**Name:** Andrew To **Date:** May 4th, 2015

**/\IS Chemistry 10 Points (Extra Credit)**

**Acid & Base Extra Credit Problems**

Complete the following. (Extra credit. Up to 2 points each). Show all work.

1. Determine the pH of a solution made from dissolving 18.0 g of sodium hydroxide in enough water to make 1.00 L of solution.

[NaOH] = pOH = = 0.347

[NaOH] = 0.450 pH + pOH = 14 → pH = 14 - pOH

[OH-] = 0.450 pH = 14 – 0.347 = **13.653**

2. In a titration, 26.5 mL of 0.650 M KOH were required to neutralize 14.6 mL of HNO3 of unknown concentration. Determine the concentration of the HNO3 solution.

3. A solution of Ca(OH)2 has a pH of 11.745. Find the mass of Ca(OH)2 present in 300 mL of this solution.

pH + pOH = 14 → pOH = 14 – pH [Ca(OH)2] =

pOH = 14 – 11.745 = 2.255 =

[OH-] =

4. A solution of HCl has a concentration of 0.0280 M. Determine the following: [H+], [OH-], pH, and pOH.

**[H+]** = 0.0280 × 1 = **0.0280** **[OH-]** = = **3.57 × 10-13**

KW = [H+][OH-] **pH** = = **1.553**

[OH-] = **pOH** = = **12.447**

5. Determine the number of ClO3- ions present in 150. mL of a solution of HClO3 with a pH of 2.165.

[H+] = 10-pH

[H+] = 10-2.165 = 6.84

[HClO3-] =

6.84 =

mol = 6.84 ()

mol = 1.03