

全国 2017 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)

In “*Health and Climate Change: policy responses to protect public health*” a group of European and Chinese academics built upon a 2009 report in *The Lancet* that outlined the expected public health impacts of climate change (full disclosure – the group of academics includes the author of this post). These impacts include increasing instances of respiratory, cardiovascular, and vector-borne diseases as well as under-nutrition and mental health challenges.

But, even more immediately, the authors discuss how moving away from carbon-intensive energy technologies could improve public health today by reducing other types of air pollution including particulate matter (PM) and nitrogen oxides (NO<sub>x</sub>).

The core of this discussion lies on the fact that energy technologies that produce greenhouse gases also often produce these other air pollutants simultaneously. For example, diesel and gasoline vehicles, coal power plants, biomass (for example, wood and charcoal) for cooking, and many industrial processes (for example, mining, cement manufacturing, and smelting) all produce both carbon dioxide and particulate matter (PM).

These other air pollutants lead to higher rates of illness and premature death in exposed populations.

In the United Kingdom, air pollution from coal power plants is responsible for an estimated £3.1 billion per year in added health costs to treat conditions including lung cancer and chronic bronchitis. Overall, air pollution from the UK's power sector is responsible for approximately 3,800 premature deaths each year due to respiratory disease alone. Each year, pollution from the UK's transportation sector leads to 7,500 premature deaths across the country.

Air pollution in China has an even more dramatic impact on human health. In 2010, air pollution led to an estimated 1.2 million premature deaths and the loss of 25 million healthy years of life. These premature deaths correspond to economic losses of up to USD 1.4 trillion. The average person in China will lose over 3 years (40 months) of life due to fine particulate matter (PM2.5) air pollution even though the country already spends an estimated 0.37% of its GDP on cleaning the air.

Countries could quickly and economically reduce air pollution and its direct impacts on public health by transition to low-carbon energy technologies, according to The Lancet report. For example, a combination of more fuel efficient vehicles and increasing amounts of walking and cycling in the U.K.'s urban areas could lead to a net savings of more than £15 billion by 2030 to the country's social security and healthcare systems.

The overall message from the new Lancet report is that climate change mitigation could be the greatest global health opportunity of the 21st century. Much of this opportunity lies in avoiding future negative health impacts from climate change. However, an arguably stronger – and certainly more immediate – case lies in the immediate benefits resulting from lower levels of air pollution as we move to low-carbon energy technologies.

1. The word “**that**” in line 2, paragraph 1, refers to \_\_\_\_\_.  
A. The Lancet  
B. a group of European and Chinese academics  
C. the 2009 report  
D. the current Lancet report
2. The word “**exposed**” in line 1, paragraph 4, is closest in meaning to \_\_\_\_\_.  
A. affected                      B. vulnerable                      C. sick                      D. unprotected
3. “**The Lancet**” in line 2, paragraph 7, refers to \_\_\_\_\_.  
A. a climate conference                      B. an ecological safety magazine  
C. a medical journal                      D. a forum

4. Which of the following can be inferred from the passage?
- A. Power plants could hardly avoid air pollution.
  - B. Climate change affects physical rather than mental health.
  - C. It is difficult to reduce air pollution quickly.
  - D. Carbon-intensive energy technologies are most responsible for air pollution.
5. According to the passage, which of the following statements is **NOT** true?
- A. Less air pollution cannot possibly result in immediate benefits.
  - B. Climate change mitigation could help to reduce public health problems.
  - C. Energy technologies often produce air pollutants.
  - D. Both China and UK should strive to develop low-carbon energy technologies.

(B)

I've seen some big bumblebees in my time, but nothing like South America's *Bombus dahlbomii*. "It looks like a flying mouse," says Sarina Jepsen, endangered species program director for the The Xerces Society for Invertebrate Conservation. "It's huge, colorful and incredibly charismatic."

*B. dahlbomii* is, in fact, the world's largest bumblebee. Native to the Patagonia region of Argentina and Chile, the queens of the species can reach an amazing four centimeters in length. That's eight times the size of one of the most recognizable North American species, the American bumblebee (*B. pensylvanicus*).

The Patagonian bumblebee's notable size doesn't offer them much protection, though. Over the past decade the species has been wiped out from much of its historic range. It's unknown exactly how many remain.

So how did this massive species disappear in such a small amount of time? To answer that question, we need to go back to 1997. That's the year that two European bumblebee species—large garden bumblebees (*B. ruderatus*) and buff-tailed bumblebees (*B. terrestris*)—were imported to Chile for the purpose of pollinating greenhouse agricultural crops. Some of the bees spread to the wild and they reached Patagonia in 2006.

That's when the devastation started. Not only did the buff-tailed bumblebees present some competition for the native variety, they were also infected with a parasitic protozoan called *Apicystis bombi* that, as you might guess from its name, targets many honeybees and bumblebees. The parasite—which does not appear to afflict the buff-tailed bumblebees—infests the guts, then spreads to other parts of the body. Still poorly understood, it appears to cause behavioral changes that result in a high level of worker bee mortality and slows the establishment of new colonies.

“We need immediate action to help these bumblebees,” Jepsen says. The most important first steps will be to figure out how the pathogen is being transmitted among *B. dahlbomii* and how the invading species are competing with the natives for food and habitat.

