

[MB 711]

Second B. Pharm Degree Examination

(New Regulations)

**Paper II - ADVANCED PHARMACEUTICAL
ORGANIC CHEMISTRY**

Time : Three hours Maximum : 90 marks

Two and a half hour Sec. A and B : 60 marks

for Sec. A and B

Answer section A and B in separate answer books

Answer Section C in the answer sheet provided

SECTION—A (2X15 = 30)

Answer any TWO questions

1. Write notes on the synthesis, reactions, structure and basicity of pyridine. Write the structure of three drugs having pyridine ring and mention their use.
2. a) Enumerate the synthetic methods for Diphenyl methane and Triphenylmethane and write notes on the acidic property of these two compounds.
b) Write the structures of important diphenyl ethane and Triphenyl methane derivatives and mention their use. (10+5)
3. a) Explain the mechanism and factors affecting walden inversion.
b) What are conformations? With diagrams show the different conformations of n-Butane. Discuss the relative stability of different conformation. (8+7)
4. a) What is Atropisomerism? What are the conditions for the same? Give examples.
b) What do you mean by asymmetric synthesis? Explain the partial and absolute asymmetric synthesis with examples. (7+8)

SECTION—B (6×5 = 30)

Answer any SIX questions.

5. Write notes on the nomenclature of Hetero cyclic rings.
6. Explain the synthetic methods of furan.
7. Write notes on the structure of naphthalene along with evidence.
8. Explain any two elements of symmetry.
9. Write notes on the isomerism exhibited by cyclopentane derivatives.
10. Explain partial asymmetric synthesis
11. Define the following terms :
a) Chirality
b) Chiral centre
c) Racemic mixture
d) Diastereomers
12. Write the structure of all possible stereoisomers of Tartaric acid and show which one is optically inactive and why?
13. Write the structure of Indole and pyrimidine and name any one drug having the above nucleus with their use.

[MB 714]

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(Revised Regulations)

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for Sec. A and B

Answer Section A and B in separate answer books
Answer Section C in the answer sheet provided

SECTION—A (2 × 15 = 30)

Answer any TWO questions

1. a) Write the structure of naphthalene and briefly mention the conventions used in numbering carbons.
- b) What are the evidences for the structure, including the synthesis of naphthalene.
- c) Explain the reaction of naphthalene with orientation. (2+7+6)

2. a) What is the shape of sp³ hybrid carbon and what are the evidences for the same?
 - b) What do you mean by the elements of symmetry? Explain them with examples.
 - c) What do you mean by conformations? Explain various conformation of cyclohexane and their relative stability. (3+6+6)
3. a) Define hydrogenation and explain various catalyst used for the same.
 - b) Explain the mechanism of catalytic hydrogenation.
 - c) Explain the use of following agents in organic synthesis
 - i) Lead tetra acetate
 - ii) Selenium oxide
 - iii) Lithium aluminium hydride (3+3+9)
4. Write notes on the preparation, structure and properties of
 - a) Pyridine
 - b) Pyrrole

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SECTION - B (6X5 = 30)

Answer any SIX questions.

5. Write three methods of synthesis of Diphenyl methane.
6. Write notes on acidity of Triphenyl methane.
7. Define the following terms with examples
 - a) Enantiomers
 - b) Diastereomers
 - c) Mesocompounds
8. What is asymmetric synthesis? Explain partial asymmetric synthesis.
9. Explain the mechanism of Beckman rearrangement.
10. Complete the following reactions
 - a) $\text{CH}_3\text{CHO} + \text{SeO}_2 \rightarrow$
 - b) $\text{R}-\text{CO}-\text{R} \xrightarrow[\text{HCl}]{\text{Zn amalgam}}$
 - c) $\text{R}-\text{OH} \xrightarrow{\text{Thionyl Chloride}}$
11. What are heterocyclic compounds? Write notes on their nomenclature.
12. Write the structure and use of
 - a) Sulphathiazole
 - b) Mepacrine
 - c) Diethyl carbamazine
 - d) Isoniazide
 - e) Chloroquine
13. Write notes on Atropisomerism.