

Episode 13 - The Driving Forces

1. When wood burns, the system proceeds toward _____ energy and the energy of the system _____.
2. Describe the energy levels of reactants and products in an exothermic reaction.
3. In general, most chemical reactions _____ energy.
4. Why does an endothermic reaction feel cold if energy is being absorbed?
5. Describe the energy levels of reactants and products in an endothermic reaction.
6. Give two everyday examples of endothermic reactions.
7. What is meant by the term entropy?
8. In which of the following examples is entropy INCREASING?
 - a. solid turns to liquid
 - b. liquid turns to gas
 - c. solid turns to gas
9. In general, reactions proceed toward _____ energy and _____ entropy.
10. What three factors were mentioned that determine how fast a chemical reaction takes place?

Answer Key

1. When wood burns, the system proceeds toward minimum energy and the energy of the system decreases.

2. Describe the energy levels of reactants and products in an exothermic reaction.

The reactants are at a higher level than the products.

3. In general, most chemical reactions release energy.

4. Why does an endothermic reaction feel cold if energy is being absorbed?

Energy is absorbed from the surroundings. Less energy was released when new bonds formed than was required to break old bonds.

5. Describe the energy levels of reactants and products in an endothermic reaction.

The products are at a higher energy level.

6. Give two everyday examples of endothermic reactions.

Melting of ice, evaporation of water, boiling of water.

7. What is meant by the term entropy?

The randomness or disorder of a system.

8. In which of the following examples is entropy INCREASING?

- solid turns to liquid
- liquid turns to gas
- solid turns to gas

All three

9. In general, reactions proceed toward minimum energy and maximum entropy.

10. What three factors were mentioned that determine how fast a chemical reaction takes place?

Temperature, concentration, and catalysts