Code: BP401T

R19

B.Pharm II Year II Semester (R19) Supplementary Examinations February 2023

PHARMACEUTICAL ORGANIC CHEMISTRY - III

(For 2019, 2020 regular & 2020, 2021 lateral entry admitted batches only)

Time: 3 hours | Max. Marks: 75

PART – A

(Compulsory Question)

*****

1	Answer the following: (10 X 02 = 20 Marks)		
	(a)	Define optical isomerism with example.	2M
	(b)	What are meso compounds? Give example.	2M
	(c)	Define stereoselective reactions with example.	2M
	(d)	What are cis and trans isomers?	2M
	(e)	Write the structure and medicinal uses of Furan.	2M
	(f)	Write the structure and medicinal uses of Thiophene.	2M
	(g)	Give the structure and medicinal uses of Purine.	2M
	(h)	Write any one reaction for Thiazole.	2M
	(i)	Give the application of Birch reduction.	2M
	(j)	Write the synthetic importance of Clemmensen reduction.	2M

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2	Define Racemic mixture. Explain in detail Resolution of Racemic Mixture.	10M
3	Explain with suitable example, the conformational isomerism in Cyclohexane.	10M
4	Write the synthesis, medicinal uses and any four important reactions for Purine.	10M

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5	What is asymmetric synthesis? Explain the partial and absolute asymmetric synthesis.	5M
6	Write in brief, methods of determination of configuration of geometrical isomers.	5M
7	Write the synthesis and reactions of Pyrrole.	5M
8	Write the synthesis and reactions of acridine.	5M
9	Write the synthesis, reaction of azipine.	5M
10	Write a note on optical activity.	5M
11	Write a brief note on Geometrical isomers.	5M
12	Write the reaction and mechanism of Backmanns rearrangement.	5M
13	Write the synthetic importance of Wolfkisher reduction.	5M

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Code: 15R00303

R15

B.Pharm II Year I Semester (R15) Supplementary Examinations September 2022

PHARMACEUTICAL ORGANIC CHEMISTRY – III

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Why imidazole is 100 times strongly basic than pyridine?
(b) Why 5th position of imidazole is most favoured for electrophilic aromatic substitution reactions?
(c) What are the main conditions required for an optical activity?
(d) What is atropisomerism? Give an example.
(e) Why lactose is a reducing sugar whereas sucrose is a non-reducing sugar despite both are disaccharides?
(f) What is epimerization? Give an example.
(g) Why oils have low melting point than fats? Give an example.
(h) What is the difference between fat and wax? Give an example.
(i) Why Birch reduction is carried out in the presence of liquid ammonia?
(j) What is the difference between MPV reduction and Oppenauer oxidation?

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2 (a) Draw structures for the following IUPAC names: (i) 3-imidazoline. (ii) Pyrazolidine-3, 5-dione. (iii) Benzo [b] furan. (iv) Isonicotinamide. (v) Azetidine.
(b) Explain with mechanism the electrophilic aromatic substitution reactions of pyridine.

OR

3 (a) Compare the aromaticity of benzene with pyrrole, furan and thiophene. Comment on their stability.
(b) Give any one method of synthesis of quinoline and pyridine.

4 (a) Define the following terms with an example: (i) Chirality. (ii) Meso compound. (iii) Stereospecific reaction. (iv) Stereoselective reaction. (v) Racemic compound.
(b) Discuss with an example various system of naming a geometrical isomer.

OR

5 (a) Explain R and S system of nomenclature by using sequence rules with an example.
(b) Write a note on elements of symmetry.

6 (a) Define and classify carbohydrates with examples. Mention the physiological importance of carbohydrates in human body.
(b) Explain the structure of glucose.

OR

7 (a) Discuss various chemical reactions of carbohydrates.
(b) What are glycosides? Classify those with examples.

8 (a) Classify amino acids with examples. Write a note on stereochemistry of amino acids.
(b) Define peroxide value and iodine value. Mention their importance in analysis of oils and fats.

OR

9 (a) Discuss the chemistry of heparin and insulin.
(b) What is rancidity of oils? Give the mechanism and reasons for rancidity. How do you measure the rancidity?

10 (a) Explain with mechanism the Wittig reaction.
(b) Discuss Schmidt reaction with an example.

OR

11 (a) What is Michael addition reaction? Explain the mechanism with an example.
(b) Discuss with an example the Curtius rearrangement.

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Code: 15R00303

R15

B.Pharm II Year I Semester (R15) Supplementary Examinations September 2022

PHARMACEUTICAL ORGANIC CHEMISTRY – III

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

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(d) What is atropisomerism? Give an example.
(e) Why lactose is a reducing sugar whereas sucrose is a non-reducing sugar despite both are disaccharides?
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(h) What is the difference between fat and wax? Give an example.
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(j) What is the difference between MPV reduction and Oppenauer oxidation?

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

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(b) Explain with mechanism the electrophilic aromatic substitution reactions of pyridine.

OR

3 (a) Compare the aromaticity of benzene with pyrrole, furan and thiophene. Comment on their stability.
(b) Give any one method of synthesis of quinoline and pyridine.

