Q.3 The resistance of a conductivity cell with cell constant 1.14 cm^{-1}, containing 0.001 M KCl at 298 K is 1500 Ω. The molar conductivity of 0.001 M KCl solution at 298 K in S cm^2 mol^{-1} is _____. (Integer answer)

27th Aug Evening Shift 2021

Ans 3.

$$K = \frac{1}{R} \times \frac{l}{A} = \left(\left(\frac{1}{1500} \right) \times 1.14 \right) \text{ S cm}^{-1}$$

$$\Rightarrow \Lambda_m = 1000 \times \frac{\left(\frac{1.14}{1500} \right)}{0.001} \text{ S cm}^2 \text{ mol}^{-1}$$

= 760 S cm^2 mol^{-1}

$\Rightarrow$ 760