

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Pharm –SEMESTER – IV EXAMINATION – WINTER -2021

Subject Code:BP402TP**Date: 21/02/2022****Subject Name: Medicinal Chemistry I****Time: 02:30PM to 05:30PM****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) Classify adrenergic drugs with examples according to the receptors they affect. **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) Explain structure activity relationship of beta blockers and give synthesis of propranolol. **06**
 (b) Write synthesis for Phenylephrine and Salbutamol **05**
 (c) Mention the uses for following drugs- **05**
 i) Clonidine ii) Terbutaline iii) Naphazoline iv) Pseudoephedrine v) Oxymetazoline
- Q.3** (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 synthetic cholinergic blocking agents with examples and uses. Write synthesis of Dicyclomine HCl. **05**
 (c) Explain mechanism of action and uses of following drugs- **05**
 i) Homatropine HBr. ii) Pyridostigmine iii) Pralidoxime chloride
 iv) Pilocarpine v) Atropine sulphate
- Q.4** (a) Answer the following in short (1.5 marks each) **06**
 i) What are sedatives & hypnotics?
 ii) Give chemical classification of sedatives & hypnotics.
 iii) What are different types of Barbiturates?
 iv) Write synthesis of Diazepam.
- (b) Explain the Structure Activity Relationship in Barbiturates **OR** **05**
 Benzodiazepines.
- (c) Classify Anti-psychotic Drugs. Explain the structure activity relationship at Alkyl side chain and basic amino group of phenothiazines. **05**
- Q.5** (a) Answer the following (2 marks each) **06**
 i) Give chemical classification of anticonvulsants.
 ii) Explain mechanism of action of anticonvulsants.
 iii) Write synthesis of Ethosuximide.
- (b) Explain common structural features of anti-convulsant drugs. Write synthesis of Phenytoin and Carbamazepine. **05**
- (c) Explain the mechanism of action for Narcotic and Non-Narcotic analgesics. **05**
 Write structures of Morphine, Methadone HCl and Ibuprofen.

- Q. 6** (a) Explain various Phase-I reactions involved drug metabolism with suitable examples. **06**
- (b) Describe Partition Coefficient & Optical isomerism and explain how they contribute to biological action of a drug. **05**
- (c) Enlist factors affecting drug metabolism and explain any two of them. **05**
- Q.7** (a) Answer the following (2 marks each) **06**
- i) Describe the terms 'General Anesthetics' and 'Dissociative Anesthetics'.
- ii) Write structures of Halothane and Methohexital sodium
- iii) Define Narcotic Analgesics. What is the source of Morphine?
- (b) Give chemical classification of non-steroidal anti-inflammatory agents with examples. **05**
- (c) Write mechanism of action and synthesis of Fentanyl citrate and Mefenamic acid. **05**
