

DEVI AHILYA VISHWAVIDYALAYA, INDORE

M.Sc. CHEMISTRY (SEMESTER -III)

Paper No. _____
 Compulsory / Optional _____
 Max. Marks _____

: II (Code-MCH-502)
 : Compulsory
 : 100

PAPER II : PHOTOCHEMISTRY

Unit-1	Photochemical Reactions Interaction of electromagnetic radiation with matter, types of excitations, fate of excited molecule, quantum yield, transfer of excitation energy, actinometry.
Unit-2	Determination of Reaction Mechanism Classification, rate constants and life times of reactive energy state, determination of rate constants of reactions. Effect of light intensity on the rate of photochemical reactions. Types of photochemical reactions-photo dissociation, gas-phase photolysis.
Unit-3	Photochemistry of Alkenes Intramolecular reactions of the olefinic bond-geometrical isomerism, cyclisation reactions, rearrangement of 1,4- and 1,5-dienes. Photochemistry of Aromatic Compounds Isomerisations, additions and substitutions.
Unit-4	Photochemistry of Carbonyl Compounds Intramolecular reactions of carbonyl compounds-saturated, cyclic and acyclic, β , γ unsaturated and α , β unsaturated compounds, cyclohexadienones. Intermolecular cycloaddition reactions-dimerisations and oxetane formation.
Unit-5	Miscellaneous Photochemical Reactions Photo-Fries reactions of annilides, Photo-Fries rearrangement. Barton reaction. Singlet molecular oxygen and its reactions. Photochemical formation of smog. Photodegradation of polymers. Photochemistry of vision.

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Essentials of Molecular Photochemistry, A Gilbert and J. Baggott, Blackwell Scientific Publication.

3. *Molecular Photochemistry*, N.J. Turro, W.A. Benjamin.
4. *Introductory Photochemistry*, A. Cox and T. Camp, McGraw Hill.
5. *Photochemistry*, R.P. Kundall and A. Gilbert. Thomson Nelson.
6. *Organic Photochemistry*, J. Coxon and B. Halton, Cambridge University Press.

Q Shanna
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