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GRE阅读理解

综合应用1

M A K E I T E A S Y

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Passage 1

Prominent among theories of the function of sleep is Meddis' immobilization hypothesis, which holds that sleep, rather than serving a restorative function, plays a protective role during times that animals cannot be usefully engaged in other activities. Meddis reasoned that animals not immediately threatened by predators would be safer if they passed the time sleeping. **Sleep would prevent an animal from moving or responding to nonthreatening stimuli in ways that might attract the attention of predators.**

However, that hypothesis cannot easily explain why one often observes a rebound in sleep time or intensity following a period of sleep deprivation. Neither does the hypothesis explain the existence of various states of sleep, which themselves may be associated with different functions.

For the following question, consider each of the choices separately and select all that apply.

1. According to the passage, the immobilization hypothesis fails to account for which of the following facts?

A. That sleep does not appear to be a uniform and unchanging state.

B. That under certain conditions animals appear to need more sleep than usual.

C. That animals rarely sleep when a predator has been detected nearby.

2. In the context of the passage as a whole, the highlighted portion serves primarily to

A. present the thinking that led scientists to qualify a widely accepted view.

B. describe the basis on which a hypothesis was advanced.

C. illustrate the kind of reasoning that is applied in a branch of science.

D. explain how a hypothesis can be tested empirically.

E. relate the analysis that refined a tentative explanation.

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Passage 2

Astronomers who study planet formation once believed that comets—because they remain mostly in the distant Oort cloud, where temperatures are close to absolute zero—must be pristine relics of the material that formed the outer planets. The conceptual shift away from seeing comets as pristine relics began in the 1970s, when **laboratory simulations** revealed there was sufficient ultraviolet radiation reaching comets to darken their surfaces and there were sufficient cosmic rays to alter chemical bonds or even molecular structure near the surface. Nevertheless, astronomers still believed that when a comet approached the Sun—where they could study it—the Sun's intense heat would remove the corrupted surface layer, exposing the interior. **About the same time, though, scientists realized comets might contain decaying radioactive isotopes that could have warmed cometary interiors to temperatures that caused the interiors to evolve.**

1. The author suggests that the realization described in the final sentence of the passage had which of the following effects?

A. It introduced a new topic for study by astronomers interested in planetary formation.

B. It led astronomers to adopt a number of different strategies in trying to determine the composition of cometary interiors.

C. It called into question an assumption that astronomers had made about comets.

D. It cast doubt on astronomers' ability to study the interior parts of comets.

E. It caused astronomers to revise their account of the composition of the outer planets.

For the following question, consider each of the choices separately and select all that apply.

2. It can be inferred that the author would agree with which of the following statements about the “laboratory simulations”?

A. The simulations showed that despite the low temperatures in the Oort cloud, there was sufficient energy there to alter comet.

B. Astronomers were initially reluctant to accept what simulation showed about the composition of comets.

C. The simulations themselves did not eliminate the possibility that comets contain pristine relics of material from the early solar system.

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Passage 3

For years, the leading theory for what caused the Younger Dryas (a dramatic reversal, about 12,900 years ago, in a global warming trend) was a release of water from glacial Lake Agassiz. The theory posited that this meltwater flooded into the North Atlantic, lowering the salinity and intensity of surface waters enough to prevent them from sinking. Ocean currents were changed in such a way that northward transport of heat in the ocean diminished, and the North Atlantic regions plunged back into near-glacial conditions. However, evidence has emerged that the Younger Dryas began long before freshwater flooded the North Atlantic. Additionally, the temperature changes included by a shutdown in the North Atlantic heat conveyor system are too small to explain the Younger Dryas.

