[LB 4258] **AUGUST 2012** **Sub. Code: 4258**

SECOND YEAR B.PHARM. EXAM

Paper III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code : 564258

Time: Three hours **Maximum: 100 Marks**

(180 Min) Answer ALL questions in the same order.

I. Elaborate on:	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Define and classify alkaloids with examples.Discuss the chemistry and pharmacological activity of ephedrine.	19	33	20
2. Write the definition, reaction, mechanism and applications of (i)Beckmann rearrangement and (ii) Birch reduction.	19	33	20
II. Write notes on:			
1. Write a brief note on Absolute configuration.	3	8	5
2. Explain Clemmenson's reduction in detail.	3	8	5
3. (i)Fischer indole synthesis (ii) Skraup synthesis.	3	8	5
4. Explain the oxidative uses of lead tetraacetate.	3	8	5
5. Give any two methods of preparation of Oxazole and Thiophene.	3	8	5
6. Explain conformational analysis of ethane.	3	8	5
7. Write short notes on Atropine and related alkaloids.	3	8	5
8. Write the electrophilic substitution reactions of Pyrrole.	3	8	5
III. Short Answers:			
1. Define racemic modification.	1	5	2
2. What are enantiomers.	1	5	2
3. Write the definition and reaction for Meerwein Pondroff reduction.	1	5	2
4. Give any two methods of preparation of pyrimidine.	1	5	2
5. What is dehydrogenation.	1	5	2
6. What are flavonoids.	1	5	2
7. Write any two uses of Selenium oxide.	1	5	2
8. Define alkaloids and give examples.	1	5	2
9. Write the structure of i)Vitamin D ii)Ephedrine	1	5	2
10. Give any two reactions of thiophene.	1	5	2

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[LC 4258] **FEBRUARY 2013** **Sub. Code: 4258**

SECOND YEAR B.PHARM. EXAM

Paper III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code : 564258

Time : Three hours **Maximum: 100 Marks**

(180 Min)

I. ELABORATE ON: **(2x20=40)**

1. a) Write in detail about asymmetric synthesis(10)
   b) Describe the stereochemistry of cyclic compounds(10)

2. a) Describe the chemistry and constitutions of ephedrine(15)
   b) Give the structure and five reactions of atropine(5)

II. SHORT NOTES **(8x5=40)**

1. Write the synthesis of furan
2. Describe the Clemmenson's reduction with suitable reaction
3. Classify heterocyclic compounds with example
4. Explain the Beckmann rearrangement with mechanism
5. Classify flavonoids with example
6. Describe the chemistry of digitoxin
7. Give the chemical reactions of papaverine
8. Describe the chemistry and uses of vitamin-E

III. SHORT ANSWERS **(10x2=20)**

1. Add a note on sequence rule
2. Write any two reactions given by pyridine
3. Give two examples for the oxidative reactions of periodic acid
4. Describe the reactions of thiazole
5. Give the uses of metal hydride
6. Write the preparation of citral
7. Discuss the chemistry of uric acid
8. Write the chemistry of folic acid
9. Sketch the structures of caffeine and theobromine
10. Draw the structure and chemical name of thiamine

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(LD 4258) **AUGUST 2013** **Sub. Code: 4258**

SECOND YEAR B.PHARM. EXAM

PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three Hours **Maximum: 100 marks**

I. Elaborate on: (2X20=40)

1. a) What are confirmational isomers and write in detail about conformational analysis.
   b) Describe the modern theories of double bond with suitable examples.
2. Elucidate the structure of uric acid. Discuss the inter relationship between caffeine, Theophylline and theobromine.

II. Write notes on: (8X5=40)

1. Explain the Schmidt rearrangement with mechanism?
2. Give the chemical reactions of atropine.
3. Describe the chemistry and uses of Vitamin K.
4. Write a brief note on Asymmetric systhesis.
5. Give any two methods of preparation and any three reactions of Furan.
6. Write a brief note on catalytic hydrogenation.
7. What is chirality? Write their significance.
8. Write a note on Walden Inversion.

