Roll Number ---------- **(Total Number of Questions 13)** **(Total number of Printed Pages 01)**

Programme	B. Pharmacy
Semester	4th
Subject	Pharmaceutical Organic Chemistry-III
Subject Code	BP401T
Paper ID	75843
Time	3Hours
Maximum Marks	75

Instructions to Candidates: *No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.*
Section A consists of Ten parts of 2 marks each (Objective Type); Attempt **ALL.*
***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*
**** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section A (10 X2 = 20)

1. Give very short answers to the followings (2 marks each):

i.	Define Optical Isomerism.
ii.	Give examples of strong hydride donor.
iii.	Define Meso compounds.
iv.	What do you understand by Heterocyclic compounds? Give Examples.
v.	What is Oxazole? Give its Structure.
vi.	What is Oppenaur oxidation?
vii.	What are Stereospecific reactions?
viii.	Draw Chair and Boat Conformation of Cyclohexane.
ix.	Explain Huckel's rule.
x.	Why Pyridine is more basic than Pyrrole?

Section B (2 X 10 = 20)

2.	Define Geometrical isomerism. Explain in detail the methods for determination of configuration of geometrical isomers.
3.	Write a note on (a) Clemmensen Reduction (b) Birch Reduction.
4.	Give a detailed account on Pyrrole.

Section C (7 X 5 = 35)

5.	Define the term Enantiomers, Diastereomers with suitable examples.
6.	Write a note on Conformation of Ethane.
7.	Write down the different methods for synthesis of Furan.
8.	Describe Skraup synthesis of Quinoline with its mechanism.
9.	What is Claisen-Schmidt Condensation? Give its mechanism.
10.	Write a note on Dakin Reaction.
11.	Why Chair form of Cyclohexane is more stable than Boat?
12.	Explain Elements of Symmetry.
13.	Explain Stereoselective reaction with suitable examples.

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20/6/2022

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Section A **(10 X2 = 20)**

1. Give very short answers to the followings (2 marks each):

i.	Define Optical Isomerism.
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v.	What is Oxazole? Give its Structure.
vi.	What is Oppenaur oxidation?
vii.	What are Stereospecific reactions?
viii.	Draw Chair and Boat Conformation of Cyclohexane.
ix.	Explain Huckel's rule.
x.	Why Pyridine is more basic than Pyrrole?

Section B **(2 X 10 = 20)**

2.	Define Geometrical isomerism. Explain in detail the methods for determination of configuration of geometrical isomers.
3.	Write a note on (a) Clemmensen Reduction (b) Birch Reduction.
4.	Give a detailed account on Pyrrole.

Section C **(7 X 5 = 35)**

5.	Define the term Enantiomers, Diastereomers with suitable examples.
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**** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A (10X2=20)

1.	Give very short answers to the followings:
i.	Define Optical Isomerism.
ii.	Define Meso Compounds.
iii.	Write down the IUPAC name of pyrrole.
iv.	Why Pyridine is more basic than pyrrole?
v.	What Schmidt reaction?
vi.	Write medicinal uses of quinoline.
vii.	What is Oppenauer oxidation? Give example.
viii.	Dissymmetry is essential condition for optical activity? Explain.
ix.	Draw chair and boat conformation of cyclohexane.
x.	Give two methods of preparation of furan.

Section- B (2X10=20)

2.	Comment on "conformational isomerism in n-butane and cyclohexane".
3.	Write a note on- (a) Clemmensen reduction (b) Birch reduction
4.	Write a detailed note on relative aromaticity, reactivity of Pyrrole, Furan and Thiophene.

Section- C (7X5=35)

5.	Explain stereoselective and stereospecific reaction with suitable examples.
6.	Define the term enantiomers and diastereomers with suitable examples.
7.	Give the methods of preparation of pyrrole.
8.	Give brief note on elements of symmetry.
9.	Write down the mechanism for synthesis of quinoline by Skraup method.
10.	Write down the electrophilic substitution reactions of furan and thiophene.
11.	Comment on chemical reactions of pyrazole.
12.	What is Claisen-Schmidt condensation? Give its mechanism.
13.	Explain chair form of cyclohexane is more stable than boat form.

