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

B. Pharmacy (Semester – 6th)
MEDICINAL CHEMISTRY-III
Subject Code: BP601T
Paper ID: [17170129]

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) How does β-Lactam Antibiotics exhibit antibacterial activity?
   b) Give names, chemical structures, and common therapeutic uses of two tetracycline antibiotics.
   c) What is the concept of prodrugs in drug design.
   d) What is the mechanism of action of chloroquine in the treatment of malaria?
   e) Briefly describe the role of isoniazid in tuberculosis treatment.
   f) How does acyclovir work against viral infections?
   g) What is the mechanism of action of fluconazole as an antifungal agent?
   h) Give name and chemical structure of one anthelmintic agent.
   i) What is the significance of folate reductase inhibitors like trimethoprim in antimicrobial therapy?
   j) What is the importance of physicochemical parameters in quantitative structure-activity relationship (QSAR) studies?

Section – B **(5 marks each)**

Q2. What are Cepholosporins and explain their mechanism of action.
Q3. Describe the role of stereochemistry in antibiotic effectiveness.
Q4. Outline the basic concept of prodrug design with one example.
Q5. Explain the structure-activity relationship (SAR) of quinoline antimalarial drugs.
Q6. List and describe two synthetic anti-tubercular agents with their therapeutic uses.
Q7. Briefly discuss the role of quinolones as urinary tract anti-infective agents.
Q8. Outline the mechanism of action of any two antiviral agents.
Q9. Explain the historical significance and basic SAR of sulfonamides.
Q10. Describe two approaches used in drug design and their importance in medicinal chemistry.

Section – C **(10 marks each)**

Q11. Discuss the various physicochemical parameters used in QSAR, including partition coefficient, Hammet's electronic parameter, and Taft's steric parameter.
Q12. Explain the chemistry, mechanism of action, SAR, and therapeutic uses of antifungal agents.
Q13. Describe the principles of pharmacophore modeling and docking techniques in drug design, along with their applications.