

全国 2016 年 10 月高等教育自学考试

英语科技文选试题

课程代码:00836

请考生按规定用笔将所有试题的答案涂、写在答题纸上。

选择题部分

注意事项:

1. 答题前,考生务必将自己的考试课程名称、姓名、准考证号用黑色字迹的签字笔或钢笔填写在答题纸规定的位置上。
2. 每小题选出答案后,用 2B 铅笔把答题纸上对应题目的答案标号涂黑。如需改动,用橡皮擦干净后,再选涂其他答案标号。不能答在试题卷上。

I. Directions: Read through the following passages. Choose the best answer and blacken the corresponding letter A, B, C or D on the ANSWER SHEET. (20%)

(A)

As the Ebola outbreak simmers on in West Africa, researchers have shown the utility of a rapid test for the virus that could help contain another epidemic. The ReEBOV test, which needs only a fingerprick of blood and gives results in about 15 minutes, was granted Emergency Use Authorization by WHO in February, based on laboratory assessments.

Throughout the recent Ebola outbreak, clinicians have relied on PCR-based tests to diagnose cases of the viral disease. The tests require a full vial of blood to be drawn from a patient's arm and transported to the nearest laboratory facility—which can take hours or days. In the lab, over the course of several hours, a PCR machine amplifies the genetic material in the blood until there is a sufficient amount to detect. In all, the process can take a few days—during which time a patient suspected of carrying Ebola must be quarantined or housed in holding units where they are at risk of infection.

The newer ReEBOV test, currently manufactured by Colorado-based Corgenix, is like the fingerprick tests used by diabetics to test their blood sugar. Within a few minutes after a drop of blood is placed on a paper strip, a line appears signaling a positive or negative result. Unlike PCR-based tests, which look for the presence of the virus's genetic material, the ReEBOV test detects antigens: proteins made by the body in response to an Ebola infection.

Over a 2-week span in February, researchers used both the ReEBOV test and a classic PCR-based test on 106 patients who showed up at two clinics in Sierra Leone with suspected Ebola symptoms. In addition, the scientists compared the tests' performances on 284 previously collected blood samples. The ReEBOV antigen test detected every case of Ebola that was diagnosed using the slower PCR-based test, giving it what the researchers believed was a sensitivity of 100%. The test also had a handful of false positives, however, making its specificity 92%.

"We were surprised by the performance," says Nira Pollock, an infectious disease doctor at Boston Children's Hospital and an author of the new study. "It was more sensitive than I expected for a rapid antigen diagnostic test."

But Pollock admits the numbers may be misleading. After the collection of the initial data, the scientists used a second PCR-based test to look at some of the samples. The PCR test they'd been using as a "gold standard," it turned out, wasn't itself 100% sensitive, not only highlighting the discrepancy between different PCR-based tests but also casting doubts on their new results. In retrospect, "we think we probably overestimated the sensitivity and underestimated the specificity," Pollock says. More data are needed to illuminate these numbers, she adds.

A fast, cheap, transportable Ebola test can't come too soon, researchers say. "This test can be done in very austere environments, even off the back of a truck; it doesn't require electricity or a sophisticated lab or an experienced technician," points out Robert Garry, a virologist at Tulane University in New Orleans, Louisiana, who helped develop the technology the test is based on but was not involved in the new trial.

1. What is the passage mainly concerned with?
 - A. The ReEBOV test made in West Africa
 - B. The PCR-based test
 - C. The fingerprick test
 - D. How to diagnose the Ebola
2. According to the passage, which of the following is NOT true of PCR-based tests?
 - A. They must be done in the laboratory.
 - B. They take more time than the ReEBOV test does.
 - C. They use the blood drawn from a patient's arm.
 - D. They can discover proteins made by the body as a physical reaction to an Ebola infection.
3. The word "quarantined" in line 6, paragraph 2, can be replaced by _____.
 - A. promised
 - B. protected
 - C. kept separate from others
 - D. kept to themselves
4. According to the passage, all of the following are true about the ReEBOV test EXCEPT _____.
 - A. it could help to control a widespread outbreak of Ebola
 - B. it looks for the presence of the virus's genetic material
 - C. it is a rapid antigen diagnostic test
 - D. it should be used as soon as possible

