

Worksheet 8

1. Give the conjugate acid or base of the following: a) CN^- , b) HPO_4^{2-} , c) HIO_3 , d) NH_4^+ , e) $\text{C}_2\text{H}_5\text{NH}_2$
2. Calculate the pH of the following strong acid solutions: a) 0.00835 M HNO_3 , b) 0.525 g of HClO_4 in 575 mL of solution, c) a mixture made by adding 50.0 mL of 0.020 M HCl to 150 mL of 0.010 M HI
3. Calculate the pH and $[\text{OH}^-]$ of the following strong base solutions: a) 0.0012 M KOH , b) 10.0 mL of 0.0105 M $\text{Ca}(\text{OH})_2$ diluted to 500.0 mL.
4. A 0.100 M solution of bromoacetic acid (BrCH_2COOH) is 13.2 % ionized. Using this information calculate $[\text{H}^+]$, $[\text{BrCH}_2\text{COO}^-]$, $[\text{BrCH}_2\text{COOH}]$, and K_a for BrCH_2COOH