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170523

Roll Number ----------(Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	4th
Subject	Pharmaceutical Organic Chemistry-III
Subject Code	BP401T
Paper ID	75843
Time	3Hours
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Section A consists of Ten parts of 2 marks each (Objective Type); Attempt **ALL.*

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****Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A **(10 X2 = 20)**

1.	Give very short answers to the followings:
i.	Enlist types of stereosiomers.
ii.	Summarize five membered heterocyclic compounds.
iii.	Define EZ isomerism?
iv.	Illustrate uses of pyrrole.
v.	Outline basicity of pyrrole.
vi.	What is Optical activity?
vii.	Classify heterocyclic compounds.
viii.	Define cis-trans isomerism.
ix.	Illustrate uses of thiophene.
x.	Outline medicinal uses of furan, pyrrole and thiophene.

Section- B **(2X10 = 20)**

2.	Illustrate Racemic modification and resolution of racemic mixture.
3.	Outline Beckmann's rearrangement ~~and Schmidt rearrangement~~.
4.	Demonstrate synthesis, reactions and medicinal uses of Quinoline and Isoquinoline.

Section- C **(7 X5 = 35)**

5.	Outline Oppenauer-oxidation and Dakin reaction
6.	Illustratestereospecific and stereoselective reactions
7.	Tabulate the conformational isomerism in Ethane and n-Butane
8.	Describe Methods of determination of configuration of geometrical isomers.
9.	Outline ~~Beckmanns rearrangement and~~ Schmidt rearrangement.
10.	Illustrate stereo isomerism in biphenyl compounds (Atropisomerism)
11.	Illustrate partial and absolute Asymmetric synthesis.
12.	Describe sequence rules and RS system of nomenclature of optical isomers.
13.	Illustratereactions of chiral molecules.

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20 JUN 2023

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Subject Code	BP401T
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****Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A (10 X2 = 20)

1.	Give very short answers to the followings:
i.	Define Optical Isomerism.
ii.	What do you understand by heterocyclic compounds? Give example.
iii.	Write structure and medicinal uses of imidazole.
iv.	Why Pyridine is more basic than Pyrrole?
v.	Differentiate between d,l and D,L notations.
vi.	What is Oppenauer-Oxidation?
vii.	Draw the orbital structure of Furan.
viii.	Write Schmidt reaction?
ix.	Explain enantiomerism and diastereoisomerism.
x.	Write structure of pyrazole and purine.

Section- B (2 X10 = 20)

2.	Write detailed note on relative aromaticity, reactivity and medicinal uses of Pyrrole, Furan and Thiophene.
3.	Discuss with examples Clemmensen reduction, Birch reduction and Wolff Kishner reduction.
4.	Write detailed note on methods used for the determination of the configuration.

Section- C (7 X5 = 35)

5.	Discuss Racemic modification and resolution of racemic mixture.
6.	Give brief note on elements of symmetry.
7.	Explain- (a) Beckmann Rearrangement (b) Dakin reaction.
8.	Write down the mechanism for the synthesis of Quinoline by Skraups method.
9.	Write a short note on asymmetric synthesis.
10.	Discuss electrophilic substitution reactions of Thiophene.
11.	Write detailed note on metal hydride reduction.
12.	Draw the various conformations of n-butane and compare their stability.
13.	Give the mechanism involved in Claisen-Schmidt condensation.

