Reading and Writing Module 2

Juan Rojo, a physicist from the Netherlands, and his team have discovered that protons may be composed of a charm quark and its antimatter form, an anticharm. Originally, atoms were believed to _____ two up quarks and a down quark.

1. **Which choice completes the text with the most logical and precise word or phrase?**

A. avoid
B. destroy
C. create
D. contain

German artist Natascha Sadr Haghighian is famous for working under different identities and providing conflicting information about where and when she was born and where she currently lives. She maintains this _____ by wearing a mask and using pseudonyms for her major public appearances.

2. **Which choice completes the text with the most logical and precise word or phrase?**

A. anonymity
B. individuality
C. invisibility
D. protection

A 2022 study aimed to identify ways to make plastics, which are notoriously difficult to recycle due to their stable covalent bonds, more eco-friendly. The researchers found that using liquid-liquid phase separation could create a _____ type of plastic with adhesive and recyclable properties that may allow plastics to become more biodegradable.

3. **Which choice completes the text with the most logical and precise word or phrase?**

A. simple
B. refreshing
C. complex
D. novel

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The Poeh Cultural center collects and displays artifacts of the Tewa people in an attempt to reclaim their history. Some of these artifacts were gathered up in the nineteenth century by scientists and historians, who removed these relics from their respective Tewa villages in the erroneous belief that American indigenous cultures such as the Tewa were _____ decay. In reality, the Tewa culture never entered such a decline.

4. Which choice completes the text with the most logical and precise word or phrase?

A. responsible for
B. delayed by
C. working against
D. destined to

Dakota Nation member Philip J. Deloria is an award-winning author of books outlining the history and experience of Native Americans within a non-Native society. Deloria is _____ source of information on this topic, as both of his parents also worked on research regarding the lives of Native American citizens.

5. Which choice completes the text with the most logical and precise word or phrase?

A. a qualified
B. a unique
C. a questionable
D. an uncommon

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Accreted, or accumulated, ice preserves the characteristics of the water source from which it froze. Researchers at the Geophysical Institute in Norway are studying two types of accreted ice: frazil and congelation. Frazil ice forms when water solidifies inside of a super cooled water column, while congelation ice forms when water re-freezes beneath an existing ice cover, or ice sheet. The structure of frazil ice is elongated to _____ how water once flowed inside the column, while congelation ice appears smooth and circular, much like the ice sheet from which it formed.

6. Which choice completes the text with the most logical and precise word or phrase?

A. mimic
B. disguise
C. instruct
D. counter

The following text is from Charlotte Brontë's 1849 novel *Shirley, A Tale.*
The victims met these attacks each in his own way: Mr. Donne with a stilted self-complacency and half-sullen phlegm, the sole props of his otherwise somewhat rickety dignity; Mr. Sweeting with the indifference of a light, easy disposition, which never professed to have any dignity to maintain.

7. As used in the text, what does the word "phlegm" most nearly mean?

A. Abhorrence
B. Mucus
C. Complexity
D. Composure

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Text 1

Supervolcanoes occur when magma rises to the surface of the earth but doesn't break through, causing a build-up of pressure that results in a super-eruption. When volcanoes go through these super-eruptions, they expel crystals made of rocks composed of solidified lava. These crystals are developed at temperatures above the melting points of rock and form relatively rapidly before being ejected in an eruption extremely quickly. These super-eruptions can trigger ice ages and mass extinctions.

Text 2

While the violent nature of supereruptions suggests a rapid process from beginning to end, a team out of Bristol's School of Earth Sciences used modeling techniques to show that while the crystals from supervolcanoes are expelled extremely rapidly during a super-eruption, they are formed over a long period of time. This long time interval accounts for the infrequency of supervolcano eruptions, as they take millions of years to form. The crystals are stored at low temperatures until the actual eruption begins; they spend little time at high temperatures.

