

Electrochemistry In Class

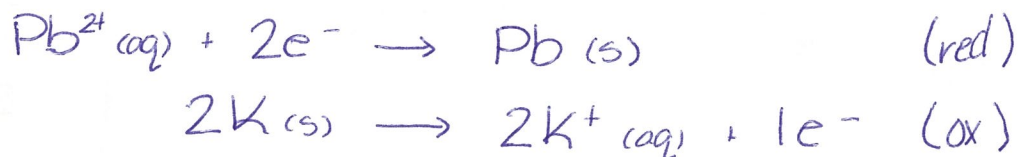
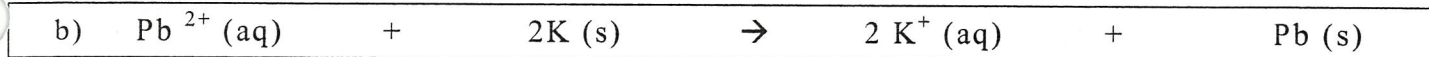
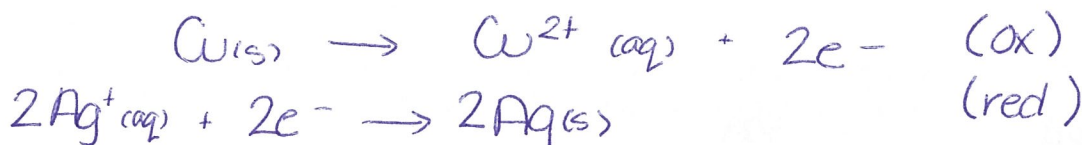
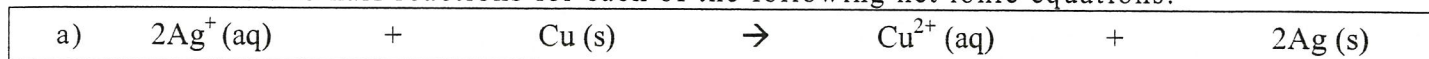
Complete the following questions show all steps if necessary for full marks.



1. State whether the following changes are *oxidation or reduction*, and write the *electron* lose/gain into the equation: (2 each)

| | | | | | OXI or RED |
|----|----------------|------------|---------------|------------------|------------|
| a) | $3 P_4 (s)$ | $+ 12 e^-$ | \rightarrow | $12 P (s)$ | R |
| b) | $Al^{3+} (aq)$ | $+ 3 e^-$ | \rightarrow | $Al (s)$ | R |
| c) | $Aa (aq)$ | | \rightarrow | $Aa^{2+} (aq)$ | Ox |
| d) | $Bb_3 (aq)$ | $+ 6 e^-$ | \rightarrow | $3 Bb^{2-} (aq)$ | R |
| e) | $Cc^{2+} (aq)$ | $+ 2 e^-$ | \rightarrow | $Cc (s)$ | R |

2. Write the two half reactions for each of the following net ionic equations:



3. For each reaction below, **identify**: (0.5 each)

a) the atom oxidized

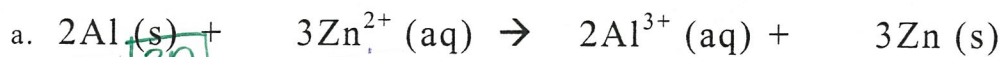
b) the atom reduced

c) the oxidizing agent

d) the reducing agent

e) the oxidation half reaction

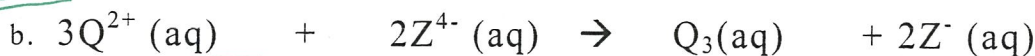
f) the reduction half reaction



oxi:



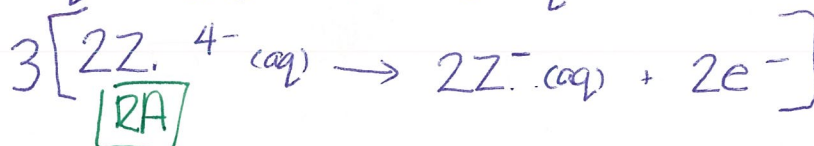
red:



red:



oxi:

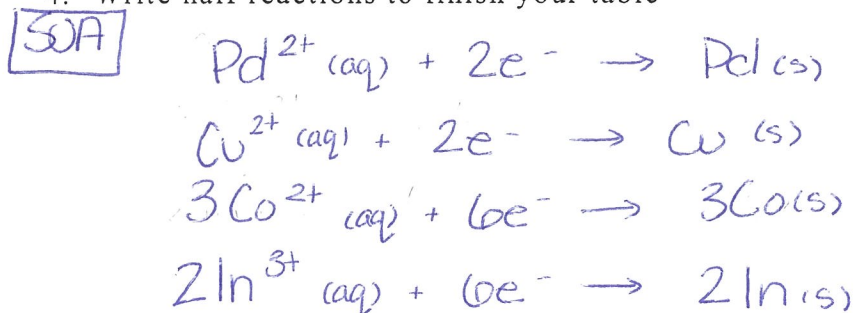


4. Develop a redox table from the following 3 reactions. (6)



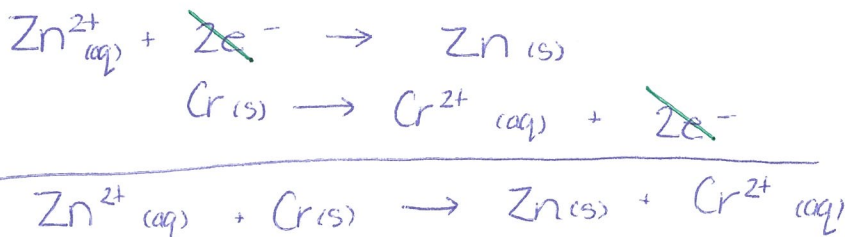
Hint! For FULL marks:

1. Identify the OA and RA for each reaction
2. If spontaneous, then OA is above RA on your table
3. List the relative rankings
4. Write half reactions to finish your table



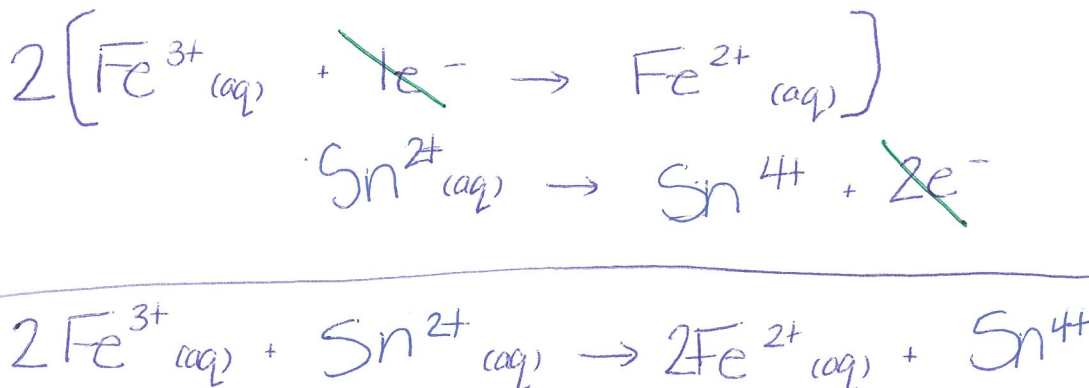
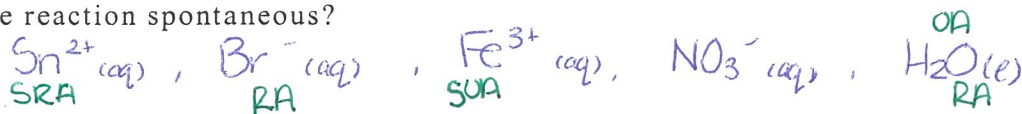
SRA

5. Determine the net ionic equation for the reaction that occurs when a strip of chromium is placed in an aqueous solution of zinc nitrate. Is the reaction spontaneous?



OA → RA
= Spont.

6. Aqueous solutions of tin II bromide and iron III nitrate are mixed. Determine the net ionic equation. Is the reaction spontaneous?



OA → RA
Spont.