

2020 上半年高等教育自学考试 《英语科技文选 00836》真题

(精编)

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)

It was a tweet that brought them together. "Hell hath no fury like a scientist silenced," Caroline Weinberg, a public health educator and a science writer in New York City, tweeted late last month. As a result of worries about the impact that President Donald Trump's administration might have on scientists, Weinberg's tweet also floated the idea of a "science march" to highlight the importance of research. Someone suggested she contact Jonathan Berman, a like-minded postdoctoral fellow studying hypertension at the University of Texas Health Science Center in San Antonio, who had already set up a Twitter handle: @ScienceMarchDC.

A few retweets later, "things just blew up," Weinberg says. Within days, the science march account had more than 300,000 followers and a "secret" Facebook group had more than 800,000 members. And last week, Weinberg, Berman, and a third co-organizer, anthropology doctoral student Valorie Aquino of the University of New Mexico in Albuquerque, officially announced that a March for Science would be held on 22 April in Washington,

D. C.

The marches will be not just scientists, but for “anyone who believes in empirical science,” the organizers emphasize on the March for Science web page. The demonstrations are meant

to be a celebration of science, they say, as well as “a call to support and safeguard the scientific community.”

But although the march has garnered the endorsement of many prominent scientists and some scientific societies, others have so far remained on the sidelines, cautioning in part that the march could paint scientists as just another partisan special interest in an already highly polarized political climate. If the event is “interpreted as “These people who like science are marching against Trump,” it could politicize science even more and potentially hurt public trust in science as an institution,” says communications researcher Dominique Brossard, who specializes in public attitudes on scientific issues at the University of Wisconsin in Madison.

“In the current political climate, we must calculate very carefully the possible ramifications” of backing the march, Andrew Black, chief of staff of AAAS in Washington, D. C.. wrote in a 1 February email to the staff of the organization, which has about 100,000 members and bills itself as the world’s largest general scientific society. AAAS has not yet decided whether to endorse or participate in the march.

The debate over the march’s wisdom is just part of the whirlwind that has engulfed its amateur organizers, who have yet to meet in person. “I’ve lost so much weight from forgetting to eat,” Aquino says. In just weeks,

the organizers have created a web page, written a mission statement, and established a set of core principles. A donate button on the march's website has been getting hits despite little promotion, and an online store selling swag had racked up more than \$10,000 in sales of \$25 T-shirts as of 7 February.

1. What is the passage primarily about?
 - A. The impact of a tweet.
 - B. The impact the Trump's administration might have.
 - C. Plans for a science march.
 - D. Opinions on a science march.
2. The word "garnered" in line 1, para.4, is closest in meaning to__
 - A. met with
 - B. collected
 - C. ignited
 - D. accepted
3. The word "fills" in line 4, para.5, is closest in meaning to__
 - A. regards
 - B. has established
 - C. advertises
 - D. defines
4. What are the organizers most likely to do in the first place, according to the passage?
 - A. To negotiate with the government.
 - B. To meet in person.

C. To hold a fund-raising party.

D. To solicit opinions.

5. Which of the following is NOT true about the scientists who remain on the sidelines?

A. They are against Trump.

B. They don't like science to be more politicized with the march.

C. They are worried that the highly polarized political climate would get even worse with the march.

D. The public usually has trust in the scientific community.

(B)

Could dark matter consist of primordial black holes, as numerous as the stars? It's an old, improbable idea, but it made a Lazarus-like comeback a year ago, when the discovery of gravitational waves suggested that the cosmos abounds with unexpectedly heavy black holes. With decades-long searches failing to find the hypothetical dark matter particles that theorists have favored, physicists are turning to more radical ways of explaining the universe's missing mass.

"It's a nutty idea," says Marc Kamionkowski, a theorist at Johns Hopkins University in Baltimore, Maryland, whose team made the case for black hole dark matter here last week at a meeting of the American Physical Society. "But every idea of what dark matter might be is a nutty idea" Others are skeptical, and new studies add to the doubts. For the idea to hold up, "I think you need some miracles," says Daniel Holz, a theorist at the University of Chicago in Illinois.

Ordinary black holes form when individual stars collapse, and were thought to top out at about 15 times the mass of the sun. And the supermassive black holes that lurk in galactic centers swallow billions of stars. But astrophysicists didn't see how collapsing stars could form black holes of intermediate masses. That's why it was a surprise when physicists with the Laser Interferometer Gravitational-Wave Observatory (LIGO) announced in February 2016 that they had detected ripples in space from the violent merger of two black holes 29 and 36 times as massive as our sun.

Theorists say there is a way to form such heavy black holes even before the first stars: through the direct collapse of dense spots in the seething plasma of particles that filled the cosmos right after the big bang. If LIGO's discovery wasn't a statistical burp, space could teem with these primordial black holes, says Kamionkowski—enough to account for the 85% of the universe's matter that is missing.

They should also have left a mark on the cosmic microwave background (CMB). X-rays from matter swirling into the black holes should have ionized some of the first atoms, which would have altered the CMB's mottled appearance. Kamionkowski and colleagues calculate black holes between 20 and 100 solar masses could be consistent with CMB measurements. But Massimo Ricotti, a cosmologist at the University of Maryland in College Park, who did an earlier calculation with different assumptions, thinks “it would be very difficult to have all the dark matter in 30-solar-mass black holes.”