8. Based on the texts, how would the author of Text 2 most likely respond to the underlined claim in Text 1?

A. By stating that while the claim appears logical, new evidence by the team out of Bristol's School of Earth Sciences provides evidence supporting a new theory of crystal formation and storage

B. By generally approving of the claim but stressing that the crystals form more rapidly than initially thought

C. By emphasizing that all aspects of the claim surrounding the formation of supervolcanoes' crystals and their eruption are incorrect

D. By criticizing the claim for being based on the idea that supervolcanoes are caused by a build-up of pressure from trapped magma

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When Isaac Newton introduced his theory of gravity, it was almost universally accurate, but there were some discrepancies between the theory and the behavior of matter in space. For example, the orbits of some planets and stars in spiral galaxies do not follow the patterns predicted by his theory. Centuries later, Albert Einstein developed the theory of relativity to account for these discrepancies; relativity was able to accurately predict almost every phenomenon that conflicted with Newton's theory. Despite this, Newton's theory remains widely cited, as it was vital for understanding the gravitation properties of the planet Earth.

9. According to the text, what was the main reason for the development of Einstein's theory?

A. Planets' unique orbits around stars
B. Accurate predictions by Newton
C. Discrepancies in Newton's theory
D. Stars in spiral galaxies

War and Peace is an 1865 novel by Russian author Leo Tolstoy. The novel states that an individual's convictions regarding an emotion influence the individual's ability to experience that emotion: _____

10. Which quotation from *War and Peace* most effectively illustrates the claim?

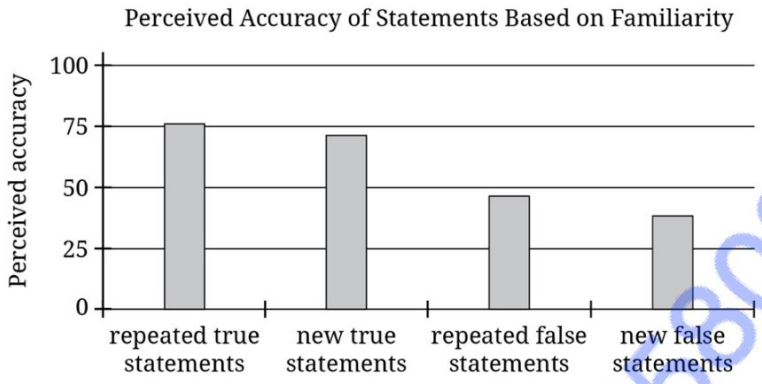
A. "If we admit that human life can be ruled by reason, then all possibility of life is destroyed."

B. "A man on a thousand-mile walk has to forget his goal and say to himself every morning, 'Today I'm going to cover twenty-five miles and then rest up and sleep.'"

C. "Pierre was right when he said that one must believe in the possibility of happiness in order to be happy, and I now believe in it."

D. "It's not given to people to judge what's right or wrong. People have eternally been mistaken and will be mistaken, and in nothing more than in what they consider right and wrong."

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When false statements are spread on social media, it can have negative impacts in a variety of ways. Researchers investigated how false statements are spread to help identify strategies to prevent such a spread. Participants were more likely to share information with others if they had encountered the information in a previous situation. The repeated false statements had a higher assumed accuracy by readers than that of _____

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

A. all other types of statements.

B. new false statements.

C. new true statements.

D. repeated true statements.

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A team at the University of Queensland researched clownfish and how they recognize other individuals through their ability to see UV coloring in orange, white, and black patterns. The team facilitated conflicts between clownfish of different sizes—the larger fish always won the battles while the smaller fish adopted a side-lying position. When artificial UV light was applied to cancel out the natural coloring pattern on the smaller fish, the larger fish no longer challenged the smaller fish. The scientists determined that that smaller clownfish have more UV white and orange coloring than larger fish, which, according to the team, indicates their submissiveness to the larger clownfish.

12. Which finding, if true, would most strongly support the team's conclusion?

A. Smaller fish with more natural UV white and orange coloring were more likely to adopt a side-lying position and more likely to challenge larger fish when no extra UV light was present.

B. When an artificial pattern was painted on larger fish to increase the percentage of their UV white and orange coloring, they were challenged by the smaller fish.

C. Smaller clownfish are more likely to mate with multiple partners in one mating season than larger clownfish are.

D. When similarly-sized clownfish were engaged in a conflict, the one with a larger amount of UV white and orange coloring in its pattern tended to win.

