

Chapter 8

Study Guide

Name: _____

Date: _____ Per: _____

A. Chemical Reactions

1. Describe a chemical reaction: _____
2. The substances present before a chemical reaction occurs are called the _____.
3. The substances present after a chemical change has occurred are called the _____.
4. Chemical reactions occur because _____.
5. A _____ is a way of describing what occurs in a chemical reaction.
6. In a chemical equation the symbol “ \rightarrow ” means _____, and the symbol “+” means _____.
7. In a chemical equation the _____ are placed on the left of the arrow, and the _____ on the right of the arrow.

B. Balancing Chemical Equations

8. The Law of Conservation of Matter states _____.
9. Why do we balance chemical equations? _____.
10. What must be equal in a balanced chemical equation? _____.
11. What is the difference between a subscript and a coefficient in a chemical equation? _____
_____.
12. The number of atoms of an element in a compound is shown using _____.
13. The number of molecules present in a balanced chemical equation is shown using _____.
14. Name four rules of balancing equations:
 - a. _____.
 - b. _____.
 - c. _____.
 - d. _____.
15. What do each of the following symbols mean?
 - a. (s) _____
 - b. (l) _____
 - c. (g) _____
 - d. (aq) _____
 - e. (cr) _____
16. Balance each of the following equations:
 - a. _____ $\text{CoCO}_3 \rightarrow$ _____ $\text{CoO} +$ _____ CO_2
 - b. _____ $\text{HCl} +$ _____ $\text{NaOH} \rightarrow$ _____ $\text{H}_2\text{O} +$ _____ NaCl
 - c. _____ $\text{Al} +$ _____ $\text{Cl}_2 \rightarrow$ _____ AlCl_3
 - d. _____ $\text{Zn} +$ _____ $\text{HCl} \rightarrow$ _____ $\text{ZnCl}_2 +$ _____ H_2
 - e. _____ $\text{Ag} +$ _____ $\text{S} \rightarrow$ _____ Ag_2S
 - f. _____ $\text{Mg}(\text{ClO}_3)_2 \rightarrow$ _____ $\text{MgCl}_2 +$ _____ O_2
 - g. _____ $\text{BaCl}_2 +$ _____ $\text{H}_3\text{PO}_4 \rightarrow$ _____ $\text{Ba}_3(\text{PO}_4)_2 +$ _____ HCl
 - h. _____ $\text{C}_4\text{H}_{10} +$ _____ $\text{O}_2 \rightarrow$ _____ $\text{CO}_2 +$ _____ H_2O

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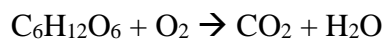
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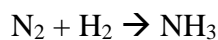
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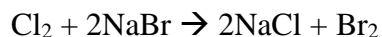
C. Types of Equations

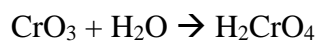
Type of Equation	General Formula	Description	Example
Synthesis			
Decomposition			
Combustion			
Single Replacement			
Double Replacement			

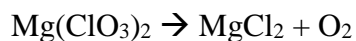
17. Label each chemical equation based on its type.

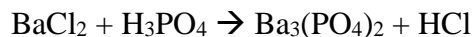




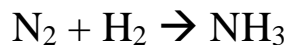








18. Draw a ball & stick model of the following equation. *Be sure to balance the equation first.*



19. Write an equation to represent the reaction shown in the model below.

