Acids and Bases: Identification and Reactions

1. Predict the products of the following reactions. Label the acids, bases (Lewis or Bronsted-Lowry) and conjugates (if applicable). Determine the side that is favored at equilibrium for the reactions between Bronsted-Lowry acids and bases.

   a. 
   b. 
   c. 
   d. 
   e. 

2. Put the following in order of relative acidity and list the major effect(s)
   a. H₂S, HCl, H₂O, NH₃, HBr

   b. 
   c. 

3. Put the following in order of relative stability

   a. 
   b. 
   c. 
   d. 
   e. 

4. Determine the favored structure at equilibrium AND the relative ratio or percentage for each of the following
   a. CH₃COOH at pH = 6.75
   b. ClCH₂COOH at pH 6.76
   c. CH₃NH₃⁺ at pH = 7
   d. HCN at pH = 9.1
   e. H₂S at pH = 9.1