

Show all work, the chemical reaction taking place balanced, box each answer in the process throughout the problem and final answer

1. What is the pH of a 0.100 M solution of sodium acetate? $K_b = 5.65 \times 10^{-10}$. **8.876**

2. What is the pH of a 0.0500 M solution of KCN? $K_b = 2.1 \times 10^{-5}$. **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 1.55×10^{-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 = 1.34×10^{-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 ($\text{CH}_3\text{NH}_3\text{Cl}$). K_a of the methyl ammonium ion ($\text{CH}_3\text{NH}_3^+ = 2.70 \times 10^{-11}$). **5.784**

7. Given the $\text{p}K_a$ 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 $\text{NH}_4\text{Cl} = 54.5 \text{ g mol}^{-1}$.) **5.13**