5. It can be inferred from the passage that_____.

- A. the ReEBOV test is not completely accurate
- B. the ReEBOV test has been given permission to be used at all times
- C. an Ebola patient must be put in quarantine for a few days before treatment
- D. both the ReEBOV test and the PCR-based test collect the same data

(B)

The email that arrived in Richard Young's inbox in October 2013 was polite but firm. The writer was part of a group of researchers who “are conducting a study to investigate the reproducibility of recent research findings in cancer biology.” A paper that Young had published in *Cell* in 2012 on how a protein called c-Myc spurs tumor growth was among 50 high-impact papers chosen for scrutiny by the Reproducibility Project: Cancer Biology. The group might need help with materials and advice on experimental design, the message said. Young wrote back that a European lab had already published a replication of his study. No matter, the project's representative replied, they still wanted to repeat it. But they needed more information about the protocol. After weeks of emails back and forth and scrambling by graduate students and postdocs to spell out procedures in intricate detail, the group clarified that they did not want to replicate the 30 or so experiments in the *Cell* paper, but just four described in a single key figure.

This past January, the cancer reproducibility project published its protocol for replicating the experiments, and the waiting began for Young to see whether his work will hold up in their hands. He says that if the project does match his results, it will be unsurprising—the paper's findings have already been reproduced. If it doesn't, a lack of expertise in the replicating lab may be responsible. Either way, the project seems a waste of time, Young says. “I am a huge fan of reproducibility. But this mechanism is not the way to test it.”

That is a typical reaction from investigators whose work is being scrutinized by the cancer reproducibility project, an ambitious, open-science effort to test whether key findings in *Science*, *Nature*, *Cell*, and other top journals can be reproduced by independent labs. Almost every scientist targeted by the project who spoke with *Science* agrees that studies in cancer biology, as in many other fields, too often turn out to be irreproducible, for reasons such as problematic reagents and the fickleness of biological systems. But few feel comfortable with this particular effort, which plans to announce its findings in coming months. Their reactions range from annoyance to anxiety to outrage. Cancer geneticist Todd Golub of the Broad Institute in Cambridge has a paper on the group's list. But he is “concerned about a single group using scientists without deep expertise to reproduce decades of complicated, nuanced experiments.”

Golub and others worry that if the cancer reproducibility project announces that many of the 50 studies failed its test, individual reputations will be damaged and public support for biomedical research undermined. “I really hope that these people are aware of how much responsibility they have,” says cancer biologist Lars Zender of the University of Tübingen in Germany.

Timothy Errington, the reproducibility effort's manager at the nonprofit Center for Open Science in Charlottesville, Virginia, knows the scrutiny has unsettled the community. But, he says, the project is working hard to make sure that the labs have all the details they need to match the original studies. The effort will ultimately benefit the field, he says, by gauging the extent of the reproducibility problem in cancer biology.

6. What is the passage primarily about?
- A. Cancer biology
 - B. Cancer reproducibility
 - C. Research findings in cancer biology
 - D. Papers on reproducibility
7. The phrase “hold up” in line 2, paragraph 3, is closest in meaning to _____.
- A. persist
 - B. continue
 - C. come to a halt
 - D. prove effective
8. What can be said about the reproducibility project?
- A. It planned to examine the 50 most influential papers in Cell.
 - B. It was very particular about the papers on cancer reproducibility.
 - C. It lacked skills required in the lab.
 - D. It faced a negative reaction.
9. The author gives synonyms for which of the following words?
- A. announce
 - B. replicate
 - C. gauge
 - D. scrutinize
10. According to the passage, the purpose of the reproducibility project is most likely _____.
- A. to find fault with the scientists in cancer biology
 - B. to copy the experiments of other scientists in cancer biology
 - C. to know how serious the reproducibility problem is in cancer biology
 - D. to benefit the field of cancer biology

非选择题部分

注意事项：

用黑色字迹的签字笔或钢笔将答案写在答题纸上，不能答在试题卷上。

II. Directions: Add the affix(es) to each word according to the given Chinese, making changes when necessary. (8%)

- | | |
|-----------------|--------|
| 11. instinct | 本能地 |
| 12. permanent | 不变性 |
| 13. coincide | 巧合 |
| 14. organic | 无机的 |
| 15. sphere | 半球 |
| 16. plant | 移植 |
| 17. contaminate | 污染（名词） |
| 18. harmony | 和谐的 |