III. Short Answers on: (10X2=20)

1. Write any two reactions given by pyrimidine.
2. What is Darzens reactions?
3. Give any two reactions of ephedrine.
4. Give any two reaction of indole.
5. Write any two uses of Lithium aluminium hydride.
6. Define alkaloids and give examples.
7. Write the structure and numbering of heterocylic compounds pyrimidine and pyrrole.
8. Medicinal uses of Flavanoids.
9. Define recemic modifications.
10. Write a note on plane of symmetric.

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(LE 4258) **FEBRUARY 2014** **Sub. Code: 4258**

SECOND YEAR B.PHARM. EXAM
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY
Q.P. Code: 564258

Time: Three Hours **Maximum: 100 marks**

I. Elaborate on: **(2X20=40)**

1. a) Describe the absolute and relative configuration.
   b) Stereospecific and stereoselective synthesis.
2. Explain the chemistry and constitution of citral.

II. Write notes on: **(8X5=40)**

1. Clemmenson's reduction.
2. Reaction of furan.
3. Stereochemistry of cyclic compounds.
4. Chemistry of papaverine.
5. Relationship between menthol and thymol.
6. Schmidt rearrangement.
7. Synthesis of thiophene.
8. Structure and uses of Vitamin B_1 and E.

III. Short Answers on: **(10X2=20)**

1. Define glycoside.
2. Classify terpenoids.
3. Structure and uses of digoxin.
4. Define plane of symmetry.
5. Fischer projection.
6. Structure of hespiridine.
7. Two reaction of pyridine.
8. Structure of atropine and ephedrine.
9. Darzen's reaction.
10. Two synthesis of pyrimidine.

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[LF 4258] **AUGUST 2014** **Sub. Code: 4258**

SECOND YEAR B.PHARM. DEGREE EXAMINATION

Paper III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q. P. Code: 564258

Time: Three Hours **Maximum: 100 Marks**

Answer All Questions

I. Essay Questions: **(2 x 20 = 40)**

1. a) What is Walden Inversion explain in detail the mechanism of reaction and factors affecting Walden inversion.

   b) Give important methods of preparation and chemical reactions of Pyridine.

2. a) Give the structural elucidation of Atropine.

   b) Give the definition, mechanism of reaction and applications of Meerwin pondroff reaction and Schimdt reaction

II. Short Notes: **(8 x 5 = 40)**

1. Explain Catalytic hydrogenation.
2. Explain the various methods of nomenclature of Geometrical isomers.
3. Write the chemistry of vitamin A.
4. Elucidate the structure of Caffiene.
5. Explain the chemistry of Lanatosides.
6. Give the Halogenation, Coupling reaction and Reduction reaction of Furan.
7. Write the synthesis of Pyrimidine.
8. Explain any five methods of resolution of racemic mixture.

III. Short Answers: **(10 x 2 = 20)**

1. Give the application of mercuric acetate.
2. Write the structure and medicinal uses of Digitoxin and Theophylline.
3. Write the Friedal craft's reaction and Coupling reaction of Pyrrole.
4. Write any two reactions of Acridine.
5. Give the structure and medicinal uses of Thymol and Hesperidin.
6. Define Enantiomer and Diastereoisomer.
7. Define Clemmenson reaction with example.
8. Write any method of synthesis of phenothiazine.
9. List out the Alkaloidal reagents used for identification.
10. Classify glycosides based on the Aglycones present in it.

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(LG 4258) **FEBRUARY 2015** **Sub. Code: 4258**

SECOND YEAR B.PHARM. EXAMINATION
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 marks**

I. Essay: **(2 x 20 = 40)**

1. a) Write in detail about determination of configuration of geometrical isomerism.
   b) Write notes on Beckmann rearrangement.

