

Unit 1-4 Test Corrections

**Due Date: November 9th**

**Directions: Pick the correct answer and EXPLAIN why that is the correct answer below it!**

1. Which of the following statements best explains why it is warmer at the equator than at the North Pole?
  - a. The equator has a larger area than the North Pole.
  - b. The equator is closer to the Sun than the North Pole
  - c. The equator receives more direct sunlight than the North Pole.
  - d. The equator has more hours of daylight per year than the North Pole.

Explanation:

2. How does the tilt of the Earth's axis affect the seasons?
  - a. by changing the amount of direct solar energy reaching the surface of Earth
  - b. by influencing the rate of chemical reactions occurring in the atmosphere
  - c. by deflecting the harmful rays of radiation emitted by the sun
  - d. by changing the speed of the rotation of Earth

Explanation:

3. A low tide and a high tide occur in the oceans two times each day. Which factor has the greatest effect on the size of the tides?
  - a. air pressure differences
  - b. gravitational pull from the Sun
  - c. seasonal temperature variations
  - d. gravitational pull from the Moon

Explanation:

4. When it is summer in the northern hemisphere of Earth, it is winter in the southern hemisphere. Which statement explains this fact?
- a. The Sun gives off more heat in the summer and less heat in the winter.
  - b. Earth is farther from the Sun in winter and closer to the Sun in summer.
  - c. With more clouds in the winter, less sunlight can reach the surface of Earth.
  - d. Since Earth is tilted on its axis, heat from the Sun gets distributed unequally.

**Explanation:**

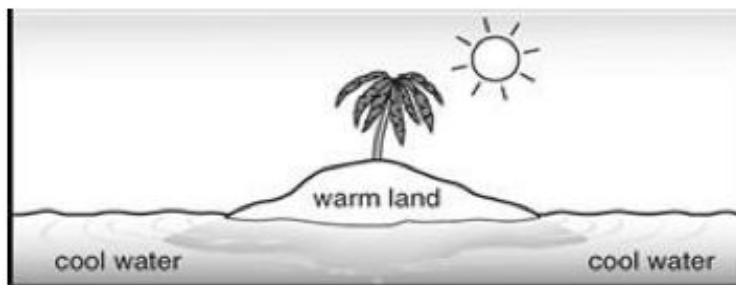
5. **The diagram to the right shows the gases that enter and leave a plant during photosynthesis. Which gases do arrows 1 and 2 represent?**

- a. Arrow 1 is nitrogen and Arrow 2 is oxygen.
- b. Arrow 1 is oxygen and Arrow 2 is nitrogen
- c. Arrow 1 is oxygen and Arrow 2 is carbon dioxide.
- d. Arrow 1 is carbon dioxide and Arrow 2 is oxygen.



**Explanation:**

6. **During the day the island heats faster than the water. This uneven heating creates a pressure gradient and causes the wind to blow. Which of these describes how the wind blows?**



- A. The wind blows toward the warm land from over the cool water.
- B. The wind blows away from the warm land over the cool water.
- C. The wind always blows from the east over water.
- D. The wind direction never depends on the temperature of the land or water.

**Explanation:**

7. What happens to a moist air mass as it moves upward in the atmosphere?

- a. It becomes warmer and forms clouds.
- b. It becomes cooler and forms clouds.
- c. Its temperature remains the same.

Explanation:

8. When cold air in the winter passes over large bodies of warm water, moisture is picked up. As the air rises rapidly over land,

- A. lightning generally occurs.
- B. precipitation generally occurs.
- C. cold fronts become warm fronts.
- D. hurricanes are formed

Explanation:

9. Which of the following factors would most likely cause a hurricane to decrease in strength?

- a. Staying over a warm body of water for a long time
- b. Increasing the number of large clouds
- c. Moving over a continent
- d. Moving towards tropical waters

Explanation:

10. An area is described as having mild temperatures in the summer and being cool and rainy in the winter. On a day in May, the area experienced snow. Which best describes this day in terms of weather and climate?

- a. The weather was different from the normal climate for the area.
- B. The climate was different from the normal weather for the area.
- C. Weather and climate were different from the normal properties for the area.
- D. Climate and weather were changing into a new set of normal properties for the area.

