Station 1:

In the following equilibria, predict whether reactants or products are favoured.

1. H2S + NH3  HS- + NH4+
2. H2PO4- + HS-  HPO4-2 + H2S
3. CH3COOH + PO4-3  CH3COO- + HPO4-2
4. H2O2 + SO3-2  HO2- + HSO3-

Station 2:

Write the major equilibrium reactions which occur when the following substances are placed in pure water.

1. HSO4- and NO2-
2. HCO3- and HSO3-
3. HSO3- and HC2O4-

Station 3:

1. If Keq = 14 for the equilibrium below, which acid is stronger: H2Te or H2Se?

H2Te + HSe-  HTe- + H2Se

1. Will Keq be greater than or less than 1 for:

HSO4- + NH3  SO4-2 + NH4+

Station 4:

Arrange the following four acids from strongest to weakest:

HOI + H2GeO4-  OI- + H3GeO4 Keq = 8.8 x 10-3

HOCl + OBr-  OCl- + HOBr Keq = 14

HOBr + H2GeO4-  OBr- + H3GeO4 Keq = 7.9 x 102

Station 5:

Given the following 3 acids: H2SO3, H3PO4, and HCOOH, which would form an equilibrium with F- where the reactants are favoured?