III. Directions: Fill in the blanks, each using one of the given words or phrases below in its proper form and write your answer on the ANSWER SHEET.(12%)

- | | | | |
|-------------|-----------|---------------|------------------------|
| border on | in common | opt for | contribute to |
| what's more | be liable | accrue to | take into account |
| at random | fond of | be exposed to | draw a boundary around |

19. Only a small number of the mentally ill _____ to beat themselves or others.
20. She said her daughter had never _____ the bad influence of Western culture.
21. If you are _____ them, you feel affection for them.
22. Scientists believe that they can _____ the bright future of the world.
23. She had very little _____ with her brother.
24. Ability to think will _____ you from years of study.
25. The shop assistant said these were the clothes we could _____.
26. Several people applied for this casual job, and we just picked one _____.
27. Professor, could you please _____ the positive and negative data?
28. China _____ India in the southwest.
29. Before deciding what to do, we must _____ all the difficulties.
30. She dances well, and _____, she sings beautifully.

IV. Directions: Fill in each blank with a suitable word given below and write your answer on the ANSWER SHEET. (10%)

belonging	mechanical	or	with	artificial
providing	through	by	recognition	acting

Computer vision is the science and technology of machines that see. As a scientific discipline, computer vision is concerned _31_ the theory and technology for building artificial systems that obtain information from images _32_ multi-dimensional data. A significant part of _33_ intelligence deals with planning or deliberation for system which can perform _34_ actions such as moving a robot _35_ some environment. This type of processing typically needs input data provided _36_ a computer vision system, _37_ as a vision sensor and _38_ high-level information about the environment and the robot. Other parts which sometimes are described as _39_ to artificial intelligence and which are used in relation to computer vision are pattern _40_ and learning techniques.

V. Directions: Translate the following sentences into English, each using one of the given words or phrases below. (10%)

take... for granted	stand for	end up	be bound up with	press on
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- 41. 他们最终还是乘出租车去了那儿。
- 42. 我认为修建新公路是理所当然的。
- 43. 教师不应把自己的观点强加于学生。
- 44. UNESCO 代表联合国教科文组织。
- 45. 世界的未来与科学技术的发展密切相关。

VI. Directions: Translate the following paragraph into Chinese. (15%)

46. In the adult study, a series of factors were significantly associated with the perception of car fumes or dust/soot. Annoyance due to noise exposure and rated impairment of life quality showed the stronger association in the logistic models. But odor and noise sensitivity also had a significant impact on the ratings.

VII. Directions: Read the following passage, and then fill in the table with the information based on the passage. (10%)

Fat can indeed act as a shock absorber in violent collision. A 2003 study of car-crash victims found that those with more fat were less likely to suffer abdominal injuries. But the fat-as-airbag principle only goes so far. When a driver is flung forward, the heavier his or her body, the greater the force required to stop it.

The pelvis is the primary load-bearing structure for seat-belt safety, Kent, an American scientist, says. But with big stomachs, seat belts slide up and off the lap. Since a restraint works best once it engages with a dead body, any time it spends pressing into soft tissue will delay that protective effect.

To observe this, Kent defrosted eight dead bodies and belted them into car seats for a 30mph crash. High-speed video showed that the obese bodies flew off their seats pelvis-and lower-chest first. Smaller subjects' hips stayed in place as their heads and the main body thrown against the upper strap. That may help explain the pattern of injuries typically seen in obese crash victims—more damage to the legs, less to the head, and a greater likelihood of death.

Can Body Fat Protect You Like a Built-in Cushion?

Role of fat in violent collision	Type of people likely to suffer less abdominal injuries	Movement of seat belts with big stomachs	Result of a restraint pressing into soft tissue	Pattern of injuries mostly found in obese crash victims
47	48	49	50	51

VIII. Directions: Write a passage (150-200 words) in English on the following title. Develop the ideas according to the Chinese outline given below. (15%)

52. My View on Smartphone

- (1) 随着网络技术发展，现在越来越多的人使用智能手机；
- (2) 但是人们对使用智能手机有不同的看法；
- (3) 我的看法。