Total No. of Questions: 3 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Pharmacy
End Sem Examination May-2024
PY3CO13 Pharmaceutical Organic Chemistry -III

Programme: B. Pharm. Branch/Specialisation: Pharmacy

Duration: 3 Hrs. **Maximum Marks: 75**

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1	i.	What are enantiomers and diastereomers?	**2**
	ii.	Give example of chiral and achiral compound.	**2**
	iii.	Define geometrical isomerism with an example.	**2**
	iv.	Enlist methods of configuration of geometrical isomers.	**2**
	v.	What are heterocyclic compounds, give example.	**2**
	vi.	Give the structure and two medicinal uses of furan.	**2**
	vii.	Name and draw any two five membered heterocyclic compounds containing two nitrogen atoms.	**2**
	viii.	Give the structure and two medicinal uses of quinoline.	**2**
	ix.	Give the structure and two uses of Sodium borohydride.	**2**
	x.	What do you mean by condensation reaction? Name one condensation reaction.	**2**
Q.2		Attempt any two:	
	i.	What is racemization? Discuss in detail the methods of resolution of racemic mixture.	**10**
	ii.	Discuss conformational isomerism in an alkane and cycloalkane.	**10**
	iii.	(a) Explain in detail about absolute and partial synthesis.	**5**
		(b) Differentiate between stereospecific and stereoselective reactions.	**5**
Q.3		Attempt any seven: Two questions from each section is compulsory.	
		Section - A	
	i.	Describe the nomenclature, synthesis and reactions of Pyrrole.	**5**

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	ii.	Give a note on relative aromaticity and reactivity order of Pyrrole, Furan and Thiophene.	**5**
	iii.	Describe the synthesis and chemical reactions of Thiophene.	**5**
		Section - B	
	iv.	Give the chemical reactions and medicinal uses of Oxazole.	**5**
	v.	Explain any two synthesis and chemical reactions of azepines.	**5**
	vi.	Write a note on basicity of Pyridine.	**5**
		Section - C	
	vii.	Explain in detail mechanism of Birch reduction reaction.	**5**
	viii.	Write a note on Metal hydrides.	**5**
	ix.	Write a note on Claisen-Schmidt condensation reaction.	**5**

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Marking Scheme

Pharmaceutical Organic Chemistry -III (T) - PY3CO13 (T)

Q.1	i)	Enantiomers-	1 Mark	**2**
		Diastereomers-	1 Mark	
	ii)	1 example of chiral compound-	1 Mark	**2**
		1 example of achiral compound-	1 Mark.	
	iii)	Geometrical isomerism-	1 Mark	**2**
		Example-	1 Mark	
	iv)	2 methods of configuration of geometrical isomers	2 Mark	**2**
	v)	Heterocyclic compounds-	1 Mark.	**2**
		Example -	1 Mark	
	vi)	Structure-	1 Mark	**2**
		Two medicinal uses of furan-	1 Mark	
	vii)	Name and structure- two compounds-	1 Mark each	**2**
	viii)	Structure-	1 Mark	**2**
		Two medicinal uses of quinoline-	1 Mark.	
	ix)	Structure-	1 Mark	**2**
		Two uses of Sodium borohydride-	1 Mark.	
	x)	condensation reaction-	1 Mark.	**2**
		Name one condensation reaction-	1 Mark	

Q.2 Attempt any two:

i.	Racemization-	2 Marks	**10**
	Methods of resolution of racemic mixture.	8 Marks	
ii.	Conformational isomerism in an alkane.	5 Marks	**10**
	Conformational isomerism in cycloalkane.	5 Marks	
iii.	(a) absolute and partial synthesis.	2.5 Marks each	**5**
	(b) Difference between stereospecific and stereoselective reactions-	5 Marks.	**5**

Q.3 Attempt any seven: Two questions from each section is compulsory.

Section - A

i.	Nomenclature-	1 Marks	**5**
	Synthesis-	2 Marks	
	Reactions of Pyrrole-	2 Marks.	
ii.	Relative aromaticity of Pyrrole, Furan and Thiophene-	2.5 Marks	**5**
	Reactivity order of Pyrrole, Furan and Thiophene-	2.5 Marks.	
iii.	Synthesis-	2.5 Marks	**5**
	Chemical reactions of Thiophene-	2.5 Marks.	

Section - B

iv.	Chemical reactions-	3 Marks	**5**
	Medicinal uses of Oxazole-	2 Marks	
v.	Two synthesis-	2.5 Marks	**5**
	chemical reactions of azepines-	2.5 Marks	
vi.	basicity of Pyridine-	5 Marks.	**5**

Section - C

vii.	Mechanism of Birch reduction reaction-	5 Marks.	**5**
viii.	Note on Metal hydrides (NaBH4 and LiAlH4) –	2.5 Marks each.	**5**
ix.	Claisen-Schmidt condensation reaction-	5 Marks.	**5**

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