Chemical Change

A. Choose the Correct Answer

1. What is a chemical change?

A) A change that is easily reversible

B) A change that does not alter the substance's composition

C) A change that forms new substances with different properties

D) A temporary change in shape or size

2. Which of the following is an example of a chemical change?

A) Melting of ice

B) Rusting of iron

C) Boiling of water

D) Breaking of glass

3. What happens to the molecular composition of a substance during a chemical change?

A) It remains the same

B) It changes, forming new substances

C) The molecules rearrange but no new substances form

D) Only the physical appearance changes

B. Fill in the Blanks

1. A chemical change results in the formation of a _____ substance.
2. The process of burning wood is an example of a _____ reaction.
3. A color change, gas formation, or release of heat are indicators of a _____ change.

C. Case Study

A student conducted an experiment to study chemical changes. He mixed vinegar with baking soda and observed fizzing and gas bubbles. In another test, he burned a piece of paper and noticed it turned into ash with smoke and heat. He also dissolved sugar in water, noticing that the sugar disappeared but could be retrieved by evaporation.

Case Study Questions:

1. Which of the experiments demonstrated a chemical change? Why?
2. What gas is produced when vinegar reacts with baking soda?

3. Why is burning paper considered a chemical change?
4. Which experiment represented a physical change, and why?

D. Short Answer Questions

1. What are two characteristics of a chemical change?
2. How is rusting of iron an example of a chemical change?
3. Why is cooking food considered a chemical change?

E. Long Answer Questions

1. Explain how a chemical change is different from a physical change with examples.
2. Describe the role of chemical changes in daily life with at least three examples.
3. Discuss the effects of chemical changes on the environment, such as pollution and corrosion.