Exam 3 Study Guide

Stoichiometry

- See dry lab and the questions on test 3 review

Lewis Structures

- See dry lab

Chapter 7 – Acids and Bases

- Calculations involving K_w (ion product constant for water); calculate hydronium or hydroxide ion concentrations.
    - Apply equilibrium concept to hydronium vs hydroxide concentrations.
- pH calculations
- Write ionization equation of acid in water.
    - Difference between strong and weak acids
    - Common structural features in acidic compounds
- Write ionization equation of base in water.
    - Difference between strong vs weak bases
- Identify acid, base, conjugate acid and conjugate base in an acid-base reaction.
- Define and identify amphiprotic substances.
- Recognize buffer solutions, describe how buffers resist pH changes.
- Describe the role of CO_2 in the carbonic acid buffer.
- Apply chemical equilibrium concept (LeChatelier's principle) when there is a change to the system (such as an increase or decrease to a reactant or a product)

Chapter 9 – Hydrocarbons

- Know the different covalent bonding patterns for carbon.
- Know the names of the first 10 linear alkanes.
- Be able to go from a Lewis structure to a condensed or skeletal structure.
- Nomenclature of alkanes, branched alkanes, cycloalkanes, alkenes, alkynes and organic compounds with benzene rings
- Relationship between the structure and physical properties of hydrocarbons