Advanced Chemistry: Ch 18 Quiz Name:

1. Draw an appropriate titration curve for aspartic acid, labeling the axes, and indicating the inflection points and the pKa points. (The pKa values for aspartic acid are, α-COOH: 2.1, α-$NH3^{+}$: 9.8, R-group: 3.9)

2. From the previous graph, at what pH is the highest concentration of the zwitterion? Also draw the structure for the ion.

3. Calculate the concentrations of all ionic species of 0.25 M Proline at a pH of 8.1. pKa values for proline are 2.1 and 10.6.

4. The pH of a 0.02 M solution of an acid was measured at 4.6.
   a. What is the $[H^{+}]$ concentration in this solution?

   b. Calculate Ka and pKa for this acid

5. Hydrofluoric acid has a Ka value of 6.7×10^{-4}.
   a. What is the pH of a 0.5 M solution?

   b. If 250 mL of 0.5 M $HF_{(aq)}$ was neutralized with 100 mL of 0.1 of $NaOH_{(aq)}$,what would the final pH be?