

The third hour exam is Friday, November 2nd. It will cover Chapter 16, sections 16.2, 16.6 to 16.12, and Chapter 17, sections 17.1 to 17.3

WORKSHEETS ARE DUE AT THE BEGINNING OF CLASS ON THE DATE GIVEN ON THE WORKSHEET. LATE WORKSHEETS WILL NOT BE ACCEPTED.

NAME _____ Panther ID _____

For problems involving calculations you must show your work for credit.

1) An aqueous solution at $T = 25. \text{ }^\circ\text{C}$ contains 0.0400 M hypochlorous acid (HOCl , $K_a = 3.5 \times 10^{-8}$) and 0.0600 M sodium hypochlorite (NaOCl).

a) What is the initial pH of the above solution.

b) Give the correctly balanced reaction that takes place when a small amount of hydrochloric acid (HCl) is added to the above solution.

2) Consider the titration of a weak aqueous base solution with hydrochloric acid (HCl), a strong acid. The pH at the equivalence point of the titration will be (circle the correct answer).

larger than 7.0

approximately 7.0

smaller than 7.0

3) 0.984 g of a weak monoprotic acid are dissolved in water. The weak acid is then titrated with a 0.2145 M solution of potassium hydroxide (KOH), a strong soluble base. After the addition of 33.96 mL of the KOH solution the equivalence point of the titration is reached.

What is the molecular weight of the weak monoprotic acid?

4) A solution is formed by adding 25.00 mL of a 0.1672 M solution of sodium hydroxide (NaOH), a strong soluble base, to 50.00 mL of a 0.1142 M solution of iodoacetic acid (CH_2ICOOH , $K_a = 7.6 \times 10^{-4}$), a weak monoprotic acid.

a) Is the solution that forms a buffer solution? Why or why not?

b) What is the pH of the solution formed by the addition of the NaOH and iodoacetic acid solutions?