2. Explain the chemistry and constitution of Menthol and Vitamin A.

II. Short notes: **(8 x 5 = 40)**

1. Metal hydride reduction
2. Reactions of indole
3. Sequence rule for assigning configuration of optical isomers
4. Give the important electrophillic substitution reactions of pyrrole
5. Chemistry of caffeine
6. Structure and uses of citral and thymol
7. Synthesis of isoxazole
8. Chemistry of sennosides

III. Short answers: **(10 x 2 = 20)**

1. What is chirality?
2. What is Stereomutation?
3. Give the Structure and uses of folic acid
4. Define diastereomers
5. Explain the D and L system in optical isomerism
6. What is Stereoselective synthesis?
7. What is Catalytic dehydrogenation?
8. Give two methods of synthesis of imidazole
9. Classify flavonoids
10. Structure and uses of azepines

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[LH 4258] **AUGUST 2015** **Sub. Code: 4258**

B.PHARM. DEGREE EXAMINATION

SECOND YEAR

PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time : Three Hours **Maximum : 100 marks**

Answer All Questions

I. Essay: **(2 x 20 = 40)**

1. a) What is cis-trans isomerism? Explain the E-Z system of nomenclature.
   b) Explain the various methods of determination of configuration of geometric isomers.
2. a) Define and classify alkaloids. Explain the chemistry of Papaverine.
   b) What are cardiac glycosides? Explain the stereochemistry of cardiac glycosides.

II. Short notes : **(8 x 5 = 40)**

1. Define resolution of racemic modification. Explain the method of resolution by formation of disastereomers.
2. Explain conformational analysis of monosubstituted cyclohexene.
3. Discuss the interrelation between caffeine, theophylline and theobromine.
4. What happens when
   a) Pyridine is oxidized with perbenzoic acid.
   b) Quinoline is treated with sulphuric acid.
   c) Pyrrole is reduced with nickel.
   d) Imidazole is treated with benzoyl chloride.
   e) Furan is treated with maleic anhydride.
5. Explain optical isomerism in meso-tartaric acid.
6. Explain the chemistry of citral.
7. Classify flavonoids and give examples. Write a brief note on hesperidin.
8. Give reasons for the following.
   a) Pyrrole undergoes electrophilic substitution at 2-position.
   b) Pyridine undergoes electrophilic substitution at 3-position and nucleophilic substitution at 2- and 4-positions.

III. Short answers: **(10 x 2 = 20)**

1. What is Walden inversion?
2. What is 1,3-diaxial interaction?
3. What is Birch reduction?
4. Give the structure and use of (a) Thymol (b) Camphor.
5. Define plane of symmetry
6. Give one test for the identification of Atropine.
7. Write any two reactions of isoquinoline
8. What are configurational and conformational isomers?
9. Write any two uses of sodium borohydride
10. What is Schmidt rearrangement?

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(LI 4258) FEBRUARY 2016 **Sub. Code: 4258**

SECOND YEAR B.PHARM. EXAMINATION
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Essay: **(2 x 20 = 40)**

1. Define racemic modification. Explain the various methods of resolution of racemic modification.

2. Define and classify heterocyclic compounds with examples. Explain the nomenclature of heterocyclic compounds. Write the methods of preparation and reactions of quinoline.

II. Short notes: **(8 x 5 = 40)**

1. Explain the stability of the possible conformations of disubstituted cyclohexane.
2. Explain sequence rules giving examples.
3. Compare and contrast Clemmensen reduction and Wolf Kishner reduction.
4. a) Explain the basicity of Pyrrole and Pyridine.
   b) Give any two electrophilic substitution reactions of furan.
5. Explain DL system of nomenclature. What are its disadvantages?
6. Discuss the chemistry and pharmacological activity of Ephedrine.
7. Define and classify Terpenoids. Add a note on the chemistry and uses of Thymol.
8. What are the applications of (a) Selenium oxide (b) Lithium Aluminium Hydride?

III. Short answers: **(10 x 2 = 20)**

1. Why Nitrobenzene is mostly used as oxidizing agent in Skraup synthesis?
2. What is 1, 3-diaxial interaction?
3. Write the structure and numbering of any two 5-membered heterocyclic compounds containing two similar hetero atoms .
4. Give the structure and numbering of (a) Isoquinoline (b) Phenothiazine.
5. Give one test for identification of the Steroidal Nucleus.
6. What are Sennosides?
7. Write any two reactions of Imidazole.
8. Define Enantiomers and Diastereomers.
9. Write the structure and uses of Vitamin $B_{1.}$
10. What do you mean by centre of symmetry? Explain with an example.

