Roll No…….. **Total No. of Printed Pages: [01]**
Total No. of Questions: [13]

B. Pharmacy (Semester – 4th)
MEDICINAL CHEMISTRY-I
Subject Code: BP402T
Paper ID: [17170119]

Time: 03 Hours **Maximum Marks: 75**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 9 questions of 5 marks each. The student has to attempt any 7 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:
a) Define bioisosterism and give an example.
b) What are the phases of drug metabolism?
c) Name two indirect-acting sympathomimetic agents.
d) Name two drugs classified as cholinergic blocking agents.
e) What is the primary function of benzodiazepines?
f) Name two phenothiazine antipsychotic drugs.
g) Give an example of an inhalation anesthetic.
h) What is the significance of partition coefficient in drug design?
i) Mention the biosynthetic precursor of catecholamines.
j) List two anti-inflammatory agents used for pain relief.

Section – B **(5 marks each)**

Q2. Explain the role of a physicochemical property such as ionization in the biological action of drugs.
Q3. Describe Phase I reactions in drug metabolism with examples.
Q4. Discuss the structure-activity relationship (SAR) of sympathomimetic agents.
Q5. Outline the mechanism of action of beta-adrenergic blockers.
Q6. Explain the biosynthesis of acetylcholine.
Q7. Describe the pharmacological action of benzodiazepines.
Q8. Give the mechanism of action of phenothiazine antipsychotics.
Q9. Give the classification of inhalation anesthetics.
Q10. Describe the SAR of morphine and its analogs.

Section – C **(10 marks each)**

Q11. Explain the role of physicochemical properties like solubility, and partition coefficient in drug design. Provide examples of their impact on drug absorption and bioavailability.
Q12. Discuss the mechanisms of action of parasympathomimetic agents and their SAR. Include both direct-acting and indirect-acting agents and their therapeutic uses.
Q13. Compare the SAR and mechanisms of action of typical (phenothiazines) and atypical (e.g., clozapine) antipsychotics. Discuss their therapeutic uses and potential side effects.