Chem 10123, Quiz 3 Name: _____
(Please Print)
February 12, 2020

1. (4 points) For each of the following substances, indicate whether it would be acidic (**A**), basic (**B**), or neutral (**N**) in aqueous solution.

   $KOCl$ _____ CH_3NH_3Br _____ $HOCl$ _____

   $(CH_3)_2NH$ _____ KNO_3 _____ N_2O_5 _____

2. (2 points) Regarding the $CH_3NH_3Br_{(aq)}$ solution above, write the ***balanced net ionic equation*** for the essential ***equilibrium reaction*** that accounts for your answer.

3. Barium nitrite, $Ba(NO_2)_2$ (molar mass = 229.35) dissolves in water to yield a ***basic*** solution.

   (a) (3 points) Why is the solution basic? Explain in 30 words or less and write the ***balanced net ionic equation*** that accounts for this fact.

   (b) (3 points) **SHOW ALL WORK.** Determine the mass of $Ba(NO_2)_2$ that is required to prepare 300.0 mL of 0.150 M $Ba(NO_2)_2$.

   (c) (8 points) **SHOW ALL WORK.** ***Clearly state and justify any assumptions that you may make.*** Determine the pH of this 0.150 M $Ba(NO_2)_2$ solution. (For HNO_2, $pK_a = 3.34$)