SXO1 Integrated Physical Sciences Version 1

Section: Science & Statistics • **Total Questions:** 10 • **Format:** Verified Q&A

1. A student wants to know whether certain types and colors of siding absorb more heat from the sun. The student builds several models of the same size using different siding materials and different colors. Each model is positioned to have the same angle with the sun. The student then records the temperature of each model at various points throughout the day. What is a control variable in this experiment?

(A) The size of the model
(B) The surface temperature
(C) The siding color
(D) The siding material

2. When liquid gasoline is burned, the oxygen in the air combined with the octane in the gasoline produces gaseous carbon dioxide and water vapor. Which statement about this reaction is correct?

(A) The total mass of the products is equal to the total mass of the reactants.
(B) The total amount of energy slightly decreases during the reaction.
(C) The molecules remain the same, but the state of matter changes.
(D) The volume of the reactants is equal to the volume of the products.

3. A runner jogs and slows to a stop after crossing the finish line. How are speed and velocity affected?

(A) Velocity changes, but speed does not.
(B) Both velocity and speed change.
(C) Neither speed nor velocity changes.
(D) Speed changes, but velocity does not.

4. Why does the Southern Hemisphere receive varying amounts of sunlight throughout the year?

(A) Earth's tilt on its axis
(B) Earth's distance from the sun
(C) Earth's elliptical orbit
(D) Earth's rotational speed

5. What is one example of matter?

(A) The heat from a fire

(B) The air in a tire

(C) The force of gravity

(D) The sound from an airplane

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6. What is the meaning of "–" when writing Cl??

(A) The atom has gained a proton and now has a net positive charge.

(B) The atom has lost an electron and now has a net positive charge.

(C) The atom has gained an electron and now has a net negative charge.

(D) The atom has lost a proton and now has a net negative charge.

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7. What is the layer of Earth that contains all known living creatures?

(A) Inner core

(B) Crust

(C) Outer core

(D) Mantle

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8. What commonly results after a low-pressure system develops?

(A) Widespread tornadoes

(B) Rapid humidity changes

(C) Rain and large hail

(D) Cloud formation

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9. Which type of wave has the shortest wavelengths?

(A) Visible light

(B) Gamma rays

(C) Ultraviolet radiation

(D) Infrared radiation

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10. A chemist conducted an experiment in which they observed a chemical reaction under various temperatures. The chemist used the same substances in the same amounts for each reaction and only varied the heat applied for each reaction. The chemist recorded the duration and primary color of each reaction. What is a control variable in this experiment?

(A) The primary reaction color

(B) The amount of heat applied

(C) The duration of each reaction

(D) The amount of each substance