

ELECTROCHEMISTRY

1. How conductivity of strong and weak electrolyte vary with Concentration and why?
2. State and explain Kohlrausch's law with example?
3. Conductivity of 0.0241 M acetic acid is $7.896 \times 10^{-5} \text{ S cm}^{-1}$. Calculate its molar conductivity and if λ° for acetic acid is $390.5 \text{ Scm}^2 \text{ mol}^{-1}$. What is its dissociation constant?
4. Calculate λ° for CaCl_2 and MgSO_4 when λ° for $\text{Ca}^{+2} = 119.0$, $\text{Cl}^- = 76.3$ and $\text{Mg}^{+2} = 106.0$, $\text{SO}_4^{2-} = 160$ all in $\text{cm}^2 \text{ mol}^{-1}$.
5. The conductivity of $1.028 \times 10^{-3} \text{ M}$ acetic acid is $4.95 \times 10^{-5} \text{ S cm}^{-1}$. Calculate the dissociation constant if $\lambda^\circ(\text{CH}_3\text{COOH}) = 390.5 \text{ S cm}^2 \text{ mol}^{-1}$.