CHE 112 - Homework - Ch 14e

OER 14.7 **Acid/Base Titration** Score: _____/35

Name: _____ Date: _____

Show work on a separate sheet of paper.

[10 pt] 1. 50.0 mL of 0.20 M HNO_3 was titrated with 0.20 M NaOH. What is the pH at each of the following points.

(a) At the start of the titration. 1(a) _____

(b) After 40.0 mL of NaOH is added. 1(b) _____

(c) After 50.0 mL NaOH is added. 1(c) _____

(d) After 60.0 mL NaOH is added. 1(d) _____

[10 pt] 2. 50.0 mL of 0.20 M HF was titrated with 0.20 M NaOH. What is the pH at each of the following points. ($K_a = 3.5 \times 10^{-4}$)

(a) At the start of the titration. 2(a) _____

(b) After 40.0 mL of NaOH is added. 2(b) _____

(c) After 50.0 mL NaOH is added. 2(c) _____

(d) After 60.0 mL NaOH is added. 2(d) _____

[10 pt] 3. 100.0 mL of 0.10 M Methylamine (CH_3NH_2) was titrated with 0.250 M HNO_3. What is the pH at each of the following points.($K_b = 3.7 \times 10^{-4}$)

(a) At the start of the titration. 3(a) _____

(b) After 20.0 mL of HNO_3 is added. 3(b) _____

(c) After 40.0 mL HNO_3 is added. 3(c) _____

(d) After 60.0 mL HNO_3 is added. 3(d) _____

[5 pt] 4. Sketch a graph of the titration of a weak base with a strong acid. Label the axis properly, and label the equivalence point.

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