

### [3.3.25] SAT PRACTICE

**ID: 701126bc**

In superfluorescence, electrical charges known as dipoles emit light in synchronized bursts so intense that they are visible to the eye. Until recently, this phenomenon has only been observed at extremely cold temperatures because dipoles cannot synchronize at higher temperatures. But in a study, Melike Biliroglu and colleagues observed superfluorescence at room temperature in thin films made of perovskite and other similarly crystalline materials; the researchers propose that the formation of shock-absorbing quasiparticles called polarons in the material protects dipoles from thermal interference.

Based on the text, how are polarons believed to be involved in the superfluorescence observed in Biliroglu and colleagues' study?

- A. Polarons enable superfluorescent bursts to cross from one crystalline material to another.
- B. Polarons allow for the dipoles to synchronize despite higher temperatures.
- C. Polarons accelerate the dipoles' release of superfluorescent bursts.
- D. Polarons decrease the intensity of the superfluorescent burst.

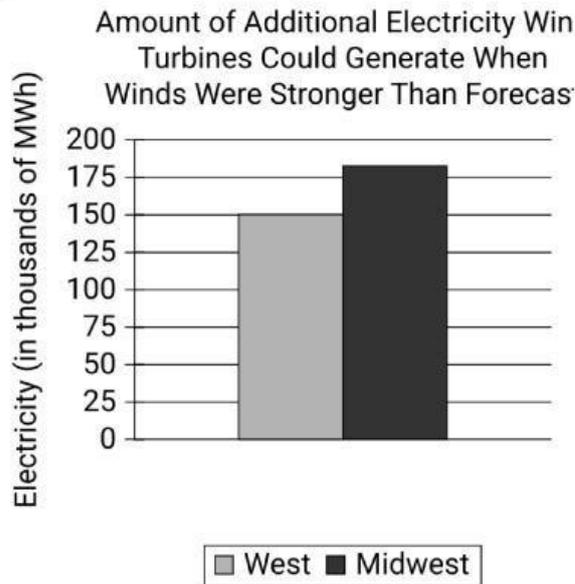
**ID: c83e0b43**

*O Pioneers!* is a 1913 novel by Willa Cather. In the novel, Cather depicts Alexandra Bergson as a person who takes comfort in understanding the world around her: \_\_\_\_\_

Which quotation from *O Pioneers!* most effectively illustrates the claim?

- A. "She looked fixedly up the bleak street as if she were gathering her strength to face something, as if she were trying with all her might to grasp a situation which, no matter how painful, must be met and dealt with somehow."
- B. "She had never known before how much the country meant to her. The chirping of the insects down in the long grass had been like the sweetest music. She had felt as if her heart were hiding down there, somewhere, with the quail and the plover and all the little wild things that crooned or buzzed in the sun. Under the long shaggy ridges, she felt the future stirring."
- C. "Alexandra drove off alone. The rattle of her wagon was lost in the howling of the wind, but her lantern, held firmly between her feet, made a moving point of light along the highway, going deeper and deeper into the dark country."
- D. "Alexandra drew her shawl closer about her and stood leaning against the frame of the mill, looking at the stars which glittered so keenly through the frosty autumn air. She always loved to watch them, to think of their vastness and distance, and of their ordered march. It fortified her to reflect upon the great operations of nature, and when she thought of the law that lay behind them, she felt a sense of personal security."

ID: a9040290



Electric companies that use wind turbines rely on weather forecasts to predict the maximum amount of power, in megawatt-hours (MWh), they can generate using wind so that they can determine how much they'll need to generate from other sources. When winds are stronger than they were forecast to be, however, the predicted maximum amount of electricity wind turbines could generate will be too low. For example, the graph shows that for the West region, the winds were \_\_\_\_\_

Which choice most effectively uses data from the graph to complete the example?

- A. strong enough to generate about 150 thousand more MWh of electricity from wind turbines.
- B. so weak that the electricity from wind turbines was about 175 thousand MWh less than predicted.
- C. so weak that the electricity from wind turbines was about 150 thousand MWh less than predicted.
- D. strong enough to generate about 175 thousand more MWh of electricity from wind turbines.