Explanation:

11. In the late summer 1991 Mt. Pinatubo, a volcano in the Philippines, exploded and sent thousands of tons of volcanic dust into the atmosphere. Scientists have suggested that Earth's average monthly temperatures for many months after the explosion were

- A. Cooler than normal due to the reflection of sunlight by volcanic dust
- B. Cooler than normal due to the reflection of a hole in the ozone layer by the explosion
- C. Warmer than normal due to the heat released into the atmosphere by the volcanic explosion
- D. Warmer than normal due to the heat spread by convection of the volcanic dust.

Explanation:

12. Scientists use ice cores to identify and explain previous climatic trends. By correlating climatic conditions recorded in the ice, with solid, non-snow particles also found in the ice, scientists can help to predict the climatic impact of which phenomenon?

- A. atmospheric carbon dioxide concentration changes
- B. radioactive decay rate changes in the outer core
- C. volcanic eruptions
- D. magnetic pole reversals

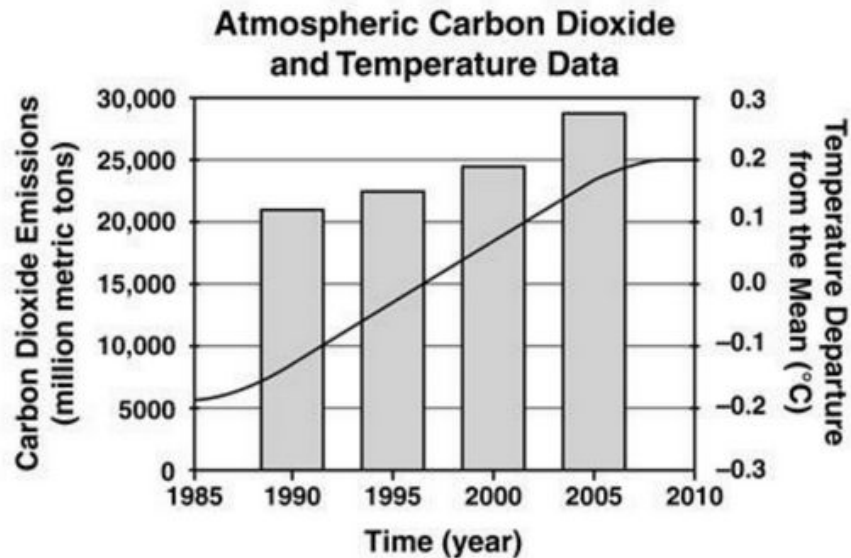
Explanation:

13. Temperature affects the development of sea turtle eggs. Eggs that are incubated at warmer temperatures are more likely to become females. Eggs incubated at cooler temperatures are more likely to become males. How would higher atmospheric carbon dioxide concentrations most likely affect sea turtle populations?

- A. Earth's climate would be warmer, so the percentage of female turtles would increase.
- B. Earth's climate would be cooler, so the percentage of female turtles would increase.
- C. Earth's climate would be warmer, so the percentage of female turtles would decrease.
- D. Earth's climate would be cooler, so the percentage of female turtles would decrease.

Explanation:

14. The graph below shows global carbon dioxide emissions and how temperatures have varied from the mean temperature.



Which conclusion is scientifically valid and supported by the empirical evidence reported in the graph?

- a. The increase in mean temperature directly resulted in an increase of carbon dioxide emissions.
- b. The increase in mean temperature directly resulted in a decrease of carbon dioxide emissions.
- c. The increase in carbon dioxide emissions directly resulted in an increase of mean temperature.
- d. The increase in carbon dioxide emissions directly resulted in a decrease of mean temperature.

Explanation:

15. What are the characteristics of maritime polar air masses?

- a. Cool and dry
- b. warm and dry
- c. cool and humid
- d. warm and humid

Explanation:

16. The Mariana Trench is the deepest ocean trench on Earth. This trench occurs at a plate boundary where \_\_\_\_\_.

- A. One plate is sliding past another.
- B. One plate is being forced beneath another.
- C. Two plates are colliding into each other.
- D. Two plates are pulling apart from each other.

