

SECTION
3

Reinforcement

Classifying Chemical Reactions

Directions: Match the types of chemical reactions in Column II with the description in Column I. Write the letter of the correct reaction in the blank at the left.

Column I

- _____ 1. A precipitate, water, or a gas forms when two ionic compounds in solution are combined.
- _____ 2. Two or more substances combine to form another substance.
- _____ 3. One element replaces another in a compound.
- _____ 4. One substance breaks down into two or more substances.
- _____ 5. A type of synthesis reaction that produces heat and light.

Column II

- a. synthesis reaction
- b. decomposition reaction
- c. combustion
- d. single-displacement reaction
- e. double-displacement reaction

Directions: Write the name of the type of chemical reaction in the space provided.

- _____ 6. $4\text{Fe}(s) + 3\text{O}_2(g) \rightarrow 2\text{Fe}_2\text{O}_3(s)$
- _____ 7. $\text{Zn}_2(s) + 2\text{HCl}(aq) \rightarrow \text{ZnCl}_2(aq) + \text{H}_2(g)$
- _____ 8. $\text{MgCO}_3(aq) + 2\text{HCl}(aq) \rightarrow \text{MgCl}_2(aq) + \text{H}_2\text{O}(l) + \text{CO}_2(g)$
- _____ 9. $\text{NiCl}_2(s) \rightarrow \text{Ni}(s) + \text{Cl}_2(g)$
- _____ 10. $4\text{C}(s) + 6\text{H}_2(g) + \text{O}_2(g) \rightarrow 2\text{C}_2\text{H}_6\text{O}(s)$
- _____ 11. $\text{C}_{12}\text{H}_{22}\text{O}_{11}(s) \rightarrow 12\text{C}(s) + 11\text{H}_2\text{O}(g)$
- _____ 12. $2\text{LiI}(aq) + \text{Pb}(\text{NO}_3)_2(aq) \rightarrow 2\text{LiNO}_3(aq) + \text{PbI}_2(s)$
- _____ 13. $\text{CdCO}_3(s) \rightarrow \text{CdO}(s) + \text{CO}_2(g)$
- _____ 14. $\text{Cl}_2(g) + 2\text{KBr}(aq) \rightarrow 2\text{KCl}(aq) + \text{Br}_2(g)$
- _____ 15. $\text{BaCl}_2(aq) + 2\text{KIO}_3(aq) \rightarrow \text{Ba}(\text{IO}_3)_2(s) + 2\text{KCl}(aq)$
- _____ 16. $2\text{Mg}(s) + \text{O}_2(g) \rightarrow 2\text{MgO}(s)$
- _____ 17. $\text{AgNO}_3(aq) + \text{KI}(aq) \rightarrow \text{AgI}(s) + \text{KNO}_3(aq)$
- _____ 18. $2\text{Li}(s) + \text{H}_2\text{O}(l) \rightarrow 2\text{LiOH}(aq) + \text{H}_2(g)$
- _____ 19. $\text{C}(s) + \text{O}_2(g) \rightarrow \text{CO}_2(g)$

SECTION
4**Reinforcement****Chemical Reactions
and Energy**

Directions: Answer the following questions using complete sentences.

1. What is a catalyst? _____

2. What is an exothermic reaction? _____

3. What is an inhibitor? _____

4. What is an endothermic reaction? _____

Directions: Decide if each reaction below involves a catalyst, an inhibitor, or neither. Write **C** for catalyst, **I** for inhibitor, or **N** for neither in the blank at the left.

- _____ 5. Brushing the cut edges of fruits with lemon juice can prevent the darkening effect that contact with air can cause.
- _____ 6. In the human body, proteins called enzymes help to speed up chemical processes. The proteins are not changed during these chemical processes.
- _____ 7. Aluminum oxide, which forms on exposed aluminum, protects the aluminum from further reaction with the air.
- _____ 8. Food preservatives called BHT and BHA slow down the spoilage of certain foods.
- _____ 9. Nickel is used to increase the rate of methane formation from the addition of hydrogen and carbon monoxide. Nickel does not permanently change.

Directions: Decide if each reaction below is endergonic or exergonic. In the blank at the left, write **EN** for endergonic or **EX** for exergonic.

- _____ 10. When a lit match is placed in alcohol, the alcohol ignites producing heat and light.
- _____ 11. Energy in the form of electricity can be added to water to break apart the water molecules into hydrogen gas and oxygen gas.
- _____ 12. A piece of coal placed in a furnace gives off heat and light before turning to ash.
- _____ 13. When ammonium chloride mixes with water, the solution formed feels cold.