



Code No. : 9525

FACULTY OF SCIENCE  
M.Sc. IV Semester Examination, May/June 2012  
ORGANIC CHEMISTRY  
Paper – II (402) : Mechanism of Action of Drugs

Time : 3 Hours]

[Max. Marks : 80

**Note :** Answer *all* questions.

SECTION – A

(4×8=32 Marks)

1. a) Explain the principles of enzyme inhibition. 4  
b) What are neurons ? Describe the nervous system. 4
2. a) Describe the synthesis of sulpha guanidine from aniline. 4  
b) Explain the mechanism of action of trimethoprim. 4
3. a) Present a synthesis of metronidazole. 4  
b) What is AZT ? Write its structure and explain its importance. 4
4. a) What are the structures of L-Dopa and chlorpromazine ? Describe their pharmacological activities. 4  
b) Explain the pharmacological activities of metoprolol and atenolol. 4

SECTION – B

(4×12=48 Marks)

5. a) Explain the structure of human-cell and the importance of proteins and carbohydrates. 6  
b) Describe the immune system and principles of enzyme inhibition. 6

OR

- c) What are receptors ? How are they classified and explain their importance. 6
- d) Discuss the structure of bacterial cell wall and folate mechanism in bacteria. 6
6. a) Explain the mechanism of action of penicillins and cephalosporins. 6  
b) Outline the synthesis of cycloserine and describe its importance. 6

OR

- c) What are beta-lactamase inhibitors ? Explain the mechanism of action of sulbactam and clavulanic acid. 6
- d) What do you understand by drugs acting on ion-channels ? Present a sequential synthesis of nifedipine. 6



Code No. : 9525

7