CHEMISTRY 31
Quiz 3 - 10 minutes
Spring, 2017

Name _____ Lab Section _____

1. The concentration of iron(III) in a solution can be determined by adding SCN^- to form the colored metal ligand complex, $FeSCN^{2+}$. The K value for $Fe^3 + SCN^- \leftrightarrow FeSCN^{2+}$is 1050. NaSCN is added to an Fe^{3+} containing sample to create the complex. If after mixing, the concentration of the complex is measured to be 3.1×10^{-4} M (based on absorption of light) and the equilibrium concentration of SCN^- is 0.20 M, calculate the concentration of Fe^{3+} in equilibrium with SCN^- and the complex. (6 pts)

2. Based on the K_a values listed in the table below, rank the following solutions from most basic to least basic (when the salts are dissolved in water). (4 pts)
Salts: 0.1 M NaF, 0.1 M KBr, 0.1 M NaClO

Most Basic Least Basic

Compound	HBr	HF	HClO
K_a	>1 (large)	6.8×10^{-4}	3.0×10^{-8}