4 (a) Define the following terms with an example: (i) Chirality. (ii) Meso compound. (iii) Stereospecific reaction. (iv) Stereoselective reaction. (v) Racemic compound.
(b) Discuss with an example various system of naming a geometrical isomer.

OR

5 (a) Explain R and S system of nomenclature by using sequence rules with an example.
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6 (a) Define and classify carbohydrates with examples. Mention the physiological importance of carbohydrates in human body.
(b) Explain the structure of glucose.

OR

7 (a) Discuss various chemical reactions of carbohydrates.
(b) What are glycosides? Classify those with examples.

8 (a) Classify amino acids with examples. Write a note on stereochemistry of amino acids.
(b) Define peroxide value and iodine value. Mention their importance in analysis of oils and fats.

OR

9 (a) Discuss the chemistry of heparin and insulin.
(b) What is rancidity of oils? Give the mechanism and reasons for rancidity. How do you measure the rancidity?

10 (a) Explain with mechanism the Wittig reaction.
(b) Discuss Schmidt reaction with an example.

OR

11 (a) What is Michael addition reaction? Explain the mechanism with an example.
(b) Discuss with an example the Curtius rearrangement.

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Code: 15R00303

R15

B.Pharm II Year I Semester (R15) & (LC) Supplementary Examinations April 2022

PHARMACEUTICAL ORGANIC CHEMISTRY – III

(For R09 & R13 readmitted to R15)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Sketch any two nucleophilic substitution reactions of pyridine.
(b) Write any two synthesis of isoquinoline.
(c) Define the term chirality and optical antipodes.
(d) Define cis-trans isomerism with examples.
(e) State the significance of Lobry De Bruyn – Van Ekenstein reaction.
(f) Recall the structure and medicinal uses of anthroquinone glycosides.
(g) List out the colour reactions of amino acids.
(h) Define acid value and mention its significance.
(i) Define and state the applications of Meerwein Ponndorf Verley reduction.
(j) What is anchimeric assistance?

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2 Explain the preparation and chemical reactions of imidazole.

OR

3 Summarize the preparation and reactions of indole.

4 Illustrate the concept of 'E' and 'Z' cis and trans, syn & anti configurations.

OR

5 Describe the stereoselective and stereo specific reactions.

6 Explain in brief pharmaceutical importance of various carbohydrates.

OR

7 Classify and explain the chemistry of glycosides.

8 Discuss the pharmaceutical importance of polypeptides and proteins.

OR

9 Describe about hydrogenation of oils and give the principle and applications of determination of iodine value.

10 Explain the mechanism and applications of Curtius rearrangement and Michael addition reaction.

OR

11 Give the definition, mechanism and applications of Wittig reaction and Oppenauer oxidation.

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Code: BP401T

R19

B.Pharm II Year II Semester (R19) Regular & Supplementary Examinations September 2022

PHARMACEUTICAL ORGANIC CHEMISTRY – III

Time: 3 hours Max. Marks: 75

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Define enantiomers with examples.
(b) What are chiral molecules? Give example.
(c) Define conformational isomers.
(d) Give any four examples of biphenyl compounds.
(e) Write the structure and medicinal uses of pyrrole.
(f) Classify the heterocyclic compounds with examples.
(g) Give the structure and uses of pyrimidine
(h) Write a note on indole.
(i) Write the application of Dakin reaction.
(j) Give an account on racemic modification.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2 Write the synthesis and any four reactions for imidazole

3 Write in detail reactions of chiral molecules.

4 Write the reaction of synthetic importance for metal hydride reduction with examples.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5 Write in detail sequence rules and RS system of nomenclature of optical isomers.

6 Explain in brief stereo isomerism of biphenyl compounds.

7 Write the relative aromaticity of furan.

8 Write the synthesis and reaction of oxazole.

9 Write a note basicity of pyridine. Explain in detail on enantiomerism.

10 Explain in brief stereospecific reactions.

11 Write the reaction and mechanism of oppenauer oxidation.

12 Write in detail reactions of synthetic importance of Schmidt rearrangement.

13 Write the reactions and medicinal uses of quinoline.

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Code: BP401T

R19

B.Pharm II Year II Semester (R19) Regular Examinations September 2021

PHARMACEUTICAL ORGANIC CHEMISTRY – III

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) What are enantiomers?
(b) What do you mean by centre of symmetry? Explain with an example.
(c) Draw different conformational isomers of cyclohexane and highlight the most stable conformation.
(d) Define stereo selective synthesis.
(e) Give any two reactions of Furan.
(f) Write any two methods of synthesis of thiophene.
(g) Write any two reactions of acridine.
(h) Write the structure and numbering of any two 5-membered heterocyclic compounds containing two similar hetero atoms.
(i) What is Darzen's reaction?
(j) Write the general reaction of Oppenauer oxidation.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2 Write the definition, reaction, mechanism and applications of Beckmann rearrangement.

3 Give the synthesis and reactions of quinoline.

4 Explain about racemic modification.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5 Write a detailed note on nomenclature of geometrical isomerism.

