OCTOBER - 1998

[SM 707] **Sub Code : 4182**

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper II — ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Time : Three hours — Maximum : 90 marks
Two and half hours for Sec. A and Sec. B — Sec. A & Sec. B : 60 marks
Section C : 30 marks

Answer Section A and B on Separate Answer Books.

Answer Section C in answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) What is recemic modification? Discuss the factors which lead to the formation of recemic modification. (5)

(b) Mention the various methods available for resolving the recemic modification and describe any one method in detail. (5)

(c) What is assymetric synthesis? Give examples under appropriate headings. (5)

2. (a) Give the necessary conditions for a compound to exist as enantiomers. Give examples. (5)

(b) Discuss optical isomerism in compounds which do not contain an asymmetric carbon atom. Give examples. (5)

(c) Define the term conformation. Give the different conformations possible for Cyclohexane and discuss their stability. (2 + 3 = 5)

3. With a suitable example, discuss the mechanism involved in the following. (3 × 5 = 15)

(a) Meerwin–Pondorf reduction

(b) Schmidt rearrangement

(c) Fischer Indole Synthesis.

4. Write a detailed note on:
   (a) Hybridisation of orbitals
   (b) Modern concept of double bond
   (c) Evidence for Tetrahedral nature of carbon atom.

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Give the mechanism of Howarth Synthesis of Naphthalene and give any two reactions of Naphthalene.

6. (a) Why Pyridine does not respond to Friedel–Craft's reaction?

(b) Give the mechanism of any one electrophilic substitution reaction answered by THIOPHENE.

7. With the help of suitable example explain the mechanism involved in any two reactions undergone by Isoquinoline.

8. Give the structure and medicinal use of the following drugs.

(a) Phenetoyn (b) Iodoxcyl (c) Methyl thio uracil (d) Chinioform (e) Diethylcarbamazine.

9. Write a note on the stereochemistry of Diphenyl compounds.

10. (a) Compare the synthetic utility of Clemenson–reduction and Wolf–Kieshner reduction.

(b) Give reasons for the greater stability of trans isomers than cis isomers in Alkenes.

11. Give the name, structure and medicinal use of drugs containing the following heterocyles.

(a) Isooxazole (b) Thiazole (c) Imidazole (d) Pyrazole (e) Oxazole.

12. With a suitable example explain why electrophilic substitution readily occurs at the α–carbon in Pyrrole compared to β–carbon.

13. What do you understand by the term aromatic character? Explain why Furan is considered aromatic in nature.

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