B.E. (Chemical) 1ˢᵗ year, semester 1
(Chemistry -1) BS 103
MST 1
Max. Marks:25
Time 1h

Q1 (a) Why is the electron wave called a standing wave? (2)

    (b) What does the symbol Ψ^2 stand for. Why is Ψ^2 used instead of Ψ. (2)

    (c) Ψ for a standing wave is defined by the following equation

       $\Psi = A\sin\frac{2\pi x}{\lambda}$ along the x- axis. Formulate Schrodinger Wave equation from this.(8)

(CO4 Get an introductory idea of quantum mechanics as applied to structure of atom)

Q2. (1). Define the following;

    (a) Electrochemical equivalent

    (b) Transport number

    (c) Ionic mobility

    (d) Equivalent conductance

    (e) Activity coefficient   (5)

    (2). In a cell containing a solution of silver nitrate,a certain amount of current was passed for 3h. If 60.8 g of silver was deposited, calculate the current strength. (4)

    (3). Specific conductance of a saturated aqueous solution of AgCl at 25^0 C is 3.41×10^{-6} ohm $^{-1}$ cm$^{-1.}$ Specific conductance of water is 1.60×10^{-6} ohm $^{-1}$ cm^{-1}. Determine the solubility of AgCl in water. Ionic conductance of Ag^{+1} and Cl^{-1} is 60.3 and 78.0 ohm $^{-1}$ cm$^{2.}$ (4)

(CO1 Learn the principles and application of electrochemical processes)