FEBRUARY - 2007

[KQ 707] **Sub. Code : 4182**

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper II — ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Time : Three hours Maximum : 90 marks

Theory : Two hours and forty minutes Theory : 70 marks

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

I. Long Essay : (2 × 20 = 40)

Answer any TWO questions.

1. (a) Write the skeletal structure and numbering of following heterocyclic ring systems.

(i) Phenothiazine

(ii) Imidazole

(iii) Acridine

(iv) Thiazole

(v) Pyridine.

(b) Suggest one method for the synthesis of above ring systems.

(c) Write the structure and use of one drug each with above ring system. (5 + 10 + 5 = 20)

2. (a) Define stereoisomerism. Distinguish between the two types of stereoisomerism.

(b) Mention the factors affecting the stability of conformations.

(c) What is a racemic modification? Discuss the properties and methods of resolution of racemic modification. (5 + 5 + 10 = 20)

3. (a) Discuss the utility of the following reagent.

(i) Perchloric acid

(ii) Selenium oxide

(b) Write briefly :

(i) Dehydrogenation

(ii) Birch reduction

(iii) Beckmann rearrangement. (20)

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4. (a) Give one example of medicinally important compound from each of the following and mention their structure and uses. (20)

(i) Phenanthrene

(ii) Naphthalene

(iii) Anthracene.

(b) Give the synthesis of

(i) Di phenyl ethane

(ii) Triphenyl methane.

II. Short notes on : (6 × 5 = 30)

Answer any SIX questions.

1. Write the structure and uses of

(a) Diethyl carbamazine

(b) Nikethamide

(c) Chloroquine

(d) Piperazine

(e) Carbimazole. (5 × 1 = 5)

2. Explain the mechanism of Walden Inversion. (5)

3. Write about :

(a) Skraup's synthesis of quinoline

(b) Advantage of metal hydride reduction over catalytic hydrogenation. (3 + 2 = 5)

4. Write a note on hybridisation of orbitals. (5)

5. Write the products of the following reactions stating their condition.

(a) Furan + Malic anhydride →

(b) Quinoline + $NaNH_2$ →

(c) Indole + HCHO + $(CH_3)_2$ NH →

(d) Acetophenone + Zn/Hg – HCl →

(e) Pyrrole + CH_3 Mg I → (5 × 1 = 5)

6. Differentiate confirmation and configuration. How will you arrive at the absolute configuration? (5)

7. Write notes on elements of symmetry.

8. Write on Fischer indole synthesis.

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[KQ 741] **Sub. Code : 4232**

SECOND B.Pharm. DEGREE EXAMINATION.

(Regulations 2004)

Paper III — ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Time : Three hours | Maximum : 90 marks

Theory : Two hours and forty minutes | Theory : 70 marks

M. C. Q : Twenty minutes | M.C.Q. : 20 marks

I. Long Essay :

Answer any TWO questions. (2 × 20 = 40)

1. (a) Explain the different types of elements of symmetry.

(b) What is racemic modification? Explain the different methods that are utilized for resolution of racemic modification. (6 + 14)

2. (a) Explain the structural elucidation of reserpine along with synthesis.

(b) Write the structures of morphine derivatives and mention their medicinal importance. (16 + 4)

3. (a) Write any two methods of preparation of essential amino acids.

(b) Explain the geometry of peptide linkage.

(c) Write the reactions of pyrrole.

(d) Write the synthesis of phenothiazine and quinoline. (4 + 4 + 7 + 5)

4. (a) Explain the structural elucidation of caffeine along with its synthesis.

(b) Write a note on chemistry of cardiac glycosides. (13 + 7)

II. Short notes on any SIX : (6 × 5 = 30)

(1) Write about any three methods of determination of configuration of geometrical isomers.

(2) Stereochemistry of oximes.

(3) What is Beckmann rearrangement? Write its mechanism.

(4) Write the classification of terpenoids with examples.

(5) Write the synthesis of papaverine and ephedrine.

(6) Write the structures of different fat soluble vitamins and mention their important deficiency diseases.

(7) Write a note on chemistry and medicinal uses of flavanoids.

(8) What is assymmetric synthesis? Give an example.
