Physical Science Chapter 7 Notes Outline

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chemical Reactions – Pages 190-222**

7.1 - Describing Chemical Reactions

Chemical Equations-

 **Reactants-**

 **Products-**

 Using Equations to Represent Reactions-

 **Chemical Equation-**

Conservation of Mass-

Balancing Equations-

 **Coefficients-**

Counting with Moles-

 **Moles-**

 **Molar Mass-**

 Mole-Mass Conversions-

Chemical Calculations-

 Converting Mass to Moles-

 Using Mole Ratios-

 Converting Moles to Mass-

7.2 Types of Reactions-

Classifying Reactions-

1. Synthesis-

 **Synthesis Reaction-**

2. Decomposition-

 **Decomposition Reaction-**

**3. Single Replacement Reaction-**

**4. Double Replacement Reaction-**

**5. Combustion**

Reactions as Electron Transfers-

 **Oxidation-Reduction Reaction-**

Oxidation-

Reduction-

“LEO says GER”

**SECTION QUESTIONS**

**1.) The synthesis of water is described by the equation 2H2 + O2 🡪 2H2O. How is the decomposition of water related to this reaction? Explain using a chemical equation.**

**2.) What is the product of the synthesis reaction between magnesium and iodine? Explain your answer. What will the chemical formula of this reaction be?**

7.3 Energy Changes in Reactions-

Chemical Bonds and Energy-

 **Chemical energy-**

Breaking Bonds-

 Forming Bonds-

Exothermic and Endothermic Reactions-

 **Exothermic Reactions-**

 **Endothermic Reactions-**

Conservation of Energy-

**SECTION QUESTIONS**

1. **What happens to chemical bonds as a chemical reaction occurs?**
2. **Is the combustion of propane endothermic or exothermic?**
3. **When propane reacts with oxygen, does the surrounding area become warmer or cooler?**

7.4 Reaction Rates-

Reactions over time-

 **Reaction rate-**

Factors Affecting Reaction Rates-

1. Temperature-
2. Surface Area-
3. Stirring-
4. Concentration-
5. **Catalysts-**

**SECTION QUESTIONS**

1. **When you add baking soda to vinegar, the mixture fizzes as carbon dioxide gas is produced. Suppose you added water to the vinegar before you mixed it with the baking soda. What do you think would happen to the rate of carbon dioxide produced?**
2. **Explain why, if you want to store uncooked hamburger for a month, you put it in a freezer rather than a refrigerator.**

7.5 Equilibrium-

Types of Equilibrium

 **Equilibrium-**

1. Physical Equilibrium-
2. Chemical Equilibrium-

**Reversible reaction-**

Factors affecting Chemical Equilibrium-

1. Temperature-
2. Pressure-
3. Concentration-

**SECTION QUESTIONS**

1. **What happens when a physical change does not go to completion? What happens when a reaction does not go to competition?**
2. **Once a chemical reaction has reached equilibrium, how does the system respond to change?**