

## Worksheet: Electrochemistry

IB · Class 12 · Chemistry · 5 questions · 13 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 13

**Q1.** Calculate  $E_{\text{cell}}$  for  $\text{Zn}|\text{Zn}^{2+}||\text{Ag}^{+}|\text{Ag}$  ( $E(\text{Zn}^{2+}/\text{Zn}) = -0.76 \text{ V}$ ,  $E(\text{Ag}^{+}/\text{Ag}) = +0.80 \text{ V}$ ). [2 marks]

**Q2.** Find  $\Lambda^{\circ}$  for  $\text{CH}_3\text{COOH}$  given  $\lambda^{\circ}(\text{H}^{+}) = 349.8$  and  $\lambda^{\circ}(\text{CH}_3\text{COO}^{-}) = 40.9 \text{ S cm}^2/\text{mol}$ . [2 marks]

**Q3.** For  $2\text{Al} + 3\text{Cu}^{2+} \rightarrow 2\text{Al}^{3+} + 3\text{Cu}$ ,  $E^{\circ} = 2.0 \text{ V}$ . Calculate  $\Delta G^{\circ}$ . [3 marks]

**Q4.** Find the reduction potential of a Cu electrode in 0.001 M  $\text{CuSO}_4$  at 25 C ( $E^{\circ} = +0.34 \text{ V}$ ). [3 marks]

**Q5.** A 0.05 M KCl solution has conductivity 0.007 S/m at 25 C. Find the molar conductivity. [3 marks]