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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.