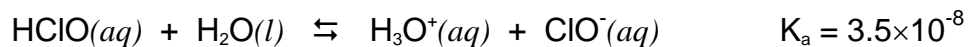


WEAK ACID, WEAK BASE AND SALT PROBLEMS

1. a) Calculate the equilibrium concentrations of H_3O^+ , ClO^- and HClO in a 0.50 M solution of hypochlorous acid, HClO . b) What is the pH of this solution?



2. a) Find the K_a of a 1.25 M solution of nitrous acid, $\text{HNO}_2(aq)$. The pH of this solution is measured to be 1.62.

b) What is the %dissociation for this $\text{HNO}_2(aq)$ solution?

3. A 0.200 M solution of a weak acid is 9.4% dissociated. Use this information to calculate $[\text{H}_3\text{O}^+]$, $[\text{A}^-]$, $[\text{HA}]$ and K_a .

4. Calculate the pH of a 0.50 M dimethylamine $(\text{CH}_3)_2\text{NH}$ solution. $K_b = 5.4 \times 10^{-4}$

5. A 0.065 M solution of methylamine, CH_3NH_2 , has a pH of 11.70. What is K_b for CH_3NH_2 ?
6. Is KF an acidic, basic or neutral salt? Write the hydrolysis reaction and calculate the pH of a 0.10 M KF solution. $K_a(\text{HF}) = 3.5 \times 10^{-4}$
7. Is NH_4Cl an acidic, basic, or neutral salt? Write the hydrolysis reaction and calculate the pH of a 0.10 M NH_4Cl solution. $K_b(\text{NH}_3) = 1.8 \times 10^{-5}$