1. The author of the passage implies which of the following about the release of water from glacial Lake Agassiz?

A. The notion that the release occurred has been challenged by more recent findings.

B. The release probably occurred much earlier than scientists have generally assumed.

C. The release would not have been sufficient to cause any temperature change in the North Atlantic.

D. The timing of the release is such that it probably did not trigger the onset of the Younger Dryas.

E. The release was probably unrelated to the global warming trend that was taking place.

2. The passage is primarily concerned with

A. presenting evidence that undermines an explanation.

B. explaining the nature of a climatological phenomenon.

C. questioning the timing of a particular event.

D. discussing a new explanation for a phenomenon.

E. suggesting revisions to a popular theory.

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Passage 4

Pueblo Bonito, the most impressive of the “great houses” at the prehistoric Chaco Canyonsite in New Mexico, comprised over 600 rooms and 4 to 5 stories. Traditional interpretations have viewed the great houses as almost entirely residential, with some archaeologists estimating the population of Pueblo Bonito at 1,200. But Windes recently challenged this view by pointing out the paucity of hearths recorded during the excavation of Pueblo Bonito, which revealed only 3 upper-story hearths, in contrast to 59 ground-floor hearths: habituation rooms would have required hearths for cooking and heat. It is possible, however, that the collapse of upper-story floors disturbed evidence of upper-story hearths to such an extent that they were not revealed by early excavations such as those conducted by Pepper’s field crews in the 1890s and Judd’s in the 1920s. Additionally, reliance on room features for early population estimates is complicated by the Chacoan’s later remodeling, especially given Judd’s disinclination to destroy later structures and features to expose earlier ones. The failure of early excavations to strip off intact floors may have concealed evidence of hearths in upper-story rooms.

1. The author of the passage would be most likely to agree with which of the following statements about Windes' argument?

A. It relies on evidence that is irrelevant to the examination of structures as large as Pueblo Bonito.

B. It fails to acknowledge crucial evidence from great houses other than Pueblo Bonito.

C. It fails to incorporate crucial evidence from excavations before the 1920s.

D. It is based on a false notion about the significance of hearths.

E. It is based on evidence that may be incomplete.

2. It can be inferred from the passage that Windes would be most likely to agree with which of the following statements about room usage in Pueblo Bonito?

A. Upper-story rooms were rarely used as storage areas.

B. Rooms that were remodeled were most likely to have been residential rooms.

C. The majority of residential rooms were located on the ground floor.

D. Early excavations of Pueblo Bonito disturbed much of the evidence indication room usage.

E. Upper-story rooms with hearths were probably used for different purposes than were lower story rooms with hearths.

3. Which of the following can be inferred about the excavation work performed by Judd's field crew?

A. It did not unearth many room features that existed prior to Chacoan remodeling.

B. It did not unearth any evidence of upper-story hearths.

C. It revealed only habitation rooms.

D. It resulted in the collapse of some room features and upper-story floors.

E. It confirmed traditional population estimates for Pueblo Bonito.

Passage 5

Hotter and more massive than the Sun, stars called “stragglers” are puzzling to astronomers because such rapidly burning stars would not be expected to persist in ancient star clusters. **Some researchers believe that the typical blue stragglers are formed when two ancient, lower-mass stars collide and merge to form a more massive, hotter star.** Peter Leonard theorizes alternatively that in low density globular clusters, where mergers between single stars occur too infrequently to account for the observed quantity of blue stragglers, these stragglers are created instead by a group of stars. He suggests that a pair of stars already orbiting each other presents a larger target for a third star or another pair. Once this new grouping forms, close encounters between the stars could prompt any two to merge as a blue straggler. Leonard’s model predicts that each blue straggler has a distant orbiting companion—as appears true of many blue stragglers in the M67 cluster of the Milky Way galaxy.

1. The reference to a “larger target” serves primarily to suggest why a

A. blue straggler would be more likely to collide and merge with another star than would be a lower-mass star.

B. pair of stars would be more likely to encounter other stars than would the typical blue straggler.

C. pair of stars would be more likely to interact with other stars than would a single star.

D. blue straggler would be more likely to interact with a pair of stars than it would with a third star.

E. third star would be more likely to encounter a pair than it would to encounter a blue straggler.

2. Information presented in the passage suggests which of the following about blue stragglers?

A. They originate from stars that are hotter and more massive than the Sun.

B. They are burning more rapidly than other types of stars observed in ancient star clusters.

C. They are older than most other types of stars within the same star cluster.

D. They are less numerous in low-density globular clusters than are pairs of stars.

E. They generally originate from the oldest stars among those found in ancient star clusters.

3. The passage cites which of the following as evidence undermining the theory presented in the second sentence?

A. A discrepancy between the number of mergers between single stars in certain low-density globular clusters and that in other low-density globular clusters.

B. A discrepancy between the heat and mass of blue stragglers formed by one type of process and the heat and mass of blue stragglers formed by another type of process.

C. A discrepancy between the frequency of star mergers in low-density globular clusters and those in high-density globular clusters.

D. A discrepancy between the amount of heat and mass of ancient single stars and that of blue stragglers.

E. A discrepancy between the number of mergers between single stars in certain star clusters and the number of blue stragglers in those clusters.

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