is a nano-coating used to protect electronic devices from damage due to 26 to liquids. Devices are placed in a machine that creates a vacuum and then injects a super-hydrophobic gas, thus creating a microscopic gap of air between the object and liquid. Nanotechnology allows Liquipel to penetrate and coat the whole device as a water repellent. The gas particles 27 all internal and external components of the device on the molecular level. Because the Liquipel coating is 1000 times 28 a human hair, it does not interfere with the performance, sound quality, or function of your device in any way. 29, you are able to charge your device and use your headphones or speakers just as you did before. However, it doesn’t magically turn your phone into a submarine capable of long-term trips undersea. You cannot submerge your device in liquid for a long period even after having Liquipel 30. Instead, the coating is intended to protect the phone from brief encounters with water. That’s why it’s called water resistant, not waterproof.

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|-------------------------|--------------------|-----------------------|-------------------|
| 26. (A) transfusion | (B) resemblance | (C) exposure | (D) access |
| 27. (A) bond to | (B) give way to | (C) account for | (D) make up |
| 28. (A) long enough for | (B) as long as | (C) the thinness | (D) thinner than |
| 29. (A) By contrast | (B) In other words | (C) On the other hand | (D) Likewise |
| 30. (A) to apply | (B) applied | (C) apply | (D) being applied |

三、文意選填 10% (共 10 題，每題 1 分)

Whether texting is bringing about the downfall of the written word remains a subject for debate. Some linguists believe that people have always spoken differently from how they write, and texting is actually talking with 31. From a historical perspective, writing was only invented 5,500 years ago, whereas language probably 32 back to at least 80,000 years ago.

The first writing was based on the way people talk, with short sentences. However, while talk is largely 33 and rapid, writing is deliberate and slow. 34, writers took advantage of this and started crafting long complex sentences. No one talks like that casually. Besides, in the old days, people didn't much write like talking because there was no mechanism to reproduce the speed of conversation. But texting and instant messaging do—and a revolution has begun.

Texting 35 the mechanics of writing, but by its nature, it is a new form of talking, with an extra premium on concision and little 36 in capitalization or punctuation. Texting is developing its own kind of grammar and conventions. Take *LOL* for example. In the text exchange,

“Where have you been?”

“*LOL at the library studying for two hours.*”

LOL 37 basic empathy between texters, creating a sense of equality. Instead of having a literal meaning “laughing out loud”, it conveys an attitude—just like the -ed ending signifies past tense rather than “meaning” anything. *LOL*, of all things, is grammar.

Despite the belief that people texting away on their smartphones are fluently using a code 38 from the one they use in actual writing, several new studies are showing that students who text on a frequent basis perform 39 on grammar tests. Texting too much can cause students to think this shorthand is a proper way to write. 40, texting is not actually a different language. It therefore works its way into the classroom, homework, and all facets of language.

What do you say?

- (A) interest (B) separate (C) signals (D) dates (E) worse
(F) fingers (G) After all (H) Over time (I) subconscious (J) involves

四、閱讀測驗 32% (共 16 題，每題 2 分)

[A] A new concept car is enhancing driving experience by connecting physically and emotionally with the driver. Known as the Fun Vehicle 2, FV2 is an embodiment of the term *fun to drive*. The unique driving experience and its associated technology would look perfectly at home on the set of a futuristic Hollywood film.

The first thing you notice is the driving position. With no steering wheel to grab hold of, control and operation is carried out by the lean of the driver's body, intuitively moving the FV2 forward and back, left and right. The FV2 seats just one person, and its hood can open and close like a clamshell. This design allows the driver to operate the car either standing or sitting.

This electric vehicle may be more in tune with your emotions than your best friend is. It uses voice and face recognition to **gauge** the driver's mood. Once it understands your mood, it may make suggestions like, “Are you feeling tired? Would you like to stop for a coffee?” The information it gathers is recorded and used to keep the driver and others safe. For example, if a driver is upset, the hood will change colors to tell people the vehicle may be a threat to their safety.

Although this car seems like something out of a sci-fi movie, it may soon become a common sight on the roads.

41. What is the passage mainly about?

- (A) The history of using a concept car in a sci-fi movie.
(B) The different designs of future electric cars.
(C) The development of voice and face recognition.
(D) The introduction of a futuristic concept car.

