**Chem 112-2020 Exam 3 Topics Vining**

**Chapter 16: Acids and Bases**

16.3 Acid and Base Strength

16.3a Acid and Base Hydrolysis Equilibria, Ka, and Kb

16.3b Ka and Kb Values and the Relationship Between Ka and Kb

16.3c Determining Ka and Kb Values in the Laboratory

16.4 Estimating the pH of Acid and Base Solutions

16.4a Strong Acid and Strong Base Solutions

16.4b Solutions Containing Weak Acids

16.4c Solutions Containing Weak Bases

16.5 Acid-Base Properties of Salts: Hydrolysis

16.5a Acid–Base Properties of Salts

16.5b Determining pH of a Salt Solution

16.6 Molecular Structure and Control of Acid-Base Strength

16.6a Molecular Structure and Control of Acid-Base Strength

**Chapter 17: Advanced Acid-Base Equilibria**

17.1 Acid–Base Reactions

17.1a Strong Acid/Strong Base Reactions

17.1b Strong Acid/Weak Base and Strong Base/Weak Acid Reactions

17.1c Weak Acid/Weak Base Reactions

17.2 Buffers

17.2a Identifying Buffers

17.2b Buffer pH

17.2c Making Buffer Solutions

17.3 Acid–Base Titrations

17.3a Strong Acid-Strong Base Titrations

17.3b Weak Acid-Strong Base and Weak Base-Strong Acid Titrations

17.3c pH Titration Plots as an Indicator of Acid or Base Strength

17.3d pH Indicators

17.3e Polyprotic Acid Titrations

17.4 Some Important Acid–Base Systems

17.4a The Carbonate Buffer System: H2CO3/HCO3−/CO32−

17.4b Amino Acids

**Chapter 18: Precipitation and Lewis Acid-Base Equilibria**

18.1 Solubility Equilibria and *K*sp

18.1a Solubility units

18.1b The Solubility Product Constant

18.1c Determining *K*sp Values

18.2 Using *K*sp in Calculations

18.2a Estimating Solubility

18.2b Predicting if a Solid Will Precipitate or Dissolve

18.2c The Common–Ion Effect

Section 18.2 Mastery

18.3 Lewis Acid–Base Complexes and Complex Ion Equilibria

18.3a Lewis Acids and Bases

18.3b Complex Ion Equilibria

18.4 Simultaneous Equilibria

18.4a Solubility and pH

18.4b Solubility and Complex Ions

18.4c Solubility, Ion Separation, and Qualitative Analysis