Name

Relative Strength of oxidation/Reduction

It is important to understand who can do what… what are to possible options (ox/red)
Based upon possible oxidation states/charges fill in the blanks below.

a) Li (gain/Lose) 1 e^- ⇒ Li^{+1} Voltage: −3.05

b) Ag^+ (gain/Lose) 1 e^- ⇒ Ag^0 Voltage: +.85V

c) F_2 (gain/Lose) 2 e^- ⇒ $2F^-$ Voltage: 2.87V

d) Cl^- (gain/Lose) 2 e^- ⇒ Cl_2 Voltage: −1.36V

e) Sn^{2+} (gain/Lose) 2 e^- ⇒ Sn^0 Voltage: −.14

Sn^{2+} (gain/Lose) 2 e^- ⇒ Sn^{+4} Voltage: −.15V

Based on the information to the left, which of the substances could I_2 Oxidize Write the reactions below

$2F^- + I_2 \rightarrow 2I^-$ +0.53V

Note: must choose (Lose)
Net voltage must > zero

$I_2 + Sn^{2+} \rightarrow 2I^- Sn^{4+}$ only Sn^{2+}

+.55
−.15
+.38V

2. a. [illegible] ns.

[illegible] ns. [illegible]

b [illegible]

Many metallic elements behave as reducing agents.

a. Describe an experiment to compare the relative chemical activity of metals, X, Y, and Z as reducing agents. These metals can be oxidized to form the divalent cations, X^{2+}, Y^{2+}, and Z^{2+}. Materials available include the nitrate salts of these metals, for example, $X(NO_3)_2$ and samples of the three metals. – Add a metal (X, Y, Z) to a cation solution.
– Look For Rxn

b) What results are observed in the two test tubes below if Y is the best reducing agent and Z is the poorest reducing agent?

$Y \rightarrow Y^{+2} + 2e^-$

$X \rightarrow X^{+2} + 2e^-$

$Z \rightarrow Z^{+2} + 2e^-$