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20/11/23

201123 (morning)

Roll Number ----------(Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	4th
Subject	Pharmaceutical Organic Chemistry-III
Subject Code	BP401T
Paper ID	75843
Time	3Hours
Maximum Marks	75

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***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*

****Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section A (10 X2 = 20)

1.	Give very short answers to the followings
i.	What is optical activity?
ii.	Classify heterocyclic compounds.
iii.	Define cis-trans isomerism.
iv.	Illustrate uses of thiophene.
v.	Outline medicinal uses of furan, pyrrole and thiophene.
vi.	Summarize five- membered heterocyclic compounds.
vii.	Define enantiomeric excess?
viii.	Illustrate uses of pyrrole.
ix.	Summarize four- membered heterocyclic compounds.
x.	Define anti-syn?

Section B (2 X 10 = 20)

2.	Describe elements of symmetry.
3.	Illustratevarious methods of nomenclature of geometrical isomers.
4.	Describe relative aromaticity, reactivity and basicity of pyrrole.

Section C (7 X 5 = 35)

5.	Outline Oppenauer-oxidation and Dakin reaction
6.	Outline synthesis, reactions, and medicinal uses of indole and acridine.
7.	Illustrate synthesis, reactions and medicinal uses of azepine and its derivatives.
8.	Outline basicity, reactions and medicinal importance of pyridine.
9.	Illustrate stereospecific and setereoselective reactions.
10.	Tabulate conformational isomerism in n-butane and cyclohexane.
11.	Outline Schmidt rearrangement. Claisen-Schmidt condensation
12.	Illustrate Asymmetric synthesis: partial and absolute.
13.	Tabulate stereoisomerism in biphenyl compounds (Atropisomerism).

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(Morning)

220524

Roll Number ---------- (Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	4th
Subject	Pharmaceutical Organic Chemistry –III
Subject Code	BP401T
Paper ID	75843
Time	3Hours
Maximum Marks	75

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***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*
**** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A **(10X2=20)**

1.	Give a very short answers to the followings:
i.	Define EZ isomerism.
ii.	Differentiate between d, l and D,L notations.
iii.	Define enantiomeric excess.
iv.	Write the Claisen-Schmidt condensation reaction.
v.	Outline the medicinal uses of furan and thiophene.
vi.	Write the structure and uses of oxazole.
vii.	Give at least two examples of strong hydride donors.
viii.	Define anti-syn.
ix.	Classify heterocyclic compounds.
x.	Why Pyridine is more basic than pyrrole?

Section- B **(2X10=20)**

2.	Discuss Wolff-Kishner reduction and Beckmann's rearrangement with examples.
3.	Describe the synthesis, reaction, and medicinal uses of quinoline and isoquinoline.
4.	Illustrate the sequence rules and RS system of nomenclature for optical isomers.

Section- C **(7X5=35)**

5.	Discuss elecrtophillic reactions of thiophene.
6.	Describe methods for determining the configuration of geometric isomers.
7.	Illustrate stereospecific and stereoselective reactions.
8.	Write a short note on pyrrole.
9.	Explain Oppenauer oxidation and Dakin reaction.
10.	Outline synthesis, reactions and medicinal uses of azepine and its derivatives.
11.	Explain the conformational isomerism in cyclohexane.
12.	Outline the method for synthesis of furan.
13.	Write a note on asymmetric synthesis.

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(Morning)

191124

Roll Number ---------- (Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
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Subject Code	BP401T
Paper ID	75843
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**** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section- A **(10 X2 = 20)**

1.	Give very short answers to the followings:
i.	Define optical isomerism.
ii.	Give examples of strong hydride donor.
iii.	Define meso compounds.
iv.	What do you understand by hetrocyclic compounds? Give examples.
v.	What is oxazole? Give its structure.
vi.	What is oppenaur oxidation?
vii.	What are streospecific reactions?
viii.	Draw chair and boat conformation of cyclohexane.
ix.	Explain Huckel's rule.
x.	Why pyridine is more basic than pyrrole?

Section- B **(2 X 10 = 20)**

2.	Define geometrical isomerism. Explain in detail the methods of determination of configuration of geometrical isomers.
3.	Write a note on- A) Clemmensen reduction B) Birch reduction.
4.	Give a detailed account on pyrrole.

