



# Test 2 Review

Dr. Turner

# Chapter 12 Topics

- Integrated Rate Laws
- Half Lives
- Collision Theory
- Activation Energy, Transition State Energy, and Enthalpy
- Arrhenius Equation
- Reaction Mechanisms, Molecularity, and Rate-Limiting Step
- Catalysis

# Chapter 13 Topics

- Chemical equilibrium
- Reaction quotients
- Predicting reaction direction by comparing  $Q$  and  $K$
- Equilibrium constants ( $K_c$  and  $K_p$ )
- Writing  $K_c$  and  $K_p$  expressions
- Relating  $K_c$  and  $K_p$
- Relating  $K$  and chemical equations
- Le Chatelier's principle
- Equilibrium calculations

# Chapter 14 Topics

- Bronsted-Lowry and Arrhenius acids and bases
- Conjugate acids, conjugate bases, and conjugate acid-base pairs
- Amphoteric and amphiprotic species
- Relating  $[\text{H}_3\text{O}^+]$ ,  $[\text{OH}^-]$ , pH, and pOH
- Determining relative strengths of acids and bases using % ionization,  $K_a$ , and  $K_b$
- Finding the pH of strong acids and bases
- Finding the pH and % ionization of weak acids