Observations of galaxies today cast a different doubt on black hole dark matter, reports Timothy Brandt, an astrophysicist at the Institute

for Advanced Study in Princeton, New Jersey. Black holes heavier than 10 solar masses should have long ago settled to the centers of small galaxies, churning up stars with their gravity like bowling balls setting the pins flying. That would have puffed up the galaxies. However, Brandt examined five faint dwarf galaxies near the Milky Way, and found them to be compact and unruffled. "That's a very strong argument against this sort of dark matter," he says,

6. Which of the following best expresses the main idea of the passage?

- A. Dark matter consists of black holes.
- B. What dark matter might be.
- C. Debate heats up over black holes as dark matter.
- D. Physicists are turning to more radical ways of explaining the

universe's missing mass.

7. The phrase "made the case for" in line 2, para.2, is closest in meaning to

- A. proved by means of reasons
- B. made arguments for
- C. cited examples for
- D. illustrated

8. The phrase "hold up" in line 4, para.2, is closest in meaning to

- A. take form
- B. show promise
- C. prove true
- D. be agreed on

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

A. An ordinary black hole is usually no more than 15 times the solar mass.

B. Supermassive black holes must be by far more massive than black holes of intermediate masses.

C. The universe's missing mass is the dark matter particles.

D. Observations have proved that black holes settled to the centers of small galaxies before the first stars.

10. Which of the following can be inferred from the passage?

A. The first stars are the stars discovered the first time by humans.

B. Gravitational waves result from stars collapsing.

C. Observations of the compact little galaxies challenge the idea of black holes as dark matter.

D. Black holes account for most of the universe's missing matter.

II. Directions: Add the affix to each word according to the given Chinese, making changes when necessary. Write your answer on the ANSWER SHEET. (8%)

11. conception 误解.

12. geometric 几何学

13. reversible 不可逆转的

14. molecule 大分子

15. subject 主观的

16. mental 心智

17. nourish 营养不良的

18. sense 感觉的

II. 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%)

relieve of

within reach of

inject with

accrue to

link to

reminiscent of

in common

in relation to

at random

no wonder

associate with

draw a boundary around

19. The business is no longer owner-centric, and relationships can ___ the new owner.

20. The manager suggested that the pipe
the cold water supply.

21. You now have a mediation available that can_ any destination.

22. It is simply impossible to___ any disease entity, let alone its causes.

23. The two universities, based on their agreement, have libraries and

laboratories

24. It should be ____ that you don't understand them. No one ever will.

25. Hopefully, the new machine may ____ you quite some trouble.

26. The government released the latest developments ____ the rare disease yesterday.

27. Food and water should be left ____ birds and wild animals in winter.

28. It was written in a style strongly ____ Tolstoy's novels.

29. All the students were excited as they ____ passion and enthusiasm in that class.

30. This sort of bug seems to happen ____, which is very hard to track down.

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

substitute without in

will

with

like

another

ways

for

into

Single-use plastic bags have become such a ubiquitous way of life that it seems as if we simply cannot do s _31_ them. However, if we have the _32_, we can start reducing their use _33_. small ways. A tote bag can make

a good. 34_ for holding the shopping. You can keep the bag_ 35_ the cahier, and then put your purchases_ 36_ it instead of the usual plastic bag. Recycling the plastic bags you already have is. 37_ good idea. These can come into use for various purposes,. 38_ holding your garbage, instead of purchasing new ones. While governments may be working out _39_ to lessen the impact of plastic bags on the environment, however, each of us should shoulder some of the responsibility. _40_ this problem, which ultimately harms us.

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

coincide with

in common

deficient in

give off

41. 历史上人口失控的例子比比皆是。

42. 当今世界，许多国家都有着共同利益，要独身自处是不可能的。

43. 如果两次检验的结果不一致该怎么办？

44. 许多植物能发出强烈的令蚂蚁和其它野外昆虫害怕的气味以保护自己。

45. 很多人都缺镁 (magnesium), 因此多吃芹菜 (celery) 可以帮助你的身体补充这种重要的营养成分。

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

46. Men and women showed a difference in brain use only on the rhyming task. In both sexes, trying to recognize rhymes led to increased blood flow in the inferior frontal gyrus of the left hemisphere—Broca's area, as it's commonly called—which has long been linked to language ability. In men that was the only active region, whereas 11 of the 19 women also showed activation in the corresponding region in the right hemisphere. The women's brains weren't working any harder overall; the work was just spread out more. "The accuracy was very comparable," Sally Shaywitz says. "It may be that there are just different routes in the brain to get to the same results."

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%)

The comforts and conveniences of modern life have brought with them problems that did not exist in the days of simpler living. Machinery which operates on electricity made by burning coal or petroleum is used to process raw materials taken from the earth. Gases from the burning fuels are sent into the air. Wastes from making raw material into finished products are sent both into the air and into the water.

As a result of these and of other pollutants some lakes and rivers have become so contaminated that the fish in them die. Besides the dangers to health from breathing polluted air, the waste gases have effects on the upper atmosphere, which may endanger life on earth.

These threats, as well as the depletion of natural resources (such as fuels, forests, and soil)

by carelessly wasteful use, have worried scientists and other thoughtful people. Such persons are also disturbed about the effects of chemical fertilizers and of poisons which farmers use in order to destroy insects and weeds. Above all they are alarmed at the interference with the natural balance of the environment, and its possible consequences.

Ecology

Machinery is often driven by <u>47</u> made by burning fossil fuels.	Rivers may become polluted by the <u>48</u> dumped into the water .	Life might be in danger because of <u>49</u> in the upper atmosphere.	The number of forests and fuels has decreased as a result of carelessly <u>50</u> .	Poisons used to destroy insects and weeds may interfere with <u>51</u> of the environment.
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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. Alipay in China

- (1) 支付宝受到人们欢迎, 但也引发一些问题;
- (2) 你所知道的问题;
- (3) 如何改进。