Printed Pages: 01 **Sub Code: BP401T**

Paper Id: 150299 **Roll No.** | | | | | | | | | | |

B PHARM

(SEM IV) THEORY EXAMINATION 2018-19

PHARMACEUTICAL ORGANIC CHEMISTRY –III

Time: 3 Hours **Total Marks: 75**

Note: Attempt all Sections. If you require any missing data, choose suitably.

SECTION A

1. Attempt all questions in brief **10 x 2 = 20**

a) Give the structure and uses of imidazole and indole
b) Why study of stereochemistry in chemistry is important.
c) Write about dakin reaction
d) Discuss about the basicity of pyridine
e) What are meso compounds
f) What is partial and absolute symmetric synthesis
g) What are stereospecific and stereoselective reactions
h) What is D and L nomenclature
i) Write the synthesis of furan
j) What are the conditions of optical isomerism

SECTION B

2. Attempt any two parts of the following: **2 X 10 = 20**

a) Write about nomenclature and methods of determination of geometrical isomerism with examples
b) Discuss with examples the rules of nomenclature and classification of heterocyclic compounds
c) Give synthesis and reactions of i) thiophene ii) imidazole

SECTION C

3. Attempt any five parts of the following: **7 X 5 = 35**

a) Give short note on wolf-kishner reduction
b) Explain the Beckmann rearrangement reaction with examples
c) Write the synthesis and medicinal uses of pyrimidines and purine derivatives
d) Discuss about stereoisomerism in biphenyl compounds
e) Give synthesis of oxazole and thiazole with their medicinal uses
f) Compare aromaticity and reactivity of pyrrole and furan
g) Discuss optical isomerism with examples

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Paper Id: 910026 Roll No:

B. PHARM
(SEM-IV) THEORY EXAMINATION 2019-20
PHARMACEUTICAL ORGANIC CHEMISTRY III

Time: 3 Hours ***Total Marks: 75***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.
2. Any special paper specific instruction.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a.	Differentiate chiral and achiral molecule.
b.	Explain E and Z isomers with suitable example.
c.	Draw conformers of ethane.
d.	Write any two synthetic procedures for preparation of pyrrole.
e.	Why meso compounds are optically inactive?
f.	Draw structure of any two five member heterocyclic compound and their use.
g.	Name the reducing agent used in Clemmensen reduction.
h.	Give chemical reaction used for conversion of Aldehyde directly into Alkane.
i.	Give structure and use of imidazole.
j.	Define term d, l, D and L

SECTION B

2. Attempt any *two* parts of the following: 2 x 10 = 20

a.	What is racemic modification? How can you resolute racemic mixture?
b.	Give definition and reaction mechanism for Wolff kishner and Dakin raction.
c.	Give preparation, properties and medicinal uses of pyridine.

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

a.	Give RS system of nomenclature of optical isomers with sequence rules.
b.	Write a note on stereospecific and stereoselective reaction.
c.	Explain partial and absolute asymmetric synthesis.
d.	Give synthesis and medicinal uses of pyrrole.
e.	Give importance of $LiAlH_4$ in metal hydride reduction.
f.	Give reaction and mechanism for Schimdt rearrangement.
g.	Give synthesis, properties and medicinal use of azepines and their derivatives.

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Roll No:

BPHARM

(SEM IV) THEORY EXAMINATION 2021-22

PHARMACEUTICAL ORGANIC CHEMISTRY III – THEORY

Time: 3 Hours *Total Marks: 75*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define enantiomers with examples.
b.	Define meso compounds with examples.
c.	Distinguish between E and Z isomers with examples.
d.	Discuss sequence rules.
e.	Compare the reactivity and aromaticity of pyrrole, furan and thiophene.
f.	What is the reduction product of furan? Give its reaction.
g.	Discuss the structure and pharmaceutical uses of Oxazole.
h.	Write the pharmaceutical uses of quinoline and isoquinoline.
i.	Write the synthetic importance of Birch reduction.
j.	Discuss the Claisen Schmidt condensation reaction.

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Outline the various conformations of cyclohexane in detail.
b.	Classify heterocyclic compounds. Discuss the nomenclature of heterocyclic compounds with suitable examples.
c.	Write down the synthesis, reactions and medicinal uses of Imidazole and Thiazole.

SECTION C

3. **Attempt any *five* parts of the following:** **5 x 7 = 35**

a.	Describe DL system of nomenclature of optical isomers with suitable example.
b.	Describe stereo isomerism in biphenyl compounds and its conditions for optical activity.
c.	Write down the synthesis, reactions, and medicinal uses of Pyrrole and Thiophene.
d.	Describe in detail about the stereospecific and stereoselective reactions with examples.
e.	Write down the synthesis and medicinal uses of Pyridine also discuss basicity of Pyridine.
f.	Discuss in detail about the synthesis and pharmaceutical uses of pyrimidine and purine.
g.	Discuss the reaction and mechanism of Metal hydride reduction.

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Paper Id: 238040 **Roll No.** | | | | | | | | | | |

B PHARM
(SEM IV) THEORY EXAMINATION 2022-23
PHARMACEUTICAL ORGANIC CHMEISTRY-III

Time: 3 Hours ***Total Marks: 75***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

(a) Differentiate between DL and dl system of nomenclature.