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(LJ 4258) AUGUST 2016 **Sub. Code: 4258**

SECOND YEAR B.PHARM. EXAMINATION
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Essay: **(2 x 20 = 40)**

1. What is Conformational Analysis? With the help of a potential energy diagram explain the stability of the various possible conformations for ethane and 1, 2-dichloroethane.

2. a) What are Purines? Elucidate the structure of uric acid.
   b) Explain the interrelation between the Xanthine alkaloids.

II. Short notes: **(8 x 5 = 40)**

1. Define Optical activity? What are the various optically active and inactive forms possible in compounds containing two different chiral carbons?
2. a) Explain the modern theory of double bonds.
   b) E-Z system of nomenclature.
3. List out the methods used to reduce carbonyl compounds to hydrocarbons. Write the reaction, mechanism and applications of any one method.
4. What happens when:
   a) Pyrrole is treated with Maleic anhydride.
   b) Thiophene is treated with Raney Nickel.
   c) Indole is treated with chloroform and potassium hydroxide.
   d) Quinoline is oxidised with potassium permanganate.
   e) Pyrazole is treated with acetic anhydride.
5. Discuss the stereochemistry of cardiac glycosides.
6. Explain the chemistry of Vitamin $B_{6.}$
7. Write any two methods of preparation and any three reactions of pyrimidine.
8. Give the reaction, mechanism and salient features of Beckmann rearrangement.

III. Short answers: **(10 x 2 = 20)**

1. What are the elements of symmetry?
2. Write any two uses of lead tetraacetate.
3. What is Darzen's reaction?
4. Give the structure of (a) Atropine (b) Digoxin
5. Define stereo-selective synthesis.
6. What is Chichibabin reaction?
7. Define flavonoids and give examples.
8. Write the halogenation reaction of quinoline.
9. Define asymmetric synthesis.
10. What is Meerwin-Pondorf Verley reduction?

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(LK 4258) FEBRUARY 2017 **Sub. Code: 4258**

B.PHARM. EXAMINATION
SECOND YEAR
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. What are Alkaloids? Classify with examples and add the chemistry of Atropine.

2. Briefly explain on the following reactions.
   a) Clemmenson's reduction b) Beckmann rearrangement
   c) Meerwin – Pondroff reduction d) Birch reduction.

II. Write notes on: **(8 x 5 = 40)**

1. Write the applications of periodic acid and mercuric acetate.
2. Explain the chemistry of Vitamin D.
3. Discuss the stereochemistry of cyclic compounds.
4. Briefly explain on the conventions used in stereochemistry.
5. Give an account on synthetic method of preparation and reactions of
   a) Acridine b) Phenothiazine
6. Explain the chemistry and uses of camphor.
7. Discuss the chemistry of Folic acid.
8. Explain the following reactions: a) Friedel-craft acylation of thiophene
   b) Reimer-Tiemann Formylation of indole.

III. Short answers on: **(10 x 2 = 20)**

1. Write the structures of Xanthine bases.
2. What is meant by chirality? Give an example.
3. What happens when methyl substituted pyrazole is oxidized by potassium permanganate?
4. Give the classification of flavonoids.
5. What is alternating axis of symmetry?
6. Give the structure and numbering of digoxin.
7. What is meant by catalytic hydrogenation?
8. Define isomers and isomerism.
9. Write the pharmacological activity of ephedrine.
10. Write the molecular formula for monoterpenoids and sesquiterpenoids.

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(LL 4258) AUGUST 2017 **Sub. Code: 4258**

B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Define and classify heterocyclic compounds.
   b) Explain the structure, reactivity, preparation and chemical reactions of Pyridine.

2. a) Define and classify alkaloids with examples.
   b) Elucidate the structure of Ephedrine.

