Chemistry 102 Name:_____

ACID & BASE STRENGTH
Exit Ticket 11

1. Place the species in each of the following groups in order of increasing acid strengths. Give reasons for the orders you chose.

   a) H_2O, H_2S, H_2Se

   b) CH_3CO_2H, F_3CCO_2H, FCH_2CO_2H, F_2CHCO_2H

   c) NH_4^+, PH_4^+

2. Will the following oxides give acidic, basic or neutral solutions when dissolved in water? Write equations to justify your answers.

   a) CaO

   b) SO_2

   c) Cl_2O

3. Using your textbook for any information you need, calculate the equilibrium constant for the following aqueous reactions:

   a) $NH_3 + H_3O^+ \rightleftharpoons NH_4^+ + H_2O$

   b) $HNO_2 + OH^- \rightleftharpoons NO_2^- + H_2O$

4. Without relying on a pKa table, rank each set of compounds in order of decreasing acidity. (Note: Where there are more than one hydrogen, the acidic hydrogens are indicated in bold type). Give a reason for your choices.

a) $(CH_3)_2P–\mathbf{H}$ $CH_3S–\mathbf{H}$ Cl–H

b) NH_4^+ H_3O^+

5. Based on the information given, determine which direction the equilibrium favors in each reaction below. Give a rationale for your choices.