

2(a)	the (3)d and (4)s sub-shells / orbitals / electrons are close / similar in energy
2(b)	species or ion formed by a central metal atom/ion AND surrounded by/bonded to (one or more) ligands
2(c)(i)	NaOH / OH ⁻ (aq) AND precipitation / ligand exchange / deprotonation / acid–base
2(c)(ii)	M1: Fe(H₂O)₄(OH)₂ is oxidised (from + 2 to + 3 on standing) M2: $E^\ominus$ of Fe(H₂O)₃(OH)₃ is more negative than $E^\ominus$ of O₂ OR $E^\ominus_{\text{cell}} = 0.40 - (-0.56) = (+)0.96 \text{ V}$ M3: $4\text{Fe}(\text{H}_2\text{O})_4(\text{OH})_2 + \text{O}_2 \rightarrow 4\text{Fe}(\text{H}_2\text{O})_3(\text{OH})_3 + 2\text{H}_2\text{O}$
2(d)	$\Delta G^\ominus = -2 \times 1.67 \times 96\,500 = -322\,310 \text{ J mol}^{-1}$ M1: $\Delta G^\ominus = -nE^\ominus_{\text{cell}}F$ AND $n = 2$ OR $-2 \times 1.67 \times 96\,500$ M2: $\Delta G^\ominus = -322.3 \text{ kJ mol}^{-1}$