

Quarterly #4: List of Topics: Chapters 15-18

Open Ended & Multiple Choice

Chapters 15 & 16: Thermochemistry

- Spontaneity
- Hess's Law
- $-\Delta H_{\text{rxn}} = \sum H_{\text{prod}} - \sum H_{\text{react}}$
- Enthalpy Definition
- Exothermic vs. Endothermic
- Entropy Definition
- Examples of increasing/decreasing entropy
- $-\Delta S_{\text{rxn}} = \sum S_{\text{prod}} - \sum S_{\text{react}}$
- Energy Profile Diagrams
- $-\Delta G = \Delta H - T\Delta S$
- Factors Affecting Speed of Chemical Reactions

Chapter 17: Equilibrium

- Equilibrium
- Writing equilibrium expressions
- Significance of K ($K > 1$ = Products favored, $K < 1$ = Reactants Favored)
- Le Chatelier's Principle

Chapter 18: Acid and Base Theories

- Strong vs. weak acids and bases
- Neutralization reactions
- Conjugate acid/base pairs
- Strength of conjugate acid/base pairs
- Titration Curves
- pH Calculations