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One of the biggest challenges for potentially sustaining life on Mars is the lack of oxygen on the planet. In 2021, NASA's rover *Perseverence* brought the Mars Oxygen In-Situ Resource Utilization Experiment (MOXIE) to Mars and reported that the technology was able to create oxygen at 6 grams per hour, levels similar to those of a typical tree on Earth. The output was consistent in different seasons and during day and night, but it has not yet been tested at dawn or dusk when temperatures change rapidly. Researchers believe this technology could allow humans to potentially visit Mars much sooner than initially thought.

13. Which finding from the experiment, if true, would most directly weaken the researchers' belief?

A. The MOXIE only works at a small-scale and becomes less efficient when replicated in larger formats.

B. The MOXIE requires a certain number of human technicians in order to be operated.

C. The MOXIE converts carbon dioxide already present in Mars' atmosphere into oxygen gas.

D. The MOXIE is found to generate a substantial amount of heat during its operation.

Sponges are some of the oldest organisms on the planet, and they play a crucial role in nutrient cycling. They must utilize some process to avoid clogging their natural filtering system, but this process has not been studied before. Niklas Kornder and colleagues studied video footage of the Caribbean tube sponge *Aplysina archeri* and identified a mechanism of particle ejection that uses mucus to trap particles within the sponge and eject them through pores by surface contractions, similar to a sneeze. Therefore, the scientists hypothesize that _____

14. Which choice most logically completes the text?

A. all species of sponges must use a similar mechanism to eject waste.

B. the sponge is continuously expelling particles to remove excess solid waste from its insides.

C. ejecting the particles efficiently removes debris that would otherwise choke the sponges' filter systems with solid waste.

D. the expelled waste contains toxins that would be harmful to the sponge if allowed to fester within the sponge.

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Soil compaction is a serious impediment to plant growth as pore space in the soil is necessary for gas, water, and nutrient exchange through the roots. Compaction can be caused by the weight of humans, animals, or machinery. Tilling the soil with a plow or machinery has long been the predominant means of addressing soil compaction in almost all large-scale agricultural systems. However, tilling itself is damaging to healthy soil structure that develops in undisturbed ground. Therefore, advocates have urged greater use of no-till methods, particularly in small-scale systems with soil types most capable of recovering from compaction naturally. This recommendation implies that tilling _____

15. Which choice most logically completes the text?

A. has not been traditionally used in small-scale agricultural systems.

B. will likely remain the primary means of addressing soil compaction in most large-scale agricultural systems.

C. will cease to be the predominant means of addressing soil compaction if the no-till advocates' recommendations are heeded.

D. does not damage soil structure in those soils that are least capable of recovering from compaction naturally.

Hundreds of *quipu* (devices made of a series of knotted strings) have been found in the Andean region of South America, but the secrets of their interpretation have been lost since the fall of the Inca Empire. Some researchers believe that the patterns and colors of the knots represent a unique writing system, while others argue that _____ instead used to record numerical data.

16. Which choice completes the text so that it conforms to the conventions of Standard English?

A. one was
B. they were
C. he or she was
D. it was

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Living fossils have often puzzled scientists, as they are organisms which closely resemble species that are thought to be _____ example, the horseshoe crab is considered a living fossil as it is cosmetically identical to fossils from over 440 million years ago.

17. Which choice completes the text so that it conforms to the conventions of Standard English?

A. extinct and for
B. extinct for
C. extinct, for
D. extinct. For

Archaeology dates back as far as the time of Ancient Mesopotamia, when a Babylonian king _____ an expedition to excavate a temple that had been built more than 1,500 years prior.

18. Which choice completes the text so that it conforms to the conventions of Standard English?

A. is leading
B. has led
C. led
D. leads

The city of Palmyra, an ancient city located in modern Syria, grew wealthy by trading along the Silk Road and _____ the ability to build large structures, such as tower tombs, the Great Colonnade, and the Temple of Bel.

