Name _____ Class _____ Date _____

SECTION 2-2 REVIEW

ENERGY

VOCABULARY REVIEW **Distinguish between the terms in each of the following pairs of terms.**

1. free energy, activation energy _____

_____

2. exergonic reaction, endergonic reaction _____

_____

3. oxidation reaction, reduction reaction _____

_____

MULTIPLE CHOICE **Write the correct letter in the blank.**

_____ 1. The state of matter in which particles move most rapidly is

a. liquid. **b.** gas. **c.** solid. **d.** heat.

_____ 2. Every chemical reaction involves a

a. change in the state of the matter in the reactants.
b. net release of free energy.
c. transfer of energy from one form to another.
d. transfer of electrons between atoms.

_____ 3. Enzymes

a. increase the amount of energy released in a reaction.
b. decrease the amount of energy released in a reaction.
c. catalyze only exergonic reactions.
d. reduce the activation energy needed for a reaction.

_____ 4. In chemical reactions, the number of each kind of atom in the reactants is

a. the same as in the products.
b. less than in the products.
c. less if the reaction is exergonic.
d. more if the reaction is exergonic.

_____ 5. Redox reactions

a. involve either reduction or oxidation, but not both.
b. involve the transfer of electrons between atoms.
c. do not occur in living things.
d. always involve oxygen.

HRW material copyrighted under notice appearing earlier in this work.

Name _____ Class _____ Date _____

SHORT ANSWER **Answer the questions in the space provided.**

1. In the chemical reaction shown below, write *R* over the reactants and *P* over the products:

$$C_{12}H_{22}O_{11} + H_2O \longrightarrow C_6H_{12}O_6 + C_6H_{12}O_6$$

2. What role do catalysts play in chemical reactions? _____

3. What does a two-direction arrow indicate in a chemical equation? _____

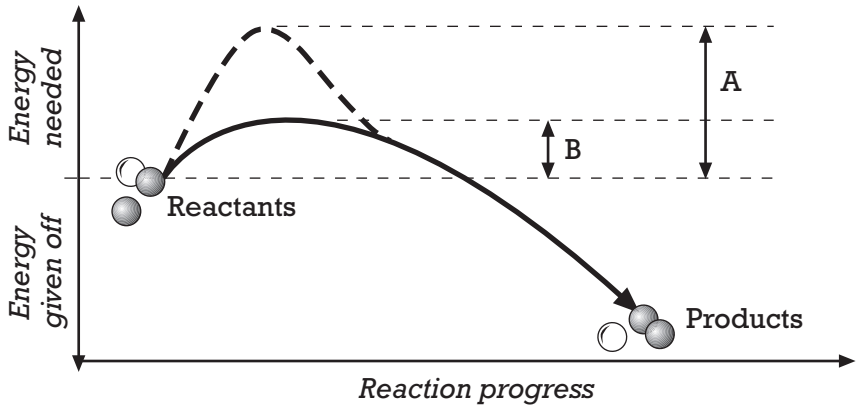
4. In the chemical reaction shown below, write "R" over the substance that is reduced and "O" over the substance that is oxidized:

$$Na + Cl \longrightarrow Na^+ + Cl^-$$

5. **Critical Thinking** Sucrose, or table sugar, can react with water to form two other compounds, glucose and fructose. However, when you add sugar to a glass of water, this reaction proceeds extremely slowly. Why does it proceed slowly, and what else is needed to speed up the reaction?

STRUCTURES AND FUNCTIONS **Use the figure to answer the following questions.**

The graph below represents the energy changes that occur as a chemical reaction progresses.



1. What is represented by arrow *A?* _____

2. What is represented by arrow *B?* _____

3. Is this reaction endergonic or exergonic? Explain your answer. _____

HRW material copyrighted under notice appearing earlier in this work.