

Chapter 9 Quiz

Part A: Modified True/False

Indicate in the left-hand column whether each statement is true or false. If the statement is false, change the statement to make it true.

- ____ 1. According to the Law of Conservation of Mass, the total number of molecules present in the reactants must equal the total number of molecules present in the products. _____
- ____ 2. When balancing a chemical equation, the only numbers you can change are the coefficients. _____
- ____ 3. A synthesis reaction is the opposite of a combustion reaction. _____

Part B: Matching

Match each type of chemical reaction with its general form.

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|----------------------------------|--|
| ____ 4. single replacement | (a) $AB \rightarrow A + B$ |
| ____ 5. acid-base neutralization | (b) $C_xH_y + O_2 \rightarrow CO_2 + H_2O$ |
| ____ 6. synthesis | (c) $AB + DC \rightarrow CB + AD$ |
| ____ 7. combustion | (d) $A + B \rightarrow AB$ |
| ____ 8. double replacement | (e) $H-X + B-OH \rightarrow BX + HOH$ |
| ____ 9. decomposition | (f) $AB + C \rightarrow CB + A$ |

Part C: Multiple Choice

Circle the letter beside the answer that best completes the statement or answers the question.

10. Which of the following increases the rate of a chemical reaction, but is not consumed by the reaction?
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|-----------|---------------|
| A. a salt | C. an acid |
| B. a base | D. a catalyst |
11. Which of the following products form when a hydrocarbon reacts with oxygen?
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|----------------------|-------------------------------|
| A. oxygen and water | C. carbon dioxide and water |
| B. carbon and oxygen | D. carbon monoxide and oxygen |

Chapter 9 Quiz (continued)

12. Which of the following increases the rate of a reaction?
- A. dilute reactant C. larger number of reactants
B. increased temperature D. decreased surface area of reactants
13. What product or products are formed when silver nitrate (AgNO_3) reacts with copper metal (Cu)?
- A. AgCuNO_3 C. $\text{Cu}(\text{NO}_3)_2 + \text{Ag}$
B. $\text{CuAg} + \text{NO}_3$ D. $\text{Ag} + \text{Cu} + \text{NO}_3$
14. What type of reaction takes place when a metal reacts with a non-metal?
- A. synthesis C. decomposition
B. neutralization D. single replacement
15. Potassium was reacted with chlorine gas to form potassium chloride. Before the reaction, the mass of potassium was 100 grams. After the reaction, the mass of potassium was 20 grams. The reaction took 60 seconds to complete. What is the rate for this reaction?
- A. 0.3 g K/s C. 1.7 g K/s
B. 1.3 g K/s D. 2.0 g K/s
16. How many atoms of each element are represented by the expression $5 \text{ Zn}(\text{C}_2\text{H}_3\text{O}_2)_2$?
- A. 5 Zn atoms, 4 C atoms, 6 H atoms, 4 O atoms
B. 5 Zn atoms, 2 C atoms, 3 H atoms, 2 O atoms
C. 5 Zn atoms, 10 C atoms, 15 H atoms, 10 O atoms
D. 5 Zn atoms, 20 C atoms, 30 H atoms, 20 O atoms
17. Which equation correctly expresses the Law of Conservation of Mass?
- A. $2 \text{ H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$ C. $2 \text{ C}_2\text{H}_6 + 5 \text{ O}_2 \rightarrow 4 \text{ CO}_2 + 6 \text{ H}_2\text{O}$
B. $2 \text{ Fe} + \text{Cl}_2 \rightarrow 2 \text{ FeCl}_3$ D. $2 \text{ HCl} + \text{Ba(OH)}_2 \rightarrow \text{BaCl}_2 + 2 \text{ H}_2\text{O}$

Part D: Short Answer

18. Predict the products for the following reaction and write the complete balanced equation. Identify the type of chemical reaction it is.

