Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Ch. 8 Practice Test (30 Qs)

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. In a chemical reaction
a. the mass of the reactants equals the mass of the products.
b. the mass of the products is greater than the mass of reactants.
c. the number of atoms in the reactants and products must change.
d. energy as heat must be added to the reactants.

____ 2. The word equation solid carbon + oxygen gas → carbon dioxide gas + energy, represents a chemical reaction because
a. the reaction releases energy.
b. CO_2 has chemical properties that differ from those of C and O.
c. the reaction absorbs energy.
d. CO_2 is a gas and carbon is a crystal.

____ 3. According to the law of conservation of mass, the total mass of the reacting substances is
a. always more than the total mass of the products.
b. always less than the total mass of the products.
c. sometimes more and sometimes less than the total mass of the products.
d. always equal to the total mass of the products.

____ 4. How would oxygen be represented in the formula equation for the reaction of methane and oxygen to yield carbon dioxide and water?
a. oxygen
b. O
c. O_2
d. O_3

____ 5. Which of the following is a formula equation for the formation of carbon dioxide from carbon and oxygen?
a. Carbon plus oxygen yields carbon dioxide.
b. $C + O_2 \rightarrow CO_2$
c. $CO_2 \rightarrow C + O_2$
d. $2C + O \rightarrow CO_2$

____ 6. In an equation, the symbol for a substance in water solution is followed by
a. (*l*).
b. (*g*).
c. (*aq*).
d. (*s*).

____ 7. A chemical formula written over the arrow in a chemical equation signifies
a. a by-product.
b. the formation of a gas.
c. a catalyst for the reaction.
d. an impurity.

____ 8. After the first steps in writing an equation, the equation is balanced by
a. adjusting subscripts to the formula(s).
b. adjusting coefficients to the smallest whole-number ratio.
c. changing the products formed.
d. making the number of reactants equal to the number of products.

____ 9. What is the balanced equation for the combustion of sulfur?
a. $S(s) + O_2(g) \rightarrow SO(g)$
b. $S(s) + O_2(g) \rightarrow SO_2(g)$
c. $2S(s) + 3O_2(g) \rightarrow SO_3(s)$
d. $S(s) + 2O_2(g) \rightarrow SO_4^{2-}(aq)$

____ 10. The equation $AX \rightarrow A + X$ is the general equation for a
a. synthesis reaction.
b. decomposition reaction.
c. combustion reaction.
d. single-displacement reaction.

____ 11. The equation $AX + BY \rightarrow AY + BX$ is the general equation for a
a. synthesis reaction.
b. decomposition reaction.
c. single-displacement reaction.
d. double-displacement reaction.

____ 12. The equation $A + X \rightarrow AX$ is the general equation for a(n)
a. combustion reaction.
b. ionic reaction.
c. synthesis reaction.
d. double-displacement reaction.

____ 13. In what kind of reaction does a single compound produce two or more simpler substances?
a. decomposition reaction
b. synthesis reaction
c. single-displacement reaction
d. ionic reaction

____ 14. The equation $A + BX \rightarrow AX + B$ is the general equation for a
a. double-displacement reaction.
b. decomposition reaction.
c. single-displacement reaction.
d. combustion reaction.

____ 15. The reaction represented by the equation $2KClO_3(s) \rightarrow 2KCl(s) + 3O_2(g)$ is a(n)
a. synthesis reaction.
b. decomposition reaction.
c. combustion reaction.
d. ionic reaction.

____ 16. The reaction represented by the equation $Cl_2(g) + 2KBr(aq) \rightarrow 2KCl(aq) + Br_2(l)$ is a(n)
a. synthesis reaction.
b. decomposition reaction.
c. single-displacement reaction.
d. combustion reaction.

____ 17. An active metal and a halogen react to form a(n)
a. salt.
b. hydroxide.
c. acid.
d. oxide.

____ 18. Many metal hydroxides decompose when heated to yield metal oxides and
a. metal hydrides.
b. water.
c. carbon dioxide.
d. an acid.

____ 19. Some acids, such as carbonic acid, decompose to nonmetal oxides and
a. water.
b. a salt.
c. oxygen.
d. peroxide.

____ 20. Group 1 metals react with water to produce metal hydroxides and
a. metal hydroxides.
b. hydrochloric acid.
c. oxygen.
d. hydrogen.

____ 21. The replacement of bromine by chlorine in a salt is an example of a single-displacement reaction by
a. halogens.
b. sodium.
c. water.
d. electrolysis.

____ 22. When a slightly soluble solid compound is produced in a double-displacement reaction, a
a. gas bubbles off.
b. precipitate is formed.
c. combustion reaction takes place.
d. halogen is produced.

____ 23. A precipitate may form in a double-displacement reaction when
a. hydrogen gas reacts with a metal.
b. positive ions combine with negative ions.
c. water boils out of the solution.
d. a gas escapes.

____ 24. Predict the product of the reaction represented by the following equation:
$MgO + CO_2 \rightarrow$
a. $MgCO_3$
b. $Mg + CO_3$
c. $MgC + O_3$
d. $MgCO_2 + O$

____ 25. Magnesium hydroxide decomposes to yield magnesium oxide and
a. hydrogen.
b. oxygen.
c. water.
d. salt.

____ 26. When sodium chlorate, $NaClO_3$, decomposes, the products are
a. sodium hydroxide and water.
b. sodium oxide and chlorine.
c. sodium and chlorine oxide.
d. sodium chloride and oxygen.

____ 27. If chlorine gas is produced by halogen replacement, the other halogen in the reaction must be
a. bromine.
b. iodine.
c. astatine.
d. fluorine.

____ 28. The ability of an element to react is the element's
a. valence.
b. activity.
c. stability.
d. electronegativity.

____ 29. What is the name of a list of elements arranged according to the ease with which they undergo certain chemical reactions?
a. reactivity list
b. reaction sequence
c. activity series
d. periodic list

____ 30. Magnesium bromide (*aq*) + chlorine (*g*) yields
a. Mg(*s*) and BrCl(*aq*).
b. MgCl(*aq*) and Br_2(*l*).
c. MgBrCl(*aq*).
d. $MgCl_2$(*aq*) and Br_2(*l*).