

**CHM-102****Practice Problems**

**HCN (hydrocyanic acid) is a weak acid with a  $K_a$  of  $6.2 \times 10^{-10}$ .**

- (a) Write an equation showing the reaction of HCN with water.
  
- (b) Write the equilibrium expression for this reaction.
  
- (c) Determine the pH of a 0.15 M solution of HCN.
  
- (d) What is the conjugate base of HCN?
  
- (e) What is the value of  $K_b$  for the conjugate base of HCN?
  
- (f) Write an equation showing the reaction of the conjugate base of HCN with water.
  
- (g) Determine the pH of a 0.15 M solution of KCN.
  
- (h) Determine the pH of a solution that contains 0.15 M HCN and 0.35 M KCN.