ID: ac285054

The domestic sweet potato (*Ipomoea batatas*) descends from a wild plant native to South America. It also populates the Polynesian Islands, where evidence confirms that Native Hawaiians and other Indigenous peoples were cultivating the plant centuries before seafaring first occurred over the thousands of miles of ocean separating them from South America. To explain how the sweet potato was first introduced in Polynesia, botanist Pablo Muñoz-Rodríguez and colleagues analyzed the DNA of numerous varieties of the plant, concluding that Polynesian varieties diverged from South American ones over 100,000 years ago. Given that Polynesia was peopled only in the last three thousand years, the team concluded that \_\_\_\_\_

Which choice most logically completes the text?

- A. the cultivation of the sweet potato in Polynesia likely predates its cultivation in South America.
- B. Polynesian peoples likely acquired the sweet potato from South American peoples only within the last three thousand years.
- C. human activity likely played no role in the introduction of the sweet potato in Polynesia.
- D. Polynesian sweet potato varieties likely descend from a single South American variety that was domesticated, not wild.

**ID: 01989d77**

Microbes that live in shallow lakes and ponds produce methane, a harmful greenhouse gas. Ecologist Ralf Aben and his team wanted to see how different types of shallow-water plants might affect the amount of methane that escapes into the atmosphere. Aben's team set up some water tanks with soil and microbes from local ponds. Some tanks had a type of underwater plant that grows in the soil called watermilfoil. Other tanks had either duckweed, a type of plant that floats on the water's surface, or algae. Aben and his team found that tanks with duckweed and algae released higher levels of methane than tanks with watermilfoil did. This finding suggests that \_\_\_\_\_

Which choice most logically completes the text?

- A. the presence of some kinds of underwater plants like watermilfoil helps prevent methane from escaping shallow lakes and ponds.
- B. shallow lakes and ponds release more methane than deeper bodies of water because shallow bodies of water usually have more plants than deep bodies of water do.
- C. shallow lakes and ponds are more likely to contain algae than to contain either watermilfoil or duckweed.
- D. having a mix of algae, underwater plants, and floating plants is the best way to reduce the amount of methane in shallow lakes and ponds.

**ID: a13541c0**

Sandra Cisneros's 1984 novella *The House on Mango Street* made a lasting impact on US literature. Its depiction of Mexican American culture inspired later authors to examine their own heritage within their fictional works. Also influential was the book's portrayal of the main character, Esperanza, during a pivotal year of her youth. This insightful depiction of a preteen girl encouraged authors who, like Cisneros herself, are Latina to use fictional works to examine experiences from their own youth.

Which statement, if true, would most strongly support the claim in the underlined sentence?

- A. In interviews, a number of Latina authors say that *The House on Mango Street* inspired them to write about their own adolescence in their novels.
- B. In published writings, several prominent authors who are not Latina say that reading *The House on Mango Street* influenced their approach to writing fiction.
- C. *The House on Mango Street* has sold over six million copies and is one of the most commonly read books among high school and university students in the US.
- D. Since 1984, new novels about young Latina characters by Latina authors have often been compared to *The House on Mango Street*.

**ID: 8a8236e1**

Scent is tightly interwoven with our daily lives, often evoking significant memories and important social events. This connection is of growing interest to archaeologists who hope to use it to better understand ancient rituals, trade, social hierarchies, and medicine. Although the speed at which odor molecules dissipate makes identifying ancient scents challenging, advancements in biomolecular technologies show promise in unlocking ancient aromas from preserved artifacts. Archaeological studies making use of these advancements may provide new insights into past societies.

According to the text, what is one reason some archaeologists are interested in recovering scents from ancient artifacts?

- A. They are investigating whether people's sense of smell has declined in recent centuries.
- B. They believe the scents could illuminate important aspects of ancient life.
- C. They think that ancient scents would be enjoyable to people today.
- D. They hope to develop new medicines using ancient scent molecules.

ID: 7c1e5880

Scholars have noted that F. Scott Fitzgerald's writings were likely influenced in part by his marriage to Zelda Fitzgerald, but many don't recognize Zelda as a writer in her own right. Indeed, Zelda authored several works herself, such as the novel *Save Me the Waltz* and numerous short stories. Thus, those who primarily view Zelda as an inspiration for F. Scott's writings \_\_\_\_\_

Which choice most logically completes the text?