The work to find that information begins soon. The International Union for Conservation of Nature (IUCN) has launched a fundraising campaign to help raise the money necessary to evaluate the health and risks of *B. dahlbomii* and 100 other little-studied bumblebee species. “Funding is difficult to come by and we need to fast-track the process,” says Paul Williams, chair of the IUCN Bumblebee Specialist Group. He says the group already has some funding but the outreach will help to fill the gap and also serve to engage the public in the plight of the world’s bumblebees.

Meanwhile Jepsen worries about pathogens like this spreading to other species as bees are imported from country to country and continent to continent. She’s not alone; a 2013 paper published in the *Journal of Applied Ecology* warned that more than a million commercial bumblebee colonies are imported worldwide every year. Tests on colonies from three producers found that 77 percent of them carried microbial parasites, including *A. bombi*. The researchers dubbed the problem “Trojan hives.” As a result of that paper, the British Ecological Society and Bumblebee Conservation Trust called for strict controls of bumblebee imports in order to protect the U.K.’s native bees.

It’s obviously too late for new controls to protect the “flying mouse,” but research by the IUCN’s bumblebee team will now seek to find out how endangered the species has become. Hopefully in the process they can come up with solutions to help save it.

6. What does the passage mainly discuss?
  - A. The flying mouse
  - B. The world's biggest bumblebee at the risk of distinction
  - C. How European bumblebee species kill others
  - D. How pathogens afflict bumblebees
7. All of the following refer to the same thing in the passage **EXCEPT** \_\_\_\_\_.
  - A. the pathogen
  - B. the invading species
  - C. the microbial parasite
  - D. *A. bombi*
8. The phrase "**come by**" in line 4, paragraph 7, is closest in meaning to \_\_\_\_\_.
  - A. provide for
  - B. manage
  - C. obtain
  - D. receive
9. How did the buff-tailed bumblebees come to South America?
  - A. By trade.
  - B. By Spreading.
  - C. By invading.
  - D. By pollination.



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

or, remains, to, in, be, automotive, of, developed, without, reported

Hydrogen is the fuel of the future. Unfortunately, one problem \_31\_: Hydrogen is a gas and cannot easily \_32\_ pumped into a tank like gasoline. Storage \_33\_ the form of solid hydrides, chemical compounds of hydrogen and a metal \_34\_ semimetal, are good storage materials in principle, but have not been well suited \_35\_ automotive applications. An American research team at the Ford Motor Company in Dearborn and the University of California, Los Angeles, has now \_36\_ a novel hydride that could be a useful starting point for the development of future \_37\_ hydrogen-storage materials. As Jun Yang and his team have \_38\_ an “autocatalytic” reaction mechanism causes the composite made \_39\_ three different hydrides to rapidly release hydrogen at lower temperatures and \_40\_ dangerous by-products.

**V. Directions: Translate the following sentences into English, each using one of the given words or phrases below. Write your answer on the ANSWER SHEET. (10%)**

replete with, in memory of, stem from, opt for, within reach of

41. 正确的决定来源于正确的判断。
42. 李教授想在大学附近租一套公寓。
43. 上水果前，每位用餐者都已经吃得很饱了。
44. 选择职业时，父亲让我拿主意，我选择了教师职业。
45. 为了纪念在这次战斗中牺牲的三位英雄，村民们修建了一座纪念碑。

**VI. Directions: Translate the following paragraph into Chinese. Write your answer on the ANSWER SHEET. (15%)**

46. However, much of industry is concerned with batch production where perhaps one type of item is made during the morning and another during the afternoon. Human beings are very good in this environment. From a robotic point of view, they are light mobile structures with exceptionally good sensory perception and intelligence far above that of any current robot.

**VII. Directions: Read the following passage, and then fill in the table with the information based on the passage. Write your answer on the ANSWER SHEET. (10%)**

In 1997, the geoscientist Brian Toon and colleagues found that a space rock half a mile wide would produce an explosion that releases the energy equivalent of up to 100,000 million tons (Mt) of TNT. And a meteorite a mile in diameter might send enough pulverized rock into the stratosphere to block out sun-light and cause global cooling.

The object that killed off the dinosaurs was probably seven or eight miles wide, says Jay Melosh, a planetary physicist at Purdue University. Its impact would have ejected a dust smoke that spread clear around the planet and rained blazing-hot on to forests, igniting them. "The dinosaurs probably broiled to death," he says.

Such a collision today would kill billions of people. Those who didn't perish in the initial blast or the fires that followed would face long odds of finding sustenance. "People are going to starve to death," Toon says. Still, a few would likely weather the apocalyptic storm. For a collision to wipe out the human race altogether, Toon estimates it would take a 60-mile-wide meteorite. He says, "That would burn everybody to death."

**How Big Would A Meteorite Have to Be to Wipe Out All Human Life?**

The power sent by the explosion produced by a half-mile meteorite is equal to <u>47</u> .	A meteorite a mile in diameter sending into the air exploding rock dust would <u>48</u> .	The probable size of the object that wiped out the dinosaurs is <u>49</u> .	Forests are caused to burn by <u>50</u> .	The collision of a 60-mile-wide meteorite would kill off all humans by <u>51</u> .
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**VIII. Directions: Write a passage (150-200 words) in English on the following title. Develop the ideas according to the Chinese outline given below. Write your passage on the ANSWER SHEET. (15%)**

52. My View on Robots

- (1) 随着科技的发展, 现在人们在越来越多的领域使用机器人;
- (2) 但是人们对开发和使用机器人有不同的看法;
- (3) 我的看法。