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

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

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

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

**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 x $10^{-10}$. _8.83_

**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 x $10^{-5}$. _9.09_

**5)** What is the pH of a 0.0500 M solution of ammonium chloride, $NH_4Cl$. $K_a = 5.65 \times 10^{-10}$. _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 ($CH_3NH_3^+ = 2.70 \times 10^{-11}$. _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$^{-1}$.) _5.13_