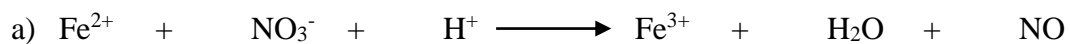
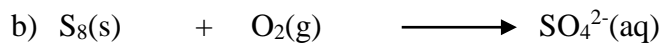
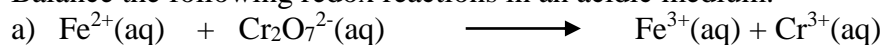


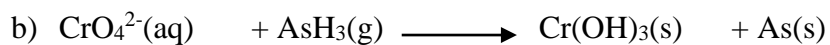
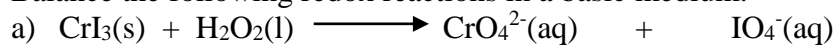
1) Which of the following elements is getting oxidized and which is getting reduced? Also indicate the elements is an oxidizing and which is a reducing agents the above reactions?



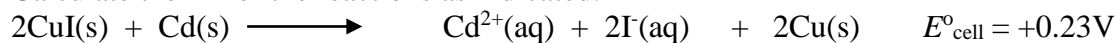
2) Balance the following redox reactions in an acidic medium.



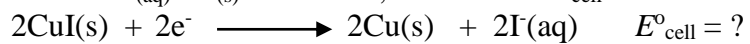
3) Balance the following redox reactions in a basic medium.



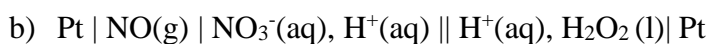
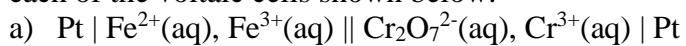
4) Calculate the  $E^\circ$  for the reactions as indicated.



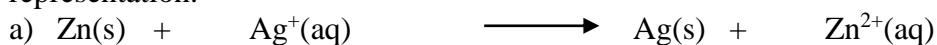
If  $E^\circ_{\text{Cd}^{2+}(\text{aq})/\text{Cd}(\text{s})} = -0.403\text{V}$ , what is the  $E^\circ_{\text{cell}}$  for the reaction below?



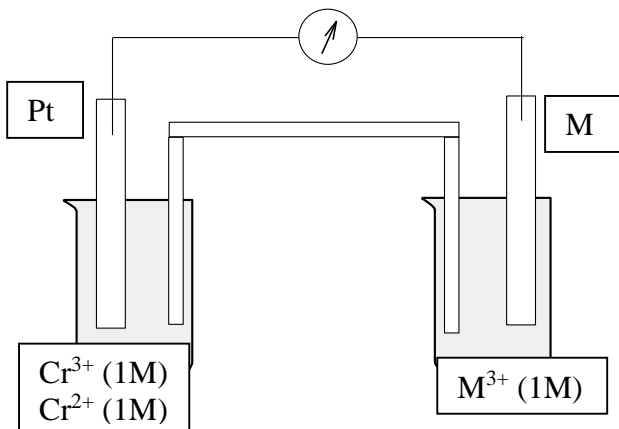
5) Write the equation for the half reactions and overall cell reaction and calculate the  $E^{\circ}_{\text{cell}}$  for each of the voltaic cells shown below.



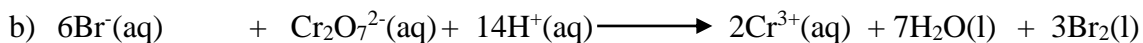
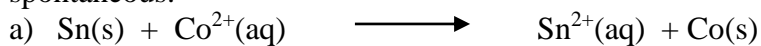
6) Write the half reactions for the following redox equations and show it in a voltaic cell representation.



- 7) From the indicated voltages for the voltaic cell shown below, determine the standard electrode potential  $E_{M^{3+}/M}^{\circ}$ , if the metal M is a) In,  $E_{\text{cell}}^{\circ} = 0.086 \text{ V}$  and b) Cr,  $E_{\text{cell}}^{\circ} = -0.32 \text{ V}$ .



- 8) Predict whether the following reactions will occur as written or no, i.e. if they are spontaneous.



- 9) Are the following reactions possible – yes or no?

a) Silver metal gets oxidized by HCl.

b) Reduction of  $\text{Sn}^{4+}(\text{aq})$  to  $\text{Sn}^{2+}(\text{aq})$  by  $\text{Cu(s)}$ .