



**Avinashilingam Institute for Home Science and Higher Education for Women**  
(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD  
Re-accredited with A++ Grade by NAAC CGPA 3.65/4, Category I by UGC  
Coimbatore - 641 043, Tamil Nadu, India

**Continuous Internal Assessment -II–April 2025**  
**Semester II**

**Class : IPG**  
**Major : Chemistry**

**Time: 2 hours**  
**Max. Marks: 60**

**23MCHC07 Organic Chemistry-II**

**Course Outcomes**

1. Acquire knowledge of Molecular orbital symmetry and be able to evaluate concerted reactions via FMO and PMO approach, electrocyclic reactions, cycloadditions and sigmatropic rearrangements
2. Acquire knowledge of Photochemical reactions of alkenes, carbonyl and aromatic compounds  
Identify the mechanism of various photochemical reactions
3. Will be able to predict the stereochemistry and mechanism of addition and elimination reactions
4. Will be able to assess the mechanism and reactivity of electrophilic substitution reactions
5. Will have expertise in identifying the transformations, the reagents and planning organic synthesis

**Part A**

**Choose the correct answer**

**6 x 1 = 6**

1. Which of the following reactions of addition to the alkenes occurs in the anti manner? CO2K1  
a. Hydroboration oxidation                      b. Addition of Br<sub>2</sub>  
c. Addition of H<sub>2</sub>                                      d. Addition of HCl
2. In an addition reaction to an alkene, the π bond plays the role of CO2K1  
a. nucleophile                      b. electrophile                      c. leaving group                      d. A and B
3. Which of the following conditions results in the formation of a C-C bond? CO5K2  
a. Alkyl halide + EtONa                      b. Alcohol + CH<sub>3</sub>SOCl<sub>2</sub>  
c. Organometallics + alcohol                      d. Organometallics + carbonyl
4. A strong base is needed for CO3K1  
a. E<sub>1</sub> only                      b. E<sub>2</sub> only                      c. both E<sub>1</sub> and E<sub>2</sub>                      d. neither E<sub>1</sub> nor E<sub>2</sub>
5. An intramolecular migration of a group along a conjugated Pi system is termed as  
a. sigmatropic rearrangement                      b. Claisen rearrangement  
c. Barton reaction                      d. internal conversion CO1K1
6. Olefins have -----inter system crossing efficiency CO1K2  
a. negligible                      b. highest                      c. infinite                      d. negative

**Part B**

**3 x 6 = 18**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

7. a. The order of reactivity of addition of halogen acids is HI>HBr>HCl>HF. Justify CO3K2  
(or)
7. b. Explain sharpless asymmetric epoxidation CO3K2
8. a. Illustrate pyrolytic elimination with example CO3K2  
(or)
8. b. Explain Suzuki coupling CO5K2
9. a. Explain Quenching, quantum efficiency and quantum yield CO2K1  
(or)
9. b. Explain how correlation diagram can be used to explain [2+2] cycloaddition reaction under thermal and photochemical conditions. CO1K2

**Part C**

**3 x 12 = 36**

**Answer ALL questions**

**Each answer should not exceed 800 words or four pages**

10. a. Explain the stereochemistry and mechanism of addition of bromine to cis and trans butene CO3K2  
(or)
10. b. Illustrate the regiochemistry of addition of HBr to styrene. CO3K2
11. a. Discuss the mechanism and stereochemistry of E<sub>2</sub> elimination CO3K2  
(or)
11. b. Illustrate functional group interconversion with example CO5K2
12. a. How is PMO approach used to explain thermal and photochemical electrocyclic reactions? CO1K2  
(or)
12. b. Explain photochemistry of 1,3 butadiene CO2K1

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**Staff in Charge : Dr. P.Lalitha and Dr.V.Sharulatha**

