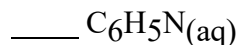
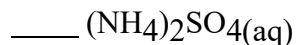


**Chem 10123, Quiz 4**

February 19, 2020

Name: \_\_\_\_\_  
(Please Print)

1. (9 points) Indicate whether each of the following aqueous solutions is acidic (A), basic (B), or neutral (N). Also, for each solution, write a *complete, balanced net-ionic equation* for the major *equilibrium* reaction that is occurring in solution.



2. A certain solution (call it Solution A) is prepared by adding 25.0 g of sodium benzoate "NaA" to 250.0 mL of 1.00 M benzoic acid "HA" ( $K_a = 6.50 \times 10^{-5}$ ) and then diluting to a total volume of 1.00 L. (molar masses: NaA = 144.1, HA = 122.1)

- (a) (6 points) **SHOW ALL WORK.** Determine the pH of Solution A. Include the important *equilibrium* reaction. (For benzoic acid, use HA for simplicity.)

- (b) (6 points) **SHOW ALL WORK.** Suppose that 20.0 mL of 5.00 M KOH is added to solution A. Write a *balanced, net-ionic equation* for any reaction that occurs upon mixing and determine the pH of the final solution.