

Dr. Upasana Issar

B.Sc. (H) Chemistry, II Year (Semester IV)

Name of Paper: Physical Chemistry IV-Conductance & Chemical Kinetics (CBCS)

UPC: 32171403

Contents	Allocation of Lectures	Month wise schedule to be followed	Tutorial/Assignments/Presentation etc
<p>Unit 1: Conductance: Quantitative aspects of Faraday's laws of electrolysis, Arrhenius theory of electrolytic dissociation. Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. Molar conductivity at infinite dilution. Kohlrausch's law of independent migration of ions. Debye-Huckel-Onsager equation, Wien effect, Debye-Falkenhagen effect, Walden's rule. Ionic velocity, mobility and their determination, transference number and its relation to ionic mobility, determination of transference number using Hittorf and Moving Boundary methods.</p>	11	1 st week of Jan- 1 st week of Feb	<ul style="list-style-type: none">• Syllabus Overview• Books Suggestions• Related Examples and Problem solving session
<p>Unit 1 (Continued) Applications of conductance measurement: (i) degree of dissociation of weak electrolytes, (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts, (iv) conductometric titrations,(v) hydrolysis constants of salts.</p> <p>Unit 4:</p>	12	2 nd week of Feb – 3 rd week of March	<ul style="list-style-type: none">• Numerical Solving• Doubt Session• Assignment allocation

<p>Photochemistry: Characteristics of electromagnetic radiation, Jablonsky diagram.</p> <p>Lambert-Beer's law and its limitations, physical significance of absorption coefficients.</p> <p>Laws of photochemistry,</p>			
<p>Unit 4 (Continued):</p> <p>Quantum yield, actinometry, examples of low and high quantum yields.</p> <p>Photochemical equilibrium and the differential rate of photochemical reactions, photosensitized reactions, quenching.</p> <p>Role of photochemical reactions in biochemical processes, photostationary states, chemiluminescence.</p>	08	1 st week of April – 4 th week of April	<ul style="list-style-type: none"> • Numerical Solving • Doubt Session • Previous university papers discussion • Assignment Collection • Result discussion

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