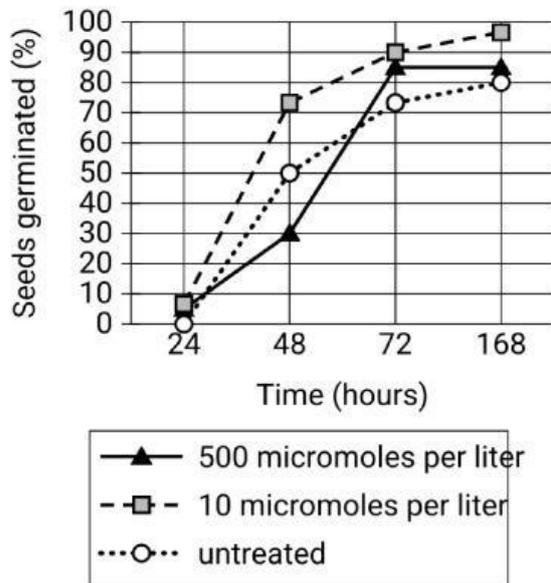
- A. overlook the many other factors that motivated F. Scott to write.
- B. risk misrepresenting the full range of Zelda's contributions to literature.
- C. may draw inaccurate conclusions about how F. Scott and Zelda viewed each other's works.
- D. tend to read the works of F. Scott and Zelda in an overly autobiographical light.

ID: dd1757fd

Neural networks are computer models intended to reflect the organization of human brains and are often used in studies of brain function. According to an analysis of 11,000 such networks, Rylan Schaeffer and colleagues advise caution when drawing conclusions about brains from observations of neural networks. They found that when attempting to mimic grid cells (brain cells used in navigation), while 90% of the networks could accomplish navigation-related tasks, only about 10% of those exhibited any behaviors similar to those of grid cells. But even this approximation of grid-cell activity has less to do with similarity between the neural networks and biological brains than it does with the rules programmed into the networks.

Which finding, if true, would most directly support the claim in the underlined sentence?

- A. The rules that allow for networks to exhibit behaviors like those of grid cells have no equivalent in the function of biological brains.
- B. The networks that do not exhibit behaviors like those of grid cells were nonetheless programmed with rules that had proven useful in earlier neural-network studies.
- C. Neural networks can often accomplish tasks that biological brains do, but they are typically programmed with rules to model multiple types of brain cells simultaneously.
- D. Once a neural network is programmed, it is trained on certain tasks to see if it can independently arrive at processes that are similar to those performed by biological brains.

Seed Germination with and without H<sub>2</sub>S Treatment

In high concentrations, hydrogen sulfide (H<sub>2</sub>S) is typically toxic to many plants. Frederick D. Dooley and colleagues wanted to understand what effects low doses of H<sub>2</sub>S might have on plant growth. They treated bean, corn, wheat, and pea seeds with various concentrations (measured in micromoles per liter) of H<sub>2</sub>S and tracked the germination of those seeds along with the germination of untreated seeds. Treatment with particular concentrations of H<sub>2</sub>S was associated with accelerated germination: for example, \_\_\_\_\_

Which choice most effectively uses data from the graph to complete the statement?

- A. at 24 hours, less than 10% of seeds treated with H<sub>2</sub>S at a concentration of 10 micromoles per liter had germinated, whereas more than 90% of those seeds had germinated at 168 hours.
- B. at 48 hours, more than 70% of seeds treated with H<sub>2</sub>S at a concentration of 10 micromoles per liter had germinated, whereas only approximately 50% of untreated seeds had germinated.
- C. at 168 hours, more than 90% of seeds treated with H<sub>2</sub>S at concentrations of 10 or 500 micromoles per liter had germinated, whereas less than 70% of untreated seeds had germinated.
- D. at 48 hours, approximately 50% of seeds treated with H<sub>2</sub>S at a concentration of 10 micromoles per liter had germinated, whereas only approximately 30% of untreated seeds had germinated.

