Name: **Period:**   **Seat#:**

Directions: Show all work including the balanced chemical reaction taking place. Box your final answer.

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1) What is the pH of a 0.100 M solution of sodium acetate? $K_b = 5.65 \times 10^{-10}$. _8.876_

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2) What is the pH of a 0.0500 M solution of KCN? $K_b = 2.1 \times 10^{-5}$. _11.01_

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3) Find the pH of a 0.30 M solution of sodium benzoate, C_6H_5COONa. The K_b for $C_6H_5COO^-$ (benzoate ion) is 1.55×10^{-10}. _8.83_

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4) Find the pH of a 0.20 M solution of sodium propionate (C_2H_5COONa), where the K_a of propionic acid $= 1.34 \times 10^{-5}$. _9.09_

5) What is the pH of a 0.0500 M solution of ammonium chloride, NH_4Cl. K_a = 5.65 x 10^{-10}. _5.274_

6) What is the pH of a 0.100 M solution of methyl ammonium chloride (CH_3NH_3Cl). K_a of the methyl ammonium ion ($CH_3NH_3^+$ = 2.70 x 10^{-11}. _5.784_

7) Given the pK_a for ammonium ion is 9.26, what is the pH of 1.00 L of solution which contains 5.45 g of NH_4Cl (the molar mass of NH_4Cl = 54.5 g mol^{-1}. *Yes I know this molar mass is off, but I don't want to redo the whole answer key! Ha!*) _5.13_