

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM – SEMESTER – 4 EXAMINATION – WINTER-2025

Subject Code: BP402TP**Date: 10-12-2025****Subject Name: Medicinal Chemistry I****Time: 02:30 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) Write all possible routes for the metabolism of norepinephrine. **06**
(b) Explain the structure activity relationship among phenylethanolamine type of adrenergic agonists. **05**
(c) Explain biosynthesis of nor-adrenaline and role of MAO & COMT in its metabolism. **05**
- Q.2** (a) Describe the SAR of adrenergic agonists. **06**
(b) Write synthesis for Phenylephrine and Salbutamol. **05**
(c) Mention the uses for following drugs: i) Clonidine ii) Terbutaline iii) Naphazoline iv) Pseudoephedrine v) Oxymetazoline. **05**
- Q.3** (a) Explain classification of Sympathomimetic agents. **06**
(b) Give SAR of Benzodiazepines. **05**
(c) What are antipsychotics drugs? Write SAR of phenothiazines. **05**
- Q.4** (a) Define: Chelation, Bioisosterism, Partition coefficient, Ionization, Optical isomerism, Hydrogen bonding. **06**
(b) Write a note on narcotic antagonist. **05**
(c) Explain classification of Anticonvulsant drugs. **05**
- Q.5** (a) Define adrenergic blockers. Explain SAR of beta (β)-blockers. **06**
(b) Write a note on solanaceous alkaloids and analogues. **05**
(c) Discuss in brief the development of medicinal chemistry. **05**
- Q.6** (a) Explain various Phase-I reactions involved drug metabolism with suitable examples. **06**
(b) Write a note on non-steroidal anti-inflammatory drugs (NSAIDs). **05**
(c) Classify the antiepileptics with one drug's structure from each class. **05**
- Q.7** (a) Give structure of a typical cholinergic agonist. Explain the effect of modification at acyloxy group and quaternary ammonium group on the activity of cholinergic agonists. **06**
(b) Classify the general anaesthetics with two drugs' structures from each class. **05**
(c) Write the chemical class, synthesis and use of dicyclomine hydrochloride. **05**