42. What does the word “**gauge**” in the third paragraph mean?

- (A) To have an influence on.
(B) To make a judgment about.
(C) To take control of.
(D) To lift up.

43. Which of the following statements is true about FV2?

- (A) It runs on solar power and does not need any gasoline.
(B) It only has two seats and is not a very heavy vehicle.
(C) It lacks a steering wheel and is operated by a driver's movement.
(D) A driver can make a turn in the FV2 by using the voice command.

44. Which of the following can be concluded from the passage?
- (A) FV2 will take the experience of driving to a higher level.
 - (B) On knowing a driver is tired, FV2 will automatically shut off.
 - (C) Being aware that a driver is angry, FV2 will restart the engine immediately.
 - (D) FV2 will be a common sight in Hollywood sci-fi movies in the future.

[B] Stephen Hawking was born on 8 January, 1942 (300 years after the death of Galileo) in Oxford, England. He is a well-known theoretical physicist and is severely disabled by amyotrophic lateral sclerosis (ALS). This condition is commonly known in the United States as Lou Gehrig's Disease. The illness has worsened over the years and slowly destroyed his nerves and muscles. He is now almost completely paralyzed. Because of the disease, Dr. Hawking is unable to speak, walk, or even write. However, the disease doesn't stop him from pursuing his goals. In fact, Dr. Hawking has dedicated much of his time to probing the space-time described by general relativity and the singularities where it breaks down. Also, he has served as professor in several prestigious universities and colleges in England.

Dr. Hawking is noted for his contributions to the fields of cosmology and quantum gravity, especially in the context of black holes, as well as his popular works in which he discusses his own theories and cosmology in general. His contribution to physics is amazingly great. Despite the fact that he cannot write, with a specially designed switch which is connected to his computer, he has completed and published many books. These include the runaway popular science bestseller *A Brief History of Time*, which stayed on the British *Sunday Times* bestseller list for a record-breaking 237 weeks. So far, Dr. Hawking has had twelve honorary degrees and has been the recipient of many awards, medals and prizes for his excellent research in physics.

45. What is the main purpose of this passage?
- (A) To introduce the mysterious and deadly disease ALS.
 - (B) To recommend a popular science bestseller *A Brief History of Time*.
 - (C) To inform readers of a great physicist and his achievements.
 - (D) To demonstrate an important physics theory.
46. According to this passage, which is NOT true about ALS?
- (A) It stands for amyotrophic lateral sclerosis.
 - (B) Americans usually call it Lou Gehrig's Disease.
 - (C) It may cause the loss of control of all the body muscles.
 - (D) A person who suffers from it will lose his ability to think.
47. Stephen Hawking _____.
- (A) is a world-famous British physician and professor
 - (B) graduated from 12 colleges and has received 12 honorary degrees
 - (C) depends on a specially designed device to express his thoughts
 - (D) is paralyzed from the neck down and confined to his wheelchair
48. Which of the following statements is true?
- (A) Stephen Hawking is noted for his contributions to the fields of psychology.
 - (B) ALS leaves Dr. Hawking paralyzed but doesn't stop him from living his life to the fullest.
 - (C) *A Brief History of Time* is a popular historical novel written by Dr. Hawking.
 - (D) *A Brief History of Time* stayed on the British *Sunday Times* bestseller list for more than 5 years.

[C] The term *French paradox* refers to the observation that although the French eat similar amounts of high-fat foods, exercise less, and smoke more than Americans, they appear to have a markedly lower mortality rate from heart disease. Medical experts generally agree that a low-fat diet, regular exercise, and refraining from smoking would minimize the risk of heart attacks, **which** makes this paradox difficult to understand. Studies suggest that one of the reasons the French have a lower rate of heart disease may have to do with their regular consumption of red wine.

The specific mechanism by which the French paradox operates, however, has not yet been identified. Some research suggests that antioxidants called *flavonoids*, natural chemical compounds found in red wine, may confer important health benefits to the heart and blood vessels. Red grapes are one of the richest sources of flavonoids, which may make red wine more heart-healthy than white wine, beer, or other spirits. Other research suggests that pigments in red wine called *polyphenols* are responsible for explaining the French paradox. Polyphenols, found in red grape skins, are believed to act as antioxidants, control blood pressure, and reduce blood clots. Some research indicates that red grape juice is markedly less potent than wine in conferring health benefits. Researchers suggest that something in the wine-making process changes the polyphenols' properties.

