PG–CN–1037 MCHEN–21

P.G. DEGREE EXAMINATION – DECEMBER, 2023.

Chemistry

Second Year

ORGANIC CHEMISTRY – II

Time : 3 hours Maximum marks : 70

PART A — ($5 \times 5 = 25$ marks)

Answer any FIVE questions out of Eight questions in 300 words.

All questions carry equal marks.

1. Discuss sigmatropic rearrangement in pericyclic reactions.

2. Give the synthesis of imidazole and isoquinoline.

3. Discuss the biosynthesis of nicotine.

4. List out the characteristics of photoreactions.

5. Analyze Intra and intermolecular hydrogen bonding in IR Spectroscopy.

6. Explain Woodward and Hoffmann rules in pericyclic reactions.

7. Discuss Barton reaction.

8. Define the following with examples

   (a) Chemical shift

   (b) Coupling constant in NMR spectroscopy.

PART B — ($3 \times 15 = 45$ marks)

Answer any THREE questions out of Five questions in 1000 words.

All questions carry equal marks.

9. Discuss the following rearrangements with mechanism:

   (a) Wagner-Meerwein rearrangement

   (b) Baeyer-Villiger rearrangement (7 + 8)

10. (a) List out the reactivity of pyridine. (10)

    (b) Explain the synthesis of indole. (5)

11. Describe Takasago synthesis of menthol.

12. Explain :

(a) Photooxidation

(b) Photoreduction

(c) Photosensitization. (5 + 5 + 5)

13. Discuss the types of electronic transitions with examples.

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