

B.Sc SEMESTER-IV

MODEL PAPERS

PHYSICAL CHEMISTRY, (CC-X)

LONG QUESTIONS

- Q.1- Explain the terms conductance, specific conductance, equivalent conductance and molar conductance. How is specific conductance related to equivalent conductance and molar conductance?
- Q.2- State and explain Kohlrausch's law. Illustrate how this law is used for calculation of molar ionic conductance at infinite dilution of weak electrolytes.
- Q.3 (i)-What are the main postulates of Arrhenius theory of ionization? (ii) Explain Ostwald's dilution law for weak electrolytes.
- Q.4 (i) Discuss Faraday's laws of electrolysis. (ii) A current of 2.68 ampere is passed for one hour through an aqueous solution of copper sulphate using copper electrodes. Calculate the change in mass of cathode and that of the anode. (Atomic mass of copper = 63.5g)
- Q.5- Write Nernst equation. Use the equation to derive the expression for the cell potential of the following cell. $\text{Al}/\text{Al}^{3+}(\text{aq}) \parallel \text{Cu}^{2+}(\text{aq})/\text{Cu}$
- Q.6- What is dipole moment? Write a note on dipole moment and molecular structure. Why dipole moment of cis isomers is higher than Trans isomers?

SHORT QUESTIONS

- Q.7- Write a short note on diamagnetism and paramagnetism.
- Q.8- What are reference electrode? Discuss the working of hydrogen electrode.
- Q.9- Discuss the working of Galvanic cell. How it is different from electrolytic cell.
- Q.10- Write short notes on; (i) Liquid junction potential (ii) Reversible electrode
- Q.11- How do specific conductance and equivalent conductance vary with dilution?
- Q.12- Explain briefly: (i) Relaxation Effect (ii) Electrophoretic effect.
- Q.13- What is an electrochemical series? Discuss any one of its applications.