Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.PHARM – SEMESTER – 4 EXAMINATION – WINTER-2025

Subject Code: BP401TT **Date: 08-12-2025**

Subject Name: Pharmaceutical Organic Chemistry III

Time: 2:30 PM TO 05:30 PM **Total Marks: 80**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Give an account for the stereochemistry of Biphenyl compounds.	**06**
	(b)	Give brief notes on the Conformation of Cyclohexane.	**05**
	(c)	Write in detail about the Resolution of the Racemic mixture.	**05**
Q.2	**(a)**	Define the following terms. 1) Enantiomer 2) Meso isomer 3) Heterocyclic compound 4) Chiral center 5) Configuration 6) conformational isomer.	**06**
	(b)	Discuss the sequence rule with examples in detail.	**05**
	(c)	Explain Clemmensen reduction in detail.	**05**
Q.3	**(a)**	Give the structure of 1) Oxazole 2) Acridine 3) Purine 4) azepines 5) Pyrazole 6) Pyrimidine	**06**
	(b)	Write down the Synthesis and medicinal uses of azepines.	**05**
	(c)	Explain the Basicity of pyridine.	**05**
Q.4	**(a)**	Write any three reactions in detail for 1) Pyridine 2) Isoquinoline.	**06**
	(b)	Write about Oppenauer-oxidation.	**05**
	(c)	Give the reaction involved in Beckmann rearrangement and Wolff Kishner reduction.	**05**
Q.5	**(a)**	Give a brief note on the reaction involved in LiAlH4 and NaBH4	**06**
	(b)	Comment on the following 1. Pyridine is less basic than aliphatic amines. 2. Pyrrole is more aromatic than furan.	**05**
	(c)	Discuss nomenclature and classification of Thiophene and Furan.	**05**
Q. 6	**(a)**	Describe methods of synthesis of indole and explain any one method in detail.	**06**
	(b)	Explain the Birch reduction reaction in detail.	**05**
	(c)	Give a Brief note with a mechanism on a) Dakin Reaction b) Schmidt rearrangement	**05**
Q.7	**(a)**	Write a short note on the following: 1) Skraup Quinoline Synthesis 2) Why is pyrrole a weaker base than pyridine?	**06**
	(b)	Discuss Optical activity in detail.	**05**
	(c)	What are stereospecific and stereo selective reactions explain with examples.	**05**

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