Section- C **(7 X 5 = 35)**

5.	Define the term enantiomers and diasteromers with suitable examples.
6.	Write a note on conformation of ethane.
7.	Write down the different methods of synthesis of furan.
8.	Describe skraup synthesis of quinoline with its mechanism.
9.	What is Claisen-Schmidt condensation? Give its mechanism.
10.	Write a note on Dakin reaction?
11.	Write a note on synthesis and medicinal uses of pyrimidine.
12.	Explain elements of symmetry.
13.	Explain streoselective reaction with suitable examples.

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(Morning)

040625

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***Section- B consists of Three questions carrying 10 marks each (Long Answer); attempt any TWO.*

****Section -C consists of Nine questions carrying 5 marks each (Short Answer); attempt any SEVEN.*

Section- A (10X2=20)

1.	Give very short answers to the followings:
i.	Differentiate between enantiomers and diastereomers.
ii.	Draw the structures of pyrrole and acridine.
iii.	List the medicinal uses of azepines and pyridines.
iv.	Cite the synthesis of pyrrole derivatives.
v.	Give one example each of five- and six-membered heterocyclic compounds.
vi.	Cite the synthesis of quinoline derivatives.
vii.	Define meso compounds.
viii.	Write examples of chiral and achiral compounds.
ix.	Draw the structures of quinoline and isoquinoline.
x.	Name the reducing agents used in metal hydride and Clemmensen reductions.

Section- B (2X10=20)

2.	Explain the concept of racemic modification and the resolution of a racemic mixture.
3.	Discuss conformational isomerism in ethane and ***n***-butane along with their respective energy level diagrams.
4.	Summarize Claisen–Schmidt condensation and Oppenauer oxidation with their respective mechanisms.

Section- C (7X5=35)

5.	Discuss the concept of atropisomerism with suitable examples.
6.	Write the Wolff–Kishner reduction with its mechanism.
7.	Write the synthesis of pyrimidine and azepine derivatives.
8.	Explain the relative aromaticity of pyrrole, furan, and thiophene.
9.	Discuss stereospecific and stereoselective reactions with examples.
10.	Explain the DL system of nomenclature in optical isomers with examples.
11.	Justify the concept of elements of symmetry with suitable examples.
12.	Discuss the nomenclature and classification of heterocyclic compounds.
13.	Summarize the concepts of asymmetric synthesis.

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04 12 25

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Section- A (10X2=20)

1.	Give very short answers to the followings:
i.	Define *cis-trans* isomerism.
ii.	What is optical isomerism?
iii.	Why are meso compounds optically inactive?
iv.	Draw conformations of n- butane.
v.	Why thiophene is more aromatic in nature than furan?
vi.	Draw orbital structure of pyrrole.
vii.	Give medicinal uses of quinoline.
viii.	Why imidazole is more basic than pyrazole?
ix.	What is the Birch reduction reaction?
x.	In $LiAlH_4$ and $NaBH_4$ which one more reactive than hydride donar?

Section- B (2X10=20)

2.	Explain R and S system of nomenclature with examples. Discuss the sequence rule to assign configuration with examples.
3.	Write a detailed note on Pyrrole.
4.	Explain it: (a) Dakin reaction (b) Beckmann rearrangement

Section- C (7X5=35)

5.	Define the term Enantiomers, Diasteromers with suitable examples.
6.	Explain conformational isomerism in n- butane.
7.	Outline the method for synthesis of furan.
8.	Tabulate stereoisomerism in biphenyl compounds (Atropisomerism).
9.	Outline oppenauer-oxaidation reaction.
10.	Comment on chemical reactions of pyrazole.
11.	Describe skraup synthesis of quinoline with its mechanism.
12.	Explain the mechanism of clemmensen reduction.
13.	Illustrate stereospecific and stereoselective reactions.

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