(b) Define the term chiral compound and chiral carbon.

(c) Write the necessary conditions for any compound to show GI.

(d) Illustrate the Newmann projection of cyclohexane.

(e) What are heterocyclic compounds? Give examples.

(f) Give the reactivity order of Pyrrole, Furan and Thiophene.

(g) Why pyridine is basic in nature?

(h) Give the reaction involved in birch reduction.

(i) Give the reaction involved in Dakin's reaction.

(j) Draw the structure of any two heterocyclic compounds containing two hetero atoms.

SECTION B

2. Attempt any *two* parts of the following: 2 x 10 = 20

(a) Write synthesis, reaction and medicinal uses of pyrrole. Also comment on its resonance.

(b) Discuss nomenclature of heterocyclic compounds with proper examples.

(c) Explain the terms: enantiomers, mesomers, diastereomers, racemic modification and atropisomers.

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

(a) Give the reaction, mechanism and synthetic importance of metal hydride reduction.

(b) Give the reaction, mechanism and synthetic importance of Clemmensen reduction or Oppenauer oxidation.

(c) Write synthesis, reaction and medicinal uses of pyridine.

(d) Discuss the ESRs and medicinal uses of pyrazole and imidazole.

(e) Classify heterocyclic compounds as per aromaticity and ring size.

(f) What are the various naming systems of geometrical isomers? Explain with example.

(g) Comment on the nomenclature of optical isomers.

FAPER ID-411049

Subject Code: BP401T

Roll No:

BPHARMA
(SEM IV) THEORY EXAMINATION 2023-24
PHARMACEUTICAL ORGANIC CHEMISTRY III – THEORY

TIME: 3 HRS **M.MARKS: 75**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	Define diastereoisomers with example.
b.	Why propionic acid is not optically active?
c.	Illustrate newmann projection for ethane.
d.	What are the conditions for biphenyl compounds to show optical isomerism?
e.	Define heterocyclic compounds with proper example.
f.	Give the main reaction involved in dakin's reaction.
g.	Write Pall-Knorr synthesis of pyrrole.
h.	Illustrate the reaction based on birch reduction.
i.	Discuss medicinal uses of furan.
j.	What is chirality?

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	Explain reaction, mechanism and medicinal uses of wolf kischner reaction or beckmann's rearrangement.
b.	Discuss nomenclature of heterocyclic compounds with proper examples.
c.	How imidazole is amphoteric? Discuss its synthesis, reactions and medicinal uses.

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Classify heterocyclic compounds with suitable examples.
b.	Write synthesis, reactions and uses of thiophene.
c.	Discuss reaction and mechanism involved in clemmensen reduction.
d.	Give various naming systems used for naming geometrical isomers.
e.	Chair form of cyclohexane is more stable than boat form. Explain in detail.
f.	Discuss various methods used in determination of configuration of Geometrical isomers.
g.	Comment on any two: a) basicity of pyridine, b) optical activity and c) mesomer

PAPER ID-311948

Roll No: | | | | | | | | | | | | |

BPHARM

(SEM IV) THEORY EXAMINATION 2024-25

PHARMACEUTICAL ORGANIC CHEMISTRY III – THEORY

TIME: 3 HRS **M.MARKS: 75**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **10 x 2 = 20**

a.	What is the difference between diastereomers and enantiomers?
b.	Explain the structural features that define a meso compound.
c.	What is the difference between cis and trans isomerism?
d.	What is conformational isomerism in ethane?
e.	How does the presence of sulfur in thiophene affect its reactivity?
f.	What are the common uses of Oxazole?
g.	How is Acridine used in the synthesis of dyes?
h.	How is Quinoline synthesized?
i.	Why is pyridine less basic than alkylamines?
j.	How is a racemic mixture different from a pure enantiomer?

SECTION B

2. Attempt any *two* parts of the following: **2 x 10 = 20**

a.	What is the DL system of nomenclature in stereochemistry, and how is it applied to optical isomers?
b.	Explain the reactivity of pyrrole towards electrophilic substitution reactions. What factors influence the regioselectivity of these reactions?
c.	Explain the concept of atropisomerism in biphenyl compounds. How does it differ from other types of stereoisomerism?

SECTION C

3. Attempt any *five* parts of the following: **7 x 5 = 35**

a.	Explain the role of chirality in optical isomerism and why chiral compounds exhibit optical activity.
b.	What is the Cahn-Ingold-Prelog priority rules, and how is it applied to determine the configuration of isomers?
c.	How can pyrazole be synthesized using 1,3-dipolar cycloaddition reactions, and what are the advantages of this method?
d.	What are the common synthetic methods for preparing furan and its derivatives? Provide a detailed reaction mechanism for one of the methods.
e.	What is a racemic mixture, and how does it differ from an optically active compound?
f.	Define the concept of symmetry in the context of molecular and crystallography studies. How do symmetry operations play a role in understanding molecular structure?
g.	How do the reactivity patterns of chiral molecules differ from those of their achiral counterparts in stereoselective reactions?

BPharma Bot02

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