19. Which choice completes the text so that it conforms to the conventions of Standard English?

A. to gain
B. having gained
C. gaining
D. gained

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Hangul, the writing system used to write the Korean language, was created in 1443 by King Sejong and was declared Korea's official alphabet three years later. The new alphabet was part of a campaign for universal literacy, and _____ letters were designed to mimic the shapes of the mouth and tongue used to pronounce them in order to make the letters easier to memorize.

20. Which choice completes the text so that it conforms to the conventions of Standard English?

A. our
B. one's
C. their
D. its

American astronomer Henrietta Leavitt developed a mathematical method to measure the distance to the Small and Large Magellanic Clouds, which showed that these _____ were far beyond the stars in our own Milky Way.

21. Which choice completes the text so that it conforms to the conventions of Standard English?

A. galaxies physical locations
B. galaxies' physical locations
C. galaxies' physical locations'
D. galaxy's physical location's

Insulin is a naturally occurring peptide that is used as a medication to treat diabetes. At first, medical insulin was isolated from animals, but since 1982, genetically engineered bacteria _____ used to make the peptide. A recent study shows that genetically modified safflower plants can also be used to synthesize insulin, potentially at a lower cost compared to current methods.

22. Which choice completes the text so that it conforms to the conventions of Standard English?

A. were
B. will be
C. had been
D. have been

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Cherokee Nation member Bill Glass Jr. began college as a computer science major, but after taking a few art classes, he realized his passion for ceramics. His first job after graduating college was as the art program coordinator for the Cherokee Nation. _____ Glass became a full-time artist and was eventually named a Cherokee National Treasure, among other accolades.

23. Which choice completes the text with the most logical transition?

A. In conclusion,
B. Nevertheless,
C. Later,
D. Similarly,

As a language activist, Irma Alvarez Ccoscco has developed software and technology using Indigenous languages in Peru and the US. Her work has contributed to many different areas; _____ she has recorded podcasts for Indigenous communities in New York and developed computer games and learning platforms used by elementary schools.

24. Which choice completes the text with the most logical transition?

A. in contrast,
B. for example,
C. therefore,
D. today,

A new field, "necrobotics," is allowing scientists to explore the mechanics of spider movement. Researchers were able to control movement in a dead wolf spider by pushing liquid into a spider's leg with a syringe, similar to the function of a hydraulic machine. This advancement could help engineers develop more efficient mechanical robots using similar technology. _____ robots made from actual spider corpses are unlikely to gain popularity, as the organic bodies will still break down over time.

25. Which choice completes the text with the most logical transition?

A. However,
B. Consequently,
C. Subsequently,
D. In contrast,

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While researching a topic, a student has taken the following notes:

- Tashirojima is an island off the coast of Japan.
- The island has a small population of people.
- It has a large population of stray cats.
- People on the island believe that feeding the cats will bring good fortune and wealth.
- The island is known as "Cat Island."

26. The student wants to emphasize how Tashirojima got the name "Cat Island." Which choice most effectively uses relevant information from the notes to accomplish this goal?

A. Both people and cats live in Tashirojima.

B. Some people believe that feeding cats will bring good fortune and wealth.

C. "Cat Island" is a small island off the coast of Japan.

D. Tashirojima is known as "Cat Island" because it has a large population of stray cats.

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While researching a topic, a student has taken the following notes:

- Dorothy Andersen was an American pediatrician, researcher, and pathologist.
- She attended Johns Hopkins School of Medicine and studied endocrinology at Columbia University.
- In 1938, she published her research on a disease she named "cystic fibrosis."
- She was the first person to identify the disease.
- In 1942, she, along with her colleague Paul di Sant'Agnese, created the first test to diagnose cystic fibrosis.

27. The student wants to emphasize the significance of Andersen's contributions to medicine. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A. Dorothy Andersen attended Johns Hopkins School of Medicine and Columbia University before researching cystic fibrosis.

B. Dorothy Andersen and Paul di Sant'Agnese created the first diagnostic test for cystic fibrosis, a disease Andersen published research on in 1938.

C. Research on cystic fibrosis was published in 1938 by pediatrician Dorothy Andersen.

D. American pediatrician Dorothy Andersen was the first person to identify the disease cystic fibrosis and, along with her colleague, created the first test to diagnose the disease.

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