

CHEM 1312 - General Chemistry II
Unit Summary
Fall 2009

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Unit 2: Kinetics and Equilibrium

Chemical Kinetics

Whitten Text

Text Chapters (16.1-16.9)

Recommended Problems (16.4, 6, 8, 10, 16, 18, 22, 24, 26, 32, 34, 40, 48, 50, 76)

Brown Text

Text Chapters (14.1-14.7)

Recommended Problems (14.13, 15, 17, 19, 23, 25, 29, 31, 33, 45, 46, 51, 59, 65)

1. Rate of a reaction
2. Factors that affect reaction rates
3. Nature of reactants
4. Concentration of reactants: Rate-law expressions & Reaction order
5. Concentration vs. time: Integrated rate equations and half-life
6. Collision theory, activation energy
7. Transition state theory
8. Mechanisms and Rate-law expressions
9. Arrhenius equation: temperature and rate
10. Catalysts

Chemical Equilibria

Whitten Text

Text Chapters (17.1-17.13)

Recommended Problems (17. 5, 7, 18, 22, 24, 32, 38, 42, 46, 48, 52, 56, 88)

Brown Text

Text Chapters (15.1-15.7)

Recommended Problems (15. 12, 13, 15, 19, 31, 33, 41, 53, 60)

1. Dynamic equilibria
2. Equilibrium constant K_c
3. Reaction quotients
4. Calculations with K_c
5. Heterogeneous equilibria
6. K_p and K_c
7. Le Chatelier's Principle: factors affecting equilibria