

CHM 1046 - JOENS

WORKSHEET #8

Due date: Wednesday, October 17<sup>th</sup>

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) Find the pH for a 0.200 M aqueous solution of phenol ( $C_6H_5OH$ ). The value for  $K_a$  for phenol at this temperature is  $K_a = 1.3 \times 10^{-10}$ . Also find the percent dissociation of phenol for these conditions.

2) A 0.100 M aqueous solution of which of the following ionic compounds would be expected to have a pH much less than 7.0?

- a)  $NaNO_3$
- b)  $KF$
- c)  $KOH$
- d) Both a and b
- e) None of the above

\_\_\_\_\_

3) The pH of a 0.0400 M aqueous solution of a weak monoprotic acid HA, measured at  $T = 25.0\text{ }^{\circ}\text{C}$ , is  $\text{pH} = 3.71$ .

a) Find the value for  $[\text{H}_3\text{O}^+]$  and  $[\text{OH}^-]$  present in the above solution.

b) Find the value for  $K_a$  for the above acid, at  $T = 25.0\text{ }^{\circ}\text{C}$ .

4) The value for the acid ionization constant for hypochlorous acid (HOCl) is  $K_a = 3.5 \times 10^{-8}$  at  $T = 25.0\text{ }^{\circ}\text{C}$ . What is the value for  $K_b$  for the hypochlorite ion ( $\text{OCl}^-$ ) at this temperature?