**ID: dd72993d**

Rivers rich in sediment appear yellow, while increases in red algae make rivers appear red. To track things like the sediment or algae content of large US rivers, John R. Gardner and colleagues used satellite data to determine the dominant visible wavelengths of light measured for various segments of these rivers. The researchers classified wavelengths of 495 nanometers (nm) and below as red, wavelengths between 495 and 560 nm as blue, and wavelengths of 560 nm and above as yellow. The researchers concluded that for the Missouri River, segments flowing into lakes tend to carry more sediment than those flowing out of lakes.

Which finding, if true, would most directly support the researchers' conclusion?

- A. The segments of the Missouri River that had higher levels of chlorophyll-a, which contributes to the green color of photosynthetic organisms, have dominant wavelengths of light between 490 and 560 nm.
- B. In lakes through which segments of the Missouri River pass, the dominant wavelength of light tended to be above 560 nm near the lakes' shores and below 560 nm in the lakes' centers.
- C. The majority of the segments of the Missouri River were found to have dominant wavelengths of light significantly higher than 560 nm.
- D. Segments of the Missouri River flowing into lakes typically had dominant wavelengths of light above 560 nm, while segments flowing out of lakes typically had dominant wavelengths below 560 nm.

**ID: 4603d1f7**

In their book *Smart Pricing*, Jagmohan Raju and Z. John Zhang consider musicians' use of the nontraditional "pay as you wish" pricing model. This model generally offers listeners the choice to pay more or less than a suggested price for a song or album—or even to pay nothing at all. As the authors note, that's the option most listeners chose for an album by the band Harvey Danger. Only about 1% opted to pay for the album, resulting in earnings below the band's expectations. But the authors also discuss musician Jane Siberry, who saw significant earnings from her "pay as you wish" online music store as a result of many listeners choosing to pay more than the store's suggested prices. Hence, the "pay as you wish" model may

Which choice most logically completes the text?

- A. prove financially successful for some musicians but disappointing for others.
- B. hold greater financial appeal for bands than for individual musicians.
- C. cause most musicians who use the model to lower the suggested prices of their songs and albums over time.
- D. more strongly reflect differences in certain musicians' popularity than traditional pricing models do.

**ID: e185a21f**

One theory behind human bipedalism speculates that it originated in a mostly ground-based ancestor that practiced four-legged "knuckle-walking," like chimpanzees and gorillas do today, and eventually evolved into moving upright on two legs. But recently, researchers observed orangutans, another relative of humans, standing on two legs on tree branches and using their arms for balance while they reached for fruits. These observations may suggest that \_\_\_\_\_

Which choice most logically completes the text?

- A. bipedalism evolved because it was advantageous to a tree-dwelling ancestor of humans.
- B. bipedalism must have evolved simultaneously with knuckle-walking and tree-climbing.
- C. moving between the ground and the trees would have been difficult without bipedalism.
- D. a knuckle-walking human ancestor could have easily moved bipedally in trees.

ID: 20000f5f

Arthur Conan Doyle's stories about detective Sherlock Holmes were published between 1887 and 1927. They have inspired countless successful adaptations, including comic strips, movies, and a television series *Sherlock Hound*, directed by Hayao Miyazaki, who is celebrated for his animated movies. Until 2014, these stories were copyrighted. The right to adapt was only available to those who could afford the copyright fee and gain approval from the strict copyright holders of Doyle's estate. Some journalists predict that the number of Sherlock Holmes adaptations is likely to increase since the end of copyright means that \_\_\_\_\_

Which choice most logically completes the text?

- A. Doyle's original stories will become hard to find.
- B. people will become more interested in detective stories than they were in the 1800s.
- C. producing adaptations will become easier and less expensive.
- D. the former copyright holders of Doyle's estate will return fees they collected.

ID: 25176ff8

"Mrs. Spring Fragrance" is a 1912 short story by Sui Sin Far. In the story, Mrs. Spring Fragrance, a Chinese immigrant living in Seattle, is traveling in California. In letters to her husband and friend, she demonstrates her concern for what's happening at her home in Seattle while she is away: \_\_\_\_\_

Which quotation from Mrs. Spring Fragrance's letters most effectively illustrates the claim?

