Worksheet 10

1. Give the conjugate acid or base of the following: a) CN^-, b) HPO_4^{2-}, c) HIO_3 d) NH_4^+, e) $C_2H_5NH_2$

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 $[OH^-]$ of the following strong base solutions: a) 0.0012 M KOH, b) 10.0 mL of 0.0105 M $Ca(OH)_2$ diluted to 500.0 mL.

4. A 0.100 M solution of bromoacetic acid ($BrCH_2COOH$) is 13.2 % ionized. Using this information calculate $[H^+]$, $[BrCH_2COO^-]$, $[BrCH_2COOH]$, and K_a for $BrCH_2COOH$