

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

**Subject Code: BP402TP****Date: 31 - 05 - 2025****Subject Name: Medicinal Chemistry I****Time: 10.30 AM TO 01.30 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) Define and explain sedative and hypnotic drugs. Explain SAR of benzodiazepine in detail. **06**  
(b) Write brief note on SAR of Sympathomimetic Agents with appropriate structural examples. **05**  
(c) Explain the Structural Activity Relationship of Phenothiazines with examples. **05**
- Q.2** (a) Define Anticonvulsants. Give SAR of Anticonvulsants with appropriate examples. **06**  
(b) State and explain Isosterism and Bioisosterism. Give a classification of Bioisosterism with appropriate examples. **05**  
(c) Give brief accounts of the classification of Parasympathomimetic agents with appropriate structural examples. **05**
- Q.3** (a) Write a short note on the Classification of Antipsychotics giving suitable examples. **06**  
(b) Draw the structure of i) Chlorprothixene ii) Thiothixene iii) Clozapine iv) Haloperidol v) Valproic acid **05**  
(c) Write synthetic pathway of the following drugs: i) Propranolol ii) Phenylephrine **05**
- Q.4** (a) Explain the SAR of barbiturates in detail with structural examples. **06**  
(b) Give the name and structure of any two-ring Analogues of Phenothiazines and Write the synthesis of Phenytoin. **05**  
(c) Explain the synthetic pathway of the following drugs: **05**  
i. Mefenamic acid ii. Ibuprofen
- Q.5** (a) Enlist and give a brief note on the Physio-chemical parameter of drug affecting biological activity. **06**  
(b) Write a short note on the SAR of Morphine with appropriate examples. **05**  
(c) Write Synthesis of the following drugs: i. Salbutamol ii. Neostigmine **05**
- Q.6** (a) Write a note on NSAIDs giving appropriate structural examples **06**  
(b) Give the name of any three Narcotic antagonists with its structures. **05**  
(c) Write synthetic pathway of the following drugs: i) Tolazoline ii) Dicyclomine **05**
- Q.7** (a) Define Xenobiotics. Explain Phase-I reaction metabolism with appropriate examples and mechanisms. **06**  
(b) Give a Short note on volatile Inhalation Anesthetics. **05**  
(c) Give a synthesis of barbital and Diazepam. **05**