

D39 POD

1. The conjugate acid of SO_3^{2-} is
 - a. SO_4^{2-}
 - b. HSO_3^-
 - c. SO_3
 - d. H^+
 - e. H_3O^+
2. Which of the following solutions will have a pH of 1?
 - a. 1.0 M CH_3COOH
 - b. 0.1 M CH_3COOH
 - c. 0.1 M HF
 - d. 0.1 M HNO_3
 - e. 0.1 M NH_3
3. At the equivalence point of the titration of an acid with base, what condition is met?
 - a. The volume of base added from buret equals the volume of acid in the reaction flask.
 - b. The molarity of the base from the buret equals the molarity of the acid in the reaction flask.
 - c. Moles of base added from the buret equal the moles of acid in the reaction flask.
 - d. The % ionization of base added from the buret equals the % ionization of the acid in the flask.
 - e. All of the above conditions are met.
4. Which of the following combinations will NOT produce a buffer solution?
 - a. NaCl and CH_3COOH
 - b. NH_4Cl and NH_3
 - c. KCN and HCN
 - d. NaHCO_3 and H_2CO_3
 - e. NaCH_3COO and CH_3COOH

D39 Buffer and Titration Problems

1.
 - a. What is the pH of a solution that is made when 200.0 mL of a 10.0M $\text{HC}_2\text{H}_3\text{O}_2$ is added to 100.0 mL of a 10.0M $\text{NaC}_2\text{H}_3\text{O}_2$? (K_a of $\text{HC}_2\text{H}_3\text{O}_2$ is 1.8×10^{-5})
 - b. What is the pH when 100.0 mL of a 5.00M NaOH are added to the buffer?
 - c. What is the pH when 200.0 mL of a 5.00M HCl are added to the buffer?

2. 100.0 mL of a 2.00 M HClO is titrated with a 1.00 M NaOH .
If $K_a = 2.8 \times 10^{-8}$ what is the pH
 - a. before titration begins?
 - b. when 50.0 mL of the NaOH has been added?
 - c. 1/2 way to the equivalence point?
 - d. when 100.0mL of the NaOH has been added?
 - e. at the equivalence point?

3. 100.0 mL of a 1.00 M HCl is titrated with a 2.00 M KOH . What is the pH
 - a. before titration begins?
 - b. when 10.0mL of the KOH has been added?
 - c. 1/2 way to the equivalence point?
 - d. when 40.0 mL has been added?
 - e. at the equivalence point?
 - f. when 100.0 mL of the KOH has been added?