Explanation:

17. What happens when the oceanic crust is forced beneath the continental crust?

- A. Convergent subduction zone creating a trench
- B. Convergent boundary zone creating a rift valley
- C. Divergent boundary zone creating a mountain
- D. Divergent boundary zone creating a volcanic arc

Explanation:

19. Which structure can form as a result of a divergent plate boundary?

- A. continental volcanic arc, due to the collision of two plates
- B. continental mountain, due to the collision of two plates
- C. A mid-ocean ridge, due to the separation of two plates
- D. An ocean trench, due to the separation of two plates

Explanation:

20. Which would produce the most severe earthquake damage along the surface of Earth?

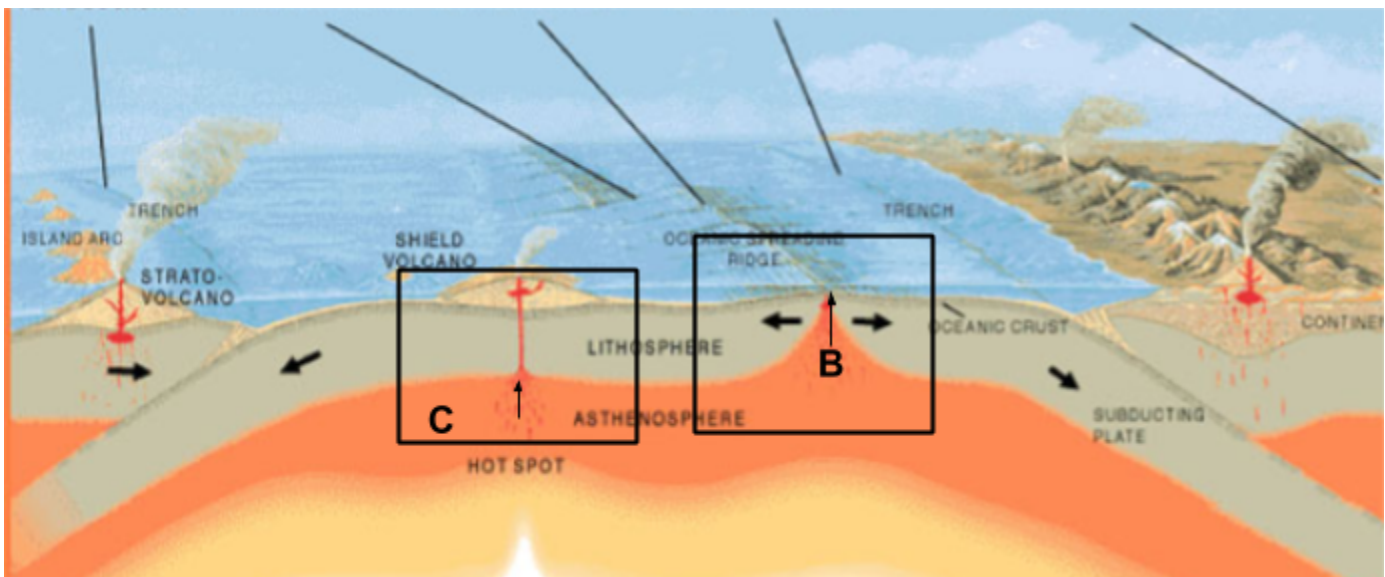
- A. An earthquake with a deep focus and a magnitude of 2.5
- B. An earthquake with a shallow focus and a magnitude of 2.5
- C. An earthquake with a deep focus and a magnitude of 4.5
- D. An earthquake with a shallow focus and a magnitude of 4.5

Explanation:

21. Which of these statements best describes the rock cycle?

- A. Layers of rock are broken by faults.
- B. Rocks in the ocean become rocks on land.
- C. Lunar rocks change into terrestrial rocks
- D. New rocks form from older rocks

Explanation:



22. What happens when the oceanic crust is forced beneath the continental crust?

- A. Convergent subduction zone creating a trench
- B. Convergent boundary zone creating a rift valley
- C. Divergent boundary zone creating a mountain
- D. Divergent boundary zone creating a volcanic arc

Explanation:

23. What type of plates are moving away from each other at boundary B?

- a. Two continental crusts
- b. Two oceanic crusts
- c. One oceanic and one continental crust
- d. Two convergent plates

Explanation:

24. What is a real life example of plate boundary C?

- a. Himalayan Mountains
- b. Hawaii
- c. Marianas Trench
- d. African Rift Valley

Explanation:

25.. What geological event will most likely occur at boundary C?

- a. A subduction zone
- b. A rift valley
- c. A volcano
- d. An earthquake

Explanation: