Sapresupto:

Electrochem ④ Calculating E° [redacted].

1) Determine the E° for $Ce^{4+} + e^- \rightarrow Ce^{3+}$ given the E°_{cell} for the following reaction is 1.887 V

$$Co_{(s)} \mid Co^{2+}_{(aq)} \parallel Ce^{4+}_{(aq)}, Ce^{3+}_{(aq)} \mid Pt_{(s)}$$

anode . cathode (redn.

$Co^{2+} + 2e^- \rightarrow Co \quad E^\circ = -0.277$

$E_{cell} = E_{cath.} - E_{anode}$.

$1.887V = E_{cath} - (-0.277)$

$1.887 - 0.277 = E_{cath}$.

$\boxed{E_{cath} = 1.610V}$

② Determine $E^\circ_{Sm^{2+}/Sm}$ using the following cell info.

$$Sm_{(s)} \mid Sm^{2+}_{(aq)} \parallel I^-_{(aq)} \mid I_{2(s)} \mid Pt_{(s)} \quad E^\circ_{cell} = 3.21V$$

anode cath.:

$I_2 + 2e^- \rightarrow 2I^- \quad E^\circ = 0.555V$

$E^\circ_{cell} = E^\circ_{cath} - E^\circ_{anode}$.

$3.21V = 0.535 - E_{anode}$.

$3.21 - 0.535 = -E_{anode}$.

$\boxed{E_{anode} = -2.67}$.

Sapnalupta.

Electrochem ④ Calculating E°.

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$$Co_{(s)} \mid Co^{2+}_{(aq)} \parallel Ce^{4+}_{(aq)}, Ce^{3+}_{(aq)} \mid Pt_{(s)}$$

anode . cathode / redn.

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$E_{cell} = E_{cath.} - E_{anode}$.

$1.887V = E_{cath} - (-0.277)$

$1.887 - 0.277 = E_{cath}$

$$\boxed{E_{cath} = 1.610V}$$

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② Determine $E^\circ_{Sm^{2+}/Sm}$ using the following cell info.

$$Sm_{(s)} \mid Sm^{2+}_{(aq)} \parallel I^{-}_{(aq)} \mid I_{2(s)} \mid Pt_{(s)} \quad E^\circ_{cell} = 3.21V$$

anode cath.

$I_2 + 2e^- \longrightarrow 2I^- \quad E^\circ = 0.535V$

$E^\circ_{cell} = E^\circ_{cath} - E^\circ_{anode}$.

$3.21V = 0.535 - E_{anode}$.

$3.21 - 0.535 = - E_{anode}$.

$$\boxed{E_{anode} = -2.67}$$