- A. "My honorable cousin is preparing for the Fifth Moon Festival, and wishes me to compound for the occasion some American 'fudge,' for which delectable sweet, made by my clumsy hands, you have sometimes shown a slight prejudice."
- B. "Next week I accompany Ah Oi to the beautiful town of San José. There will we be met by the son of the illustrious Teacher."
- C. "Forget not to care for the cat, the birds, and the flowers. Do not eat too quickly nor fan too vigorously now that the weather is warming."
- D. "I am enjoying a most agreeable visit, and American friends, as also our own, strive benevolently for the accomplishment of my pleasure."

ID: 67b59a67

Plants like potatoes, tomatoes, and soybeans are susceptible to bacterial wilt disease caused by the bacteria *Ralstonia solanacearum*. A multinational team of scientists led by Zhong Wei studied whether other microbes in the soil might influence the degree to which plants are affected by the disease. The team sampled soil surrounding individual tomato plants over time and compared the results of plants that became diseased with those that remained healthy. They concluded that the presence of certain microbes in the soil might explain the difference between healthy and diseased plants.

Which finding, if true, would most directly support the team's conclusion?

- A. The soil surrounding healthy plants contained significantly higher concentrations of microbes known to inhibit *Ralstonia solanacearum* than the soil surrounding diseased plants did.
- B. The soil surrounding the plants contained high concentrations of *Ralstonia solanacearum* regardless of whether the plants were affected by wilt disease.
- C. The soil surrounding healthy plants tended to have significantly higher moisture levels than the soil surrounding diseased plants did.
- D. By the end of the experiment, over half the plants had been affected by wilt disease regardless of differences in the types and concentrations of microbes in the surrounding soil.

ID: c228bd45

The following text is adapted from Edith Nesbit's 1906 novel *The Railway Children*.

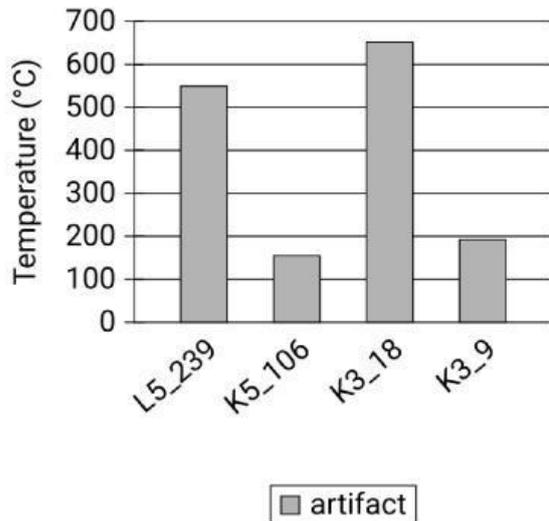
Mother did not spend all her time in paying dull [visits] to dull ladies, and sitting dully at home waiting for dull ladies to pay [visits] to her. She was almost always there, ready to play with the children, and read to them, and help them to do their home-lessons. Besides this she used to write stories for them while they were at school, and read them aloud after tea, and she always made up funny pieces of poetry for their birthdays and for other great occasions.

According to the text, what is true about Mother?

- A. She wishes that more ladies would visit her.
- B. Birthdays are her favorite special occasion.
- C. She creates stories and poems for her children.
- D. Reading to her children is her favorite activity.

ID: 7edfb2c5

Estimated Temperatures to which Evron Quarry Artifacts Were Exposed



Flint artifacts dating to 800,000 to 1,000,000 years ago have been recovered from the Evron Quarry in Israel. Likely created by the hominin *Homo erectus*, the artifacts have no visual features suggesting that they were exposed to fire, leading some scholars to conclude that these hominins had not acquired control of fire. But Zane Stepka and colleagues recently used a new method to determine whether these artifacts had been exposed to temperatures above 400°C (the typical temperature campfires reach) and concluded that the hominins who inhabited the site may have had control of fire.

Which choice best describes data in the graph that support the team's conclusion?

- A. Artifacts K5\_106 and K3\_9 were exposed to temperatures above 400°C.
- B. Artifacts L5\_239 and K3\_18 were exposed to temperatures of approximately 550°C and 650°C, respectively.
- C. All of the artifacts were exposed to temperatures above 100°C.
- D. Artifact K3\_9 was exposed to a higher temperature than was artifact K5\_106.