

September 2010

[KX 707]

Sub. Code: 4182

SECOND B.PHARM. DEGREE EXAMINATION
(ReRevised Regulations)Candidates Admitted upto 2003-04
Paper II – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY
Q.P. Code : 564182

Time : Three hours

Maximum : 90 marks

I. Essay Questions : Answer any TWO questions.

(2X 20 = 40)

1. a) What is asymmetric synthesis? Give examples.
b) What are racemic modifications? Explain the difference methods that are utilized for the resolution of racemic modification.
2. a) Illustrate the sequence rules for assigning the R and S configuration to an optically active compound.
b) Outline the preparation and discuss the important chemical reactions of
(i) Diphenyl methane (ii) Naphthalene
3. a) Define reduction. Give the mechanism involved in Clemmensen reduction and Meerwin pondroff reduction.
b) Define and classify heterocyclic compounds. Write the preparation and important reactions of pyrrole and imidazole.

II. Write Short Notes : Answer any EIGHT questions.

(8X 5 = 40)

1. What is conformational analysis? Explain with an example.
2. Explain the different types of symmetry.
3. Enumerate briefly the configuration of Biphenyl molecule.
4. Discuss the importance of following reactions as synthetic tools.
 - a) Beckmann rearrangement
 - b) Schmidt rearrangement
5. Write the structure and medicinal uses of Nikethemide and Isoniazid.
6. Define Walden inversion. Discuss the factors affecting mechanism of Walden inversion.
7. Give an account of the medicinally important compounds of polynuclear hydrocarbons.
8. Define oxidation and discuss the oxidation with perchloric acid and lead tetra acetate.
9. Write briefly about optical isomerism.
10. Mention the structure and uses of the following heterocyclic derivatives.
 - a) Diadone b) Mepyramine c) Histamine d) Primaquin

III. Short Answers: Answer any FIVE questions.

(5X2 = 10)

1. Give the structure and medicinal uses of Diethyl carbamazine and sulphathiazole.
2. What is meant by Cis and Trans isomers?
3. Distinguish between enantiomers and diastereomers.
4. What happens when pyridine reacts with sodalime in liquid ammonia at 100°C?
5. Write the structures of oxazole and isoxazole.
6. Define Darzein reactions.
7. Write two examples of piperazine nucleus containing medicinal compounds.

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I. Essay Questions : Answer any TWO questions.

(2X 20 = 40)

1. a) Discuss different methods of preparation and chemical reactions of Tri-phenylmethane
- b) Give the skeletal structure and numbering of phenanthrene. Give one method for synthesis and two reactions of phenanthrene.
- c) Give the structure and medicinal uses of any one compound each containing (i) Naphthalene (ii) Anthracene (iii) Phenanthrene. **(8+6+6)**
2. a) Discuss in detail the stereochemistry of Cyclohexane and Biphenyls.
- b) Give one example for Waldane inversion. Describe the various factors which affect the mechanism of Waldone inversion. **(15+5)**
3. a) Give one method of synthesis, any two reactions and anyone medicinal compound along with uses containing following Heterocyclic compounds.
(i) Phenothiazine (ii) Oxazole (iii) Pyrazole (iv) Acridine (v) Quinoline.
- b) Write a note on Birch reduction. **(15+5)**

II. Write Short Notes : Answer any EIGHT questions.

(8X 5 = 40)

1. Explain Diels-Alder reaction.
2. What are the methods available for resolving arademic mixture and explain any one of them.
3. Write a short note on elements of symmetry.
4. Write a note on the nomenclature of Geometrical isomers with examples.
5. Briefly explain optical activity.
6. Write a short note on a symmetric synthesis.
7. Write a note on Catlytic hydrogenation
8. Discuss briefly stereochemistry of Nitrogen compounds.
9. Write the structure and uses of (i) Carbimazole (ii) Phenytoin (iii) Isoniazid (iv) Sulphathiazole (v) Mepacrine.
10. Give an account of the basicity of heterocyclic compounds containing one nitrogen atom.

III. Short Answers: Answer any FIVE questions.

(5X2 = 10)

1. What are the heterocyclic compounds synthesized by (i) Friedlander's synthesis (ii) Gabriel synthesis.
2. Write the products of the following reactions.
(i) Pyridine-1-oxide+Acetic anhydride→
(ii) Pyridine+SO₂Cl₂→
3. Give the structure and medicinal uses of (i) Nikethamide (ii) Histamine.
4. Mention the product formed when furan is subjected to Friedal – Craft's reaction.
5. Name the natural compound having tetrahydro thiophenenucleus.
6. What are Enantiomers and Diasteneomars.
7. Define Darzein reactions.