II. Write notes on: **(8 x 5 = 40)**

1. Explain in detail the criterions for a compound to be optically active.
2. Discuss about asymmetric synthesis with examples.
3. Explain the Cahn Ingold and Prelog system sequence rule for assigning configuration of optical isomers.
4. Explain inter relation between menthol, thymol and camphor.
5. Explain the mechanism and give the applications of Reduction using hydrazine.
6. Give the i) Fischer indole synthesis ii) Skraup synthesis of Quinoline.
7. Classify Flavanoids and discuss about the chemistry of Hesperidin.
8. Explain the Chemistry and pharmacological activity of digitalis glycosides.

III. Short answers on: **(10 x 2 = 20)**

1. Write the structure and medicinal uses of Vitamin A and Vitamin D.
2. Define and give an application of Beckmann rearrangement.
3. Define Stereospecific and stereoselective synthesis.
4. Give any two applications of Lead tetra acetate.
5. What is Birch reduction? Give an example.
6. Write the formylation reactions of Pyrrole.
7. Write any two synthesis of Acridine.
8. List out the metal hydrides used in reduction reactions and give an application of Lithium aluminium hydride.
9. Write various conformations of cyclohexane.
10. Write the structure and medicinal uses of Citral and Caffeine.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LM 4258) FEBRUARY 2018 **Sub. Code: 4258**

B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Explain the following reactions as synthetic tools:
   a) Oxidation with lead tetra acetate and periodic acid.
   b) Beckmann rearrangement and Schmidt rearrangement.

2. a) Define and classify terpenoids with example.
   b) Write the chemistry of alpha terpineol.

II. Write notes on: **(8 x 5 = 40)**

1. Explain the various elements of symmetry with example.
2. Explain the chemistry of caffeine.
3. Discuss on tetrahedral carbon atom and stereochemistry of cyclic compounds.
4. Explain the sequence rules relating the R & S configuration.
5. Describe the common method of isolation of alkaloid.
6. Write the electrophili reaction of pyrrole.
7. Explain the chemistry of Vitamin A.
8. Discuss the pharmacological activity of atropine and related alkaloids.

III. Short answers on: **(10 x 2 = 20)**

1. What is clemmenson's reduction?
2. Define Stereomutation.
3. Mention the medicinal uses of Vitamin B_6 and $B_{12.}$
4. Write the difference between enantiomer and diastereomer.
5. Give any two important reactions of isoxazole.
6. What is Walden inversion?
7. Define glycosides and name any two glycosides.
8. Write the structure and uses of papaverine.
9. Give the structure and uses of menthol and thymol.
10. Write the structural difference between theophyllin and theobromine.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LN 4258) AUGUST 2018 **Sub. Code: 4258**

B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Explain the various methods of determination of configuration of geometric isomers.
   b) Give important methods of preparation and chemical reactions of indole.

2. a) Discuss the chemistry of camphor.
   b) Explain the chemistry of Vitamin B_2 and Folic acid.

II. Write notes on: **(8 x 5 = 40)**

1. Explain the method of resolution by formation of diastereomers with examples.
2. Explain optical isomerism in Meso Tartaric acid.
3. Discuss the chemistry of pyrimidine.
4. Write the important reactions of quinoline.
5. Write the chemistry and uses of alpha-pinene.
6. Explain the basic ring system and nomenclature of steroid nucleus.
7. Discuss the inter-relationship between caffeine, theophylline and theobromine.
8. Discuss the chemistry of Digoxin.

III. Short answers on: **(10 x 2 = 20)**

1. What is conformational analysis?
2. Define relative configuration and absolute configuration.
3. Give two uses of mercuric acetate.
4. What is Darzen's reaction?
5. Give two methods of synthesis of thiazole.
6. Write any two reactions of Pyrazole.
7. Classify terpenoids.
8. What are sennosides?
9. Write the tautomers of uric acid.
10. Write the structure of Vitamin B_6 and its uses.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LO 4258) FEBRUARY 2019 **Sub. Code: 4258**

B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Define and classify alkaloids with examples. Discuss the chemistry and pharmacological activity of Atropine.

