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Total No. of Printed Pages: [01]

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**B. Pharmacy (Semester – 6<sup>th</sup>)**  
**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  $\beta$ -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 Cephalosporins 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, Hammett'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.