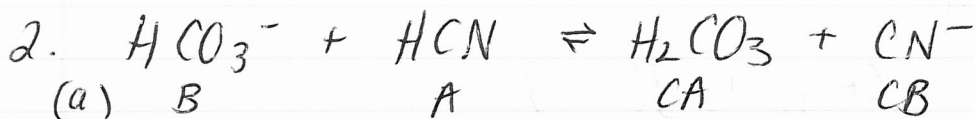


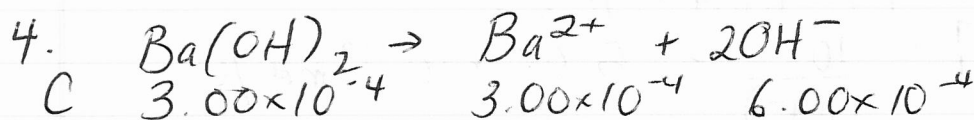
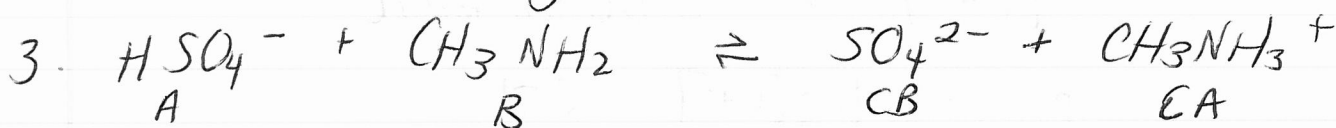
Acid Equilibrium Practice Test

1. read your notes



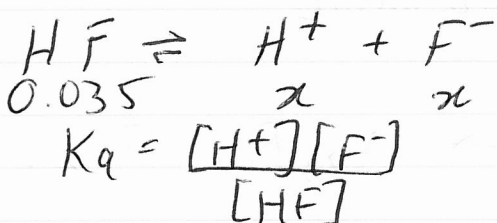
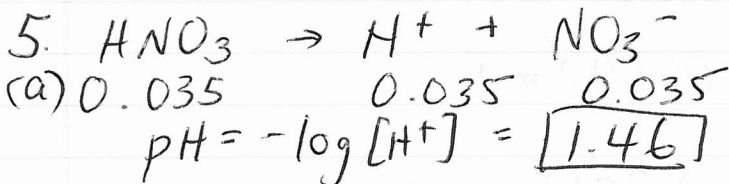
(b) Bronsted-Lowry \rightarrow no hydroxide

(c) HCO_3^- - can gain or lose H^+



$$\text{pOH} = -\log[\text{OH}^-] = 3.22$$

$$\text{pH} = 14 - \text{pOH} = 10.78$$



$$6.8 \times 10^{-4} = \frac{x^2}{0.035}$$

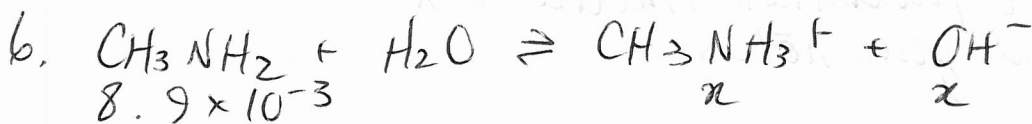
$$\text{pH} = -\log[\text{H}^+] = 2.31$$

$$[\text{H}^+] = x = 0.00488 \text{ mol/L}$$

(b) HNO_3 is strong, HF is weak

\downarrow
 ionizes 100%
 $[\text{HNO}_3] = [\text{H}^+] = \text{low pH}$

\searrow
 ionizes < 50%
 $[\text{HF}] > [\text{H}^+] = \text{higher pH}$



$$K_b = \frac{[\text{CH}_3\text{NH}_3^+][\text{OH}^-]}{[\text{CH}_3\text{NH}_2]}$$

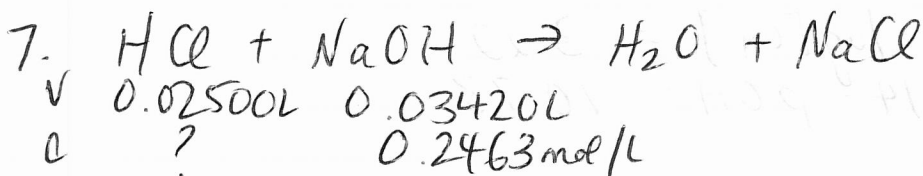
$$4.4 \times 10^{-4} = \frac{x^2}{8.9 \times 10^{-3}}$$

$$[\text{OH}^-] = x = 0.00198 \text{ mol/L}$$

$$\text{pOH} = -\log[\text{OH}^-] = 2.71$$

$$\text{pH} = 14 - \text{pOH} = 11.29$$

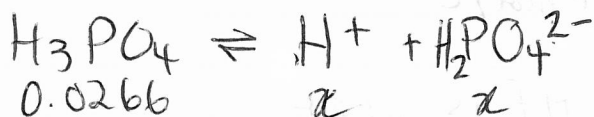
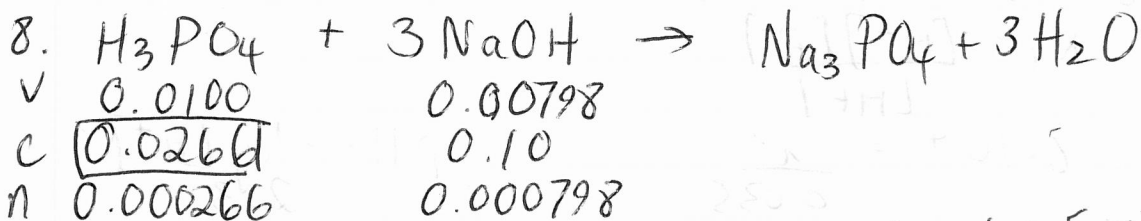
$$[\text{H}^+] = \frac{10^{-14}}{[\text{OH}^-]} = 5.05 \times 10^{-12} \text{ mol/L}$$



$$n_{\text{NaOH}} = CV = 0.00842 \text{ mol}$$

$$n_{\text{HCl}} = n_{\text{NaOH}}$$

$$[\text{HCl}] = \frac{n}{V} = 0.3368 \text{ mol/L}$$



$$\text{pH} = -\log[\text{H}^+] = 1.87$$

$$K_a = \frac{[\text{H}^+][\text{H}_2\text{PO}_4^{2-}]}{[\text{H}_3\text{PO}_4]}$$

$$6.9 \times 10^{-3} = \frac{x^2}{0.0266}$$

$$[\text{H}^+] = 0.0135 \text{ mol/L}$$