

Biology and Chemistry Fundamentals

Science · Answer Key · 12 Questions

1. What concept describes when a population of organisms is divided, leading to unique characteristics over time?

- A) Heredity
- B) Isolation**
- C) Selection
- D) Variation

2. Which evidence provides preserved remains or traces of past organisms?

- A) Biography
- B) Comparative morphology
- C) Embryology
- D) Fossils**

3. Why is variation essential for evolution?

- A) It creates identical organisms
- B) It causes uniform traits
- C) It prevents adaptation
- D) It provides differences that aid survival**

4. What is the term for trait differences among individuals of the same species?

- A) Adaptation
- B) Heredity
- C) Isolation
- D) Variation**

5. Which term defines the transmission of traits from parents to offspring?

- A) Heredity**
- B) Isolation
- C) Selection
- D) Variation

6. What does vigorous bubbling during a chemical reaction usually indicate?

- A) Gas production**
- B) Boiling
- C) Freezing
- D) Evaporation

7. Why is the breakdown of limestone (CaCO_3) into CaO and CO_2 a decomposition reaction?

A) One compound breaks into simpler substances

B) One element replaces another

C) Two compounds exchange ions

D) Two substances form one product

8. What type of reaction is $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$?

A) Combination

B) Decomposition

C) Double replacement

D) Single replacement

9. Which classification is incorrect?

A) $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$: Combination

B) $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$: Decomposition

C) $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$: Double Replacement

D) $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$: Double Replacement

10. What is the correct chemical equation for 'Hydrogen gas reacts with oxygen gas to produce water'?

A) $\text{H} + \text{O} \rightarrow \text{H}_2\text{O}$

B) $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$

C) $\text{H}_2 + \text{O} \rightarrow \text{H}_2\text{O}_2$

D) $\text{H}_2\text{O} \rightarrow \text{H}_2 + \text{O}_2$

11. Which equation correctly balances $\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$ according to the Law of Conservation of Mass?

A) $\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$

B) $2\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$

C) $4\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3$

D) $\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3$

12. What happens to atoms during a chemical reaction?

A) Atoms are destroyed

B) Atoms disappear

C) Atoms change elements

D) Atoms are rearranged