CHM 1032C
Review for test4

I. Solutions/Molarity
    1) Characteristics
        Solute, solvent, saturated, electrolyte, colloid, suspension
    2) Concentrations
        • w/w %
        • Molarity $M = \frac{moles}{L}$
        M V = moles (Remember the question: How do you make 2L of 1M NaOH?)
    3) Dilutions
        $M_1 V_1 = M_2 V_2$
    (Remember the question: How do you make 2L of 1M HCl from 12 M HCl?)
    4) Osmosis
    5) Henry's Law

II. Reaction rates and Equilibria
    1) Thermodynamics vs. kinetics
    2) 3 ways to increase the rate of the reaction
    3) Energy diagram
        transition state, activation energy, reactants, products, reaction coordinate
    4) How a catalyst works- (decrease activation energy)
    5) Equilibrium constants
    6) Le Chatelier's principle

III. ACIDS AND BASES
    1) What is an acid? What is a base? (Arrhenius)
    2) What is an acid? What is a base? (Brønsted-Lowry)
        a)Acid base equilibia
        b) Which way does the equilibrium lie
    3) How do you measure acidity? (pH)
    4) What is the $[H^+]$ given the pH?
    5) Why isn't the pH of 0.1M CH_3COOH not 1? (Strong vs weak acid)
    6) Why is the pH of NH_3 basic? (Equations with water)
    7) What is a buffer solution and how does it keep the pH constant?