Chemical Reactions

Multiple Choice

Write the letter of the correct answer on the line at the left.

____ **1.** Which is an example of a physical property?
- **a.** ability to burn
- **b.** hardness
- **c.** ability to react with metals

____ **2.** A change in matter that produces new substances is called a
- **a.** chemical reaction.
- **b.** physical change.
- **c.** physical property.

____ **3.** A chemical reaction in which energy is absorbed is called
- **a.** synthetic.
- **b.** exothermic.
- **c.** endothermic.

____ **4.** Chemical equations must be balanced because chemical reactions obey the principle of
- **a.** activation.
- **b.** conservation of matter.
- **c.** decomposition.

____ **5.** In a chemical equation, the number in front of a chemical formula that tells how many atoms take part in the reaction is called a
- **a.** symbol.
- **b.** concentration.
- **c.** coefficient.

____ **6.** When two or more substances combine to make a more complex substance, the process is called
- **a.** decomposition.
- **b.** replacement.
- **c.** synthesis.

____ **7.** In an exothermic reaction, the products have
- **a.** less energy than the reactants.
- **b.** more energy than the reactants.
- **c.** the same energy as the reactants.

____ **8.** Most inhibitors work by
- **a.** preventing reactants from coming together.
- **b.** increasing the surface area of reactants.
- **c.** bringing reactants together.

____ **9.** Which provides the activation energy to start a fire?
- **a.** fuel
- **b.** oxygen
- **c.** heat

____ **10.** Which cannot be used to put out a small fire?
- **a.** water
- **b.** oxygen
- **c.** baking soda

Completion

Read each word in the box. In each sentence below, fill in one of the words. Not all of the words will be used.

activation	catalyst	decomposition
exothermic	fuel	replacement

11. Reactions that release energy are called _____.

12. A process in which complex compounds break down into simpler products is called _____.

13. The energy needed to start a chemical reaction is called _____ energy.

14. A material that increases the rate of a reaction is called a(an) _____.

15. In the fire triangle, coal is an example of a(an) _____.

True or False

If a statement is true, write true. *If it is false, write* false.

_____ **16.** One sign that a chemical reaction has occurred is the formation of new substances.

_____ **17.** A chemical equation shows a chemical reaction using symbols instead of words.

_____ **18.** The reactants are the new materials produced during a chemical reaction.

_____ **19.** Increasing the surface area of the reactants will speed up a chemical reaction.

_____ **20.** Combustion is the very slow reaction between carbon dioxide and fuel.

Using Science Skills

Use the equation below to answer questions 21, 22, and 23.

$$Li + HCl \rightarrow H_2 + LiCl$$

____ **21. Applying Concepts** How many atoms of hydrogen (H) are on each side of the chemical equation above?

a. one on each side

b. one in the reactants and two in the products

c. two on each side

____ **22. Applying Concepts** Which shows a balanced equation for the chemical equation above?

a. $3Li + HCl \rightarrow H_2 + 2LiCl$

b. $Li + 2HCl \rightarrow H_2 + LiCl$

c. $2Li + 2HCl \rightarrow H_2 + 2LiCl$

____ **23. Classifying** What kind of chemical reaction is shown in the equation above?

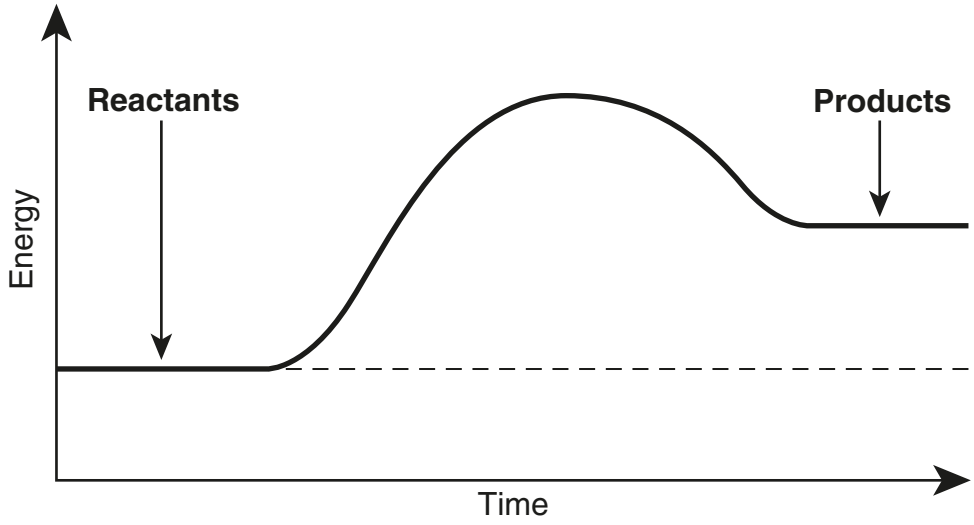
a. synthesis

b. decomposition

c. replacement

Using Science Skills

Use the graph below to answer questions 24 and 25.



____ **24. Reading Graphs** This graph shows the change in energy during a chemical reaction. Which has more energy?

a. the reactants

b. the products

c. The reactants and the products have the same amount of energy.

____ **25. Applying Concepts** The chemical reaction described by this graph is

a. endothermic.

b. exothermic.

c. inhibited.