Not all scientists believe in the French paradox. Some believe that it is a health myth caused by errors in health-data reporting on the incidence of heart disease in France. Also, some scientists argue that there is no scientific consensus over the protective effect of any alcoholic beverage on heart disease.

49. What does “which” on line 5 refer to?

- (A) The risk of heart attacks.
- (B) French paradox.
- (C) The lifestyle of having a low-fat diet, exercising and staying away from smoking.
- (D) The fact that medical experts generally agree that a low-fat diet, exercise, and staying away from smoking would minimize the risk of heart attacks.

50. What is the major contributor to French paradox discussed in this passage?

- (A) Exercise.
- (B) Cigarettes.
- (C) Red wine.
- (D) Grape juice.

51. Which of the following is closest in meaning to the term “paradox”?

- (A) Something that appears to be false but turns out to be true.
- (B) Something that should be fixed or dealt with.
- (C) Something that is followed or imitated by others.
- (D) Something that happens regularly in a place.

52. Which of the following statements is NOT true, according to the passage?

- (A) French people do not work out as much and often as Americans.
- (B) A higher percentage of Americans die of heart diseases than the French.
- (C) Not all experts agree on the factors that cause French paradox.
- (D) Beer and other spirits are believed to provide potent protection for the heart.

[D] A medical education software company has partnered with a 3D technology provider to create 3D images that give medical students the virtual sense of operating on a patient. Rich Lineback, president of Cyber-Anatomy, told the Press Citizen that the company will use zSpace technology to produce interactive 3D models of human anatomy diagrams contained in Cyber-Anatomy software. In July 2014, these models will initially be provided to medical students at the Touro College of Osteopathic Medicine in New York City.

The idea came to life when Dr. David Lenihan, Dean of Preclinical Medicine and associate professor of neuro-anatomy and neuroscience at Touro, was watching a Discovery Channel documentary about torture and saw a 3D display being used to analyze an injury. **Intrigued** by the idea, he researched medical anatomy program developers and ended up contacting Cyber-Anatomy and zSpace.

A full 3D display could improve medical students' training, he told the Press Citizen. "Dead bodies are not like how the human anatomy really is in the body—the organs shift and settle," he said. "I can actually show students a much better representation of where the structures are by using a holographic image." Lenihan also said that this technology could revolutionize how anatomy is taught, and that it is an opportunity to advance medical education to help improve healthcare.

53. What is this passage mainly about?
- (A) The advertisement of cyber surgery.
 - (B) The application of holography in virtual anatomy.
 - (C) The revolution of holography in online curriculum.
 - (D) The association between Cyber-Anatomy and zSpace.
54. According to this passage, which of the following is **NOT** a benefit of cyber surgery software?
- (A) Medical students will experience the virtual sense of operating on a patient.
 - (B) This software will benefit both medical students and patients.
 - (C) The full 3-D display of human body will help shift and settle organs.
 - (D) This software will help advance the study of how human organs are arranged.
55. Why did Dr. David Lenihan contact Cyber-Anatomy and zSpace?
- (A) To analyze the potential causes of injuries in victims.
 - (B) To inquire if he could film a documentary about medical anatomy programs.
 - (C) To offer a new course on medical anatomy at Touro.
 - (D) To explore the possibility of integrating the two technologies.
56. Which of the following words is similar to "**intrigued**" in meaning?
- (A) Fascinated.
 - (B) Astonished.
 - (C) Delighted.
 - (D) Frightened.

第二部分：非選題（共 28 分）

五、翻譯（共 8 分，每題 4 分，錯一處扣 0.5 分，請根據提示字作答）

1. 儘管被多次警告，這些青少年仍拿石頭丟經過的車子。(Despite...)
2. 一直到數名警察到場，他們才停止這麼做。

六、短文寫作（共 20 分）

你對於所居住的這個城市有什麼滿意與不滿意之處？請寫一封信給市長，先分享你認為這個城市美好之處，然後提出建言以改善這個城市的缺點。請以 Dear Mayor 開始你的信，信末署名須為 John 或 Jenny。

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