2. a) Write in detail about asymmetric synthesis.
   b) What is Walden Inversion explain in detail the mechanism of reaction and factors affecting Walden inversion?

II. Write notes on: **(8 x 5 = 40)**

1. Explain conformational analysis of ethane.
2. Explain the Schmidt rearrangement with mechanism.
3. Describe the chemistry of digitoxin.
4. Describe the chemistry and uses of Vitamin-E.
5. Write a brief note on catalytic hydrogenation.
6. Synthesis of thiophene.
7. Compare and contrast Clemmenson's reduction and Wolf Kishner reduction.
8. Explain the chemistry of Lanatosides.

III. Short answers on: **(10 x 2 = 20)**

1. Define racemic modification.
2. Define diastereomers.
3. Write the definition and reaction for Birch reduction.
4. Give any two methods of preparations of Imidazole.
5. What is metal hydride reduction? Give an example.
6. What are Terpenoids? Give two examples.
7. Write any two uses of Selenium oxide.
8. Define glycosides, give examples.
9. Write the structure of i) Vitamin - D ii) Vitamin – B_1.
10. Give any two reactions of Furan.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LP 4258) AUGUST 2019 **Sub. Code: 4258**

B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) What are Cardiac glycosides? Explain the stereo chemistry of Cardiac glycosides.
   b) Elucidate the structure of Ephedrine.

2. a) Explain the nomenclature of heterocyclic compounds.
   b) Explain the structure, reactivity, preparation and chemical reaction of pyridine.

II. Write notes on: **(8 x 5 = 40)**

1. Explain the electrophilic substitution reaction of pyrrole.
2. Explain the chemistry and use of Vitamin – K.
3. Give the reaction and mechanism of meer-win pondroff reduction.
4. Structural elucidation of uric acid.
5. Discuss about the chemistry of hesperidin.
6. Explain the chemistry and constitution of Papaverine.
7. Chemistry of Vitamin - A.
8. Explain the chemistry and constitution of citral.

III. Short answers on: **(10 x 2 = 20)**

1. Synthesis of Acridine.
2. Two applications of Lead Tetra acetate.
3. Define Enantiomers.
4. Two important reactions of Oxazole.
5. Cis – trans Isomerism.
6. Define plane of symmetry.
7. Structure and Numbering of Phenothiazine.
8. What is 1, 3 diaxial interaction?
9. Define stereo-selective synthesis.
10. Define Isomers and Isomerism.

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THE TAMIL NADU Dr.M.G.R. MEDICAL UNIVERSITY

(LQ 4258) FEBRUARY 2020 **Sub. Code: 4258**

B.PHARM. DEGREE EXAMINATION
SECOND YEAR
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours **Maximum: 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. a) Explain stereochemistry of cyclic compounds.
   b) Explain various methods of determination of configurations of geometric isomers.

2. a) Discuss the chemistry and uses of ephedrine.
   b) Explain the chemistry and medicinal uses of Vitamin B_1 and Vitamin E.

II. Write notes on: **(8 x 5 = 40)**

1. Define and explain the pharmaceutical importance of chirality.
2. Explain conformational analysis of 1, 2 dichloroethane.
3. Explain various methods of resolution of racemic modification.
4. Discuss the chemistry of imidazole.
5. Explain the chemistry and uses of thymol.
6. Discuss the chemistry of lanatoside.
7. Explain the chemistry of uric acid.
8. Explain metal hydride reduction as synthetic tools.

III. Short answers on: **(10 x 2 = 20)**

1. What is Fischer projection?
2. Define asymmetric synthesis.
3. What is E-Z system of nomenclature?
4. Write the structure and medicinal uses of camphor.
5. What are sennosides?
6. Write the structure and uses of folic acid.
7. Write the structure and medicinal uses of caffeine.
8. Give the medicinal uses of flavonoids.
9. What is periodic acid oxidation?
10. Give the synthetic uses of hydrazine and its derivatives.

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