

AP Chemistry
Unit VII Topics

I. Rates of Chemical Reactions

- A. Definitions pages 527 - 532
- B. Factors Influencing Reaction Rates 557 - 563
 - 1. Nature of reactants
 - 2. Concentration of reactants
 - 3. Temperature of reactants
 - 4. Presence of a catalyst
- C. Rate Laws and Reaction Order 549 - 552
 - 1. Calculations from experimental data
 - 2. Mechanisms & rate order; formulas
- D. Collision Theory 552 - 557
 - 1. Activation energy
 - 2. Arrhenius Equation

p. 567 # 19-35 odd, 39,41,43,45,50,51,53,54,57,65.

II. Chemical Equilibrium

- A. Law of Mass Action pages 579-586
- B. Equilibrium Constants 586-604
 - 1. Kc vs. Kp
 - 2. Categories of constants
 - 3. Calculations of Keq values
- C. LeChatelier's Principle 604-610
- D. Thermodynamics and Equilibrium "773-778"
 - 1. Free energy and temperature (we covered this previously)
 - 2. Activities

p.614 #18ab,19,20,24,26,27,28,30,31,33ab,34a,37,40,41,43,45,51,57,59,61,63

III. Solution Equilibria

- A. Dissociation/Ionization pages 623-667
 - 1. Kw and pH (we covered this previously)
 - 2. Calculations with Ka and Kb
- B. Buffers and Simultaneous Equilibria 681-716
 - 1. Calculating buffer pH
 - 2. Hydrolysis constants & pH
 - 3. Simultaneous equilibria
- C. Solubility Equilibria 717-736
 - 1. Ksp calculations
 - 2. Common ion effect
 - 3. Qualitative analysis

p. 743 #75-115 odd