6 Explain sequence rules by giving examples.

7 Add a note on atropisomerism.

8 Discuss methods of synthesis of pyrrole.

9 Write short notes on indole.

10 Write short notes on pyridine.

11 Write any two methods of synthesis of oxazole and thiazole.

12 Write a short note on Wolff Kishner reduction.

13 Write the general reaction and mechanism of metal hydride reduction.

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Code: BP301T

R19

B.Pharm II Year I Semester (R19) Supplementary Examinations February 2023

PHARMACEUTICAL ORGANIC CHEMISTRY – II

(For 2019, 2020 regular & 2020, 2021 lateral entry admitted batches only)

Time: 3 hours

Max. Marks: 75

PART – A

(Compulsory Question)

*****

1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	Write the limitations of Friedel Craft's alkylation.	2M
	(b)	Write the structure and uses of Saccharin.	2M
	(c)	Write the structure and uses of resorcinol.	2M
	(d)	Mention the synthetic uses of aryl diazonium salts.	2M
	(e)	Define acid value with example.	2M
	(f)	Define iodine value with example.	2M
	(g)	Give structure and uses of napthalene.	2M
	(h)	Give structure and uses of anthracene.	2M
	(i)	What is Coulson's and Moffitts modification? Give example.	2M
	(j)	Mention the limitations of Baeyer's strain theory.	2M

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2	Explain in detail Friedel Craft's acylation with applications and limitations.	10M
3	Explain in detail the basicity of amines.	10M
4	Write the important reaction for fats and oils.	10M

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5	Explain the reaction mechanisms for halogenation of benzene.	5M
6	Explain the reaction mechanisms for Fridel Craft's alkylation.	5M
7	Write the effect of substituents on basicity.	5M
8	Explain any three qualitative for phenols.	5M
9	Explain in detail rancidity of oils.	5M
10	Write the principle and significance of Reichent Meiss value.	5M
11	Write any two methods of preparation for triphenyl methane.	5M
12	Write any three reactions of cyclopropane.	5M
13	Write a note on Sacche Mohr theory.	5M

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Code: 15R00303

R15

B.Pharm II Year I Semester (R15) Supplementary Examinations February 2023

PHARMACEUTICAL ORGANIC CHEMISTRY – III

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Write any two synthesis of isoquinoline.
(b) Why imidazole is 100 times strongly basic than pyridine?
(c) Give suitable example for cis and trans isomerism.
(d) Define chirality.
(e) What is epimerization? Give an example.
(f) Explain osazone formation.
(g) Differentiate between fat and oil.
(h) List out the colour reactions of amino acids.
(i) Explain Curtius reaction.
(j) Define Witting reaction.

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2 Summarize the preparation and reactions of indole.

OR

3 Draw structures for the following IUPAC names: (i) 3-imidazoline. (ii) Pyrazolidine-3, 5-dione. (iii) Benzo [b] furan. (iv) Isonicotinamide. (v) Azetidine.

4 Describe in detail the elements of symmetry.

OR

5 Elaborate various methods of racemic modification.

6 (a) Discuss various chemical reactions of carbohydrates.
(b) What are glycosides? Classify those with examples.

OR

7 (a) Mention a note on the structure of anthraquinone glycosides along with physiological importance.
(b) Define glycosides and classify them with a suitable example. How do you differentiate α, β-glycosides?

8 (a) Write the structure and chemistry of insulin.
(b) Define and give suitable examples for isoelectric point.

OR

9 Discuss the pharmaceutical importance of polypeptides and proteins.

10 Write the reaction and applications of:

(a) Michael addition.
(b) MPV reduction.

OR

11 Write the general reaction, mechanism and applications of Beckmann rearrangement.

*****

Code: BP401T

R19

B.Pharm II Year II Semester (R19) Regular & Supplementary Examinations September 2022

PHARMACEUTICAL ORGANIC CHEMISTRY – III

Time: 3 hours | Max. Marks: 75

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) Define enantiomers with examples.
(b) What are chiral molecules? Give example.
(c) Define conformational isomers.
(d) Give any four examples of biphenyl compounds.
(e) Write the structure and medicinal uses of pyrrole.
(f) Classify the heterocyclic compounds with examples.
(g) Give the structure and uses of pyrimidine.
(h) Write a note on indole.
(i) Write the application of Dakin reaction.
(j) Give an account on racemic modification.

PART – B

(Answer any two questions: 02 X 10 = 20 Marks)

2 Write the synthesis and any four reactions for imidazole.

3 Write in detail reactions of chiral molecules.

4 Write the reaction of synthetic importance for metal hydride reduction with examples.

PART – C

(Answer any seven questions: 07 X 05 = 35 Marks)

5 Write in detail sequence rules and RS system of nomenclature of optical isomers.

6 Explain in brief stereo isomerism of biphenyl compounds.

7 Write the relative aromaticity of furan.

8 Write the synthesis and reaction of oxazole.

9 Write a note basicity of pyridine. Explain in detail on enantiomerism.

10 Explain in brief stereospecific reactions.

11 Write the reaction and mechanism of oppenauer oxidation.

12 Write in detail reactions of synthetic importance of Schmidt rearrangement.

13 Write the reactions and medicinal uses of quinoline.

*****