Lesson: Decomposition Reaction	Name:
Teacher:	Date:

Yeast and Hydrogen Peroxide

Instructions: Read the experiment carefully and answer the following questions. Write your answers on the lines provided.

Multiple Choice

1. What is the main function of yeast in this experiment?
   a) Produces hydrogen peroxide
   b) Acts as a catalyst to break down hydrogen peroxide
   c) Creates foam on its own
   d) Colors the solution

Answer: _____

2. Hydrogen peroxide breaks down into:
   a) Water and carbon dioxide
   b) Water and oxygen
   c) Oxygen and nitrogen
   d) Carbon dioxide and oxygen

Answer: _____

3. The reaction is called **exothermic** because:
   a) It absorbs heat
   b) It produces heat
   c) It changes color
   d) It releases sound

Answer: _____

True or False

4. The bubbles in the foam are made of oxygen gas.
   Answer: _____

5. Dish soap is necessary to start the chemical reaction.
   Answer: _____
6. Using cold water for the yeast speeds up the reaction.
   Answer: _____

Short Answer

7. What is a catalyst?
   Answer: _____
8. Describe what happens to hydrogen peroxide when yeast is added.
   Answer: _____
9. Why does the bottle feel warm during the reaction?
   Answer: _____
10. What role does dish soap play in the experiment?
    Answer: _____

Observation-Based Questions

11. Draw or describe the foam that forms in your experiment:

    Answer: _____

12. How does changing the amount of yeast affect the reaction?

    Answer: _____

13. What would happen if you skipped the dish soap?

    Answer: _____

Critical Thinking / Reflection

14. How is this reaction similar to processes that happen in your body?

    Answer: _____

15. Explain why this experiment is considered a chemical reaction.

    Answer: _____

Answer Key

Multiple Choice

1. **b)** Acts as a catalyst to break down hydrogen peroxide
2. **b)** Water and oxygen
3. **b)** It produces heat

True or False

4. **True** – The bubbles in the foam are oxygen gas.
5. **False** – Dish soap is not needed to start the reaction; it helps trap the oxygen to make foam.
6. **False** – Cold water slows down yeast activity; warm water speeds it up.

Short Answer

7. **Catalyst:** A substance that speeds up a chemical reaction without being used up.
8. **Hydrogen peroxide breaks down into water and oxygen rapidly when yeast is added because the enzyme catalase in yeast acts as a catalyst.**
9. **The bottle feels warm because the reaction releases energy as heat (exothermic reaction).**
10. **Dish soap traps the oxygen bubbles, creating foam.**

Observation-Based Questions

11. **Expected Answer:** Foam rises out of the bottle, creating a "tower" of bubbles. Students can draw or describe it.
12. **More yeast:** Faster reaction and more foam.
    Less yeast: Slower reaction and less foam.
13. **Without dish soap:** Oxygen gas will form, but there will be no foam.

Critical Thinking / Reflection

14. **Similar in body:** Cells produce hydrogen peroxide as a byproduct, and catalase breaks it down safely.
15. **Chemical reaction:** Because new substances (water and oxygen) are formed and energy is released as heat.