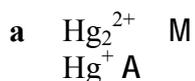


Answers to practice exam questions for Chapter 3 Electrochemistry

Question 1



c
$$E^\circ_{\text{cell}} = E_{\text{RHE}} - E_{\text{LHE}}$$
$$= +0.24 \text{ V} - (-0.15 \text{ V})$$
$$= 0.39 \text{ V}$$

A = correct equation, but minor error, M = correct voltage with units



e Calomel electrode will be LHE

$$E^\circ_{\text{cell}} = E_{\text{RHE}} - E_{\text{LHE}}$$
$$= -0.15 \text{ V} - (+0.24 \text{ V})$$
$$= -0.39 \text{ V}$$

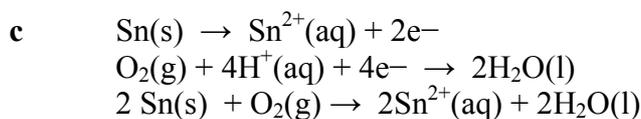
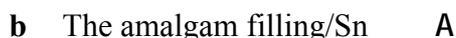
A = correct equation, but minor error, M = correct voltage with units

Question 2

a Fluorine is a very strong oxidising agent (oxidant) / High E°
A = one point, M = both points

b $E^\circ(\text{Cl}_2) > E^\circ(\text{Br}_2)$ / Cl_2 is the stronger oxidising agent / calculation of $E^\circ_{\text{R}} > 0$
A one point, M = both points

Question 3



A = correct half equations, M = correct balanced ionic equation (state symbols not required)

d
$$E^\circ_{\text{cell}} = E_{\text{RHE}} - E_{\text{LHE}}$$
$$= +0.82 \text{ V} - (-0.14 \text{ V})$$
$$= +0.96 \text{ V}$$

A = correct equation, but minor error, M = correct voltage with units

e The saliva acts as the electrolyte/salt bridge and allows the ions to move.

A = one point, M = both points