

## CH 223 – Worksheet 1

1. Give the conjugate acid or base of the following: a)  $\text{CN}^-$ , b)  $\text{HPO}_4^{2-}$ , c)  $\text{HIO}_3$ , d)  $\text{NH}_4^+$ , e)  $\text{C}_2\text{H}_5\text{NH}_2$
2. Predict whether aqueous solutions of the following substances are acidic, basic, or neutral: a)  $\text{CrBr}_3$ , b)  $\text{LiI}$ , c)  $\text{K}_3\text{PO}_4$ , d)  $\text{KCN}$ , e)  $\text{NH}_4^+$

3. Briefly define the following terms:

Common-Ion Effect:

Brønsted-Lowry acid and base:

A Strong acid:

4. Calculate the pH of the following acid solutions: a) 0.00835 M  $\text{HNO}_3$ , b) 0.525 g of  $\text{HClO}_4$  in 575 mL of solution, c) 0.0842 M  $\text{Ca}(\text{OH})_2$  M.
5. Calculate the molar concentration of  $\text{OH}^-$  ions in 0.5 M solution of hypobromite ion  $\text{BrO}^-$ ,  $K_a = 2.5.0 \times 10^{-9}$ . What is the pH of the solution?