**Circle** the stronger acid in the following pairs. (1 mark each)

a) HIO3 or C6H5COOH b) H3O+ or HSO3-  c) H2PO4- or HCOOH

HTe- is a weaker acid than H2S.

a) Write the chemical formulae of the conjugate bases of the above two acids (2 marks)

b) Write a chemical equation using HTe- as the acid and H2S's conjugate base as the reactants. Complete the chemical equation involving the 2 conjugate acid/base pairs and draw an arrow to show which direction does the equilibrium favor. (2 marks)

*For each question below,* ***show all your work*** *for full marks.*

Determine the [H3O+] and the [OH-] in the following solution: 8.20 x 10-3M **Ca(OH)2**. (4 marks)

Find the Kb value of H2PO4-. (3 marks)

Calculate the pOH when you mix 25.0mL of 0.0125M NaOH with 50.0mL of 0.0170M HCl. (6 marks)

Find the pH of a 1.0L, 0.125M solution of H2CO3. Show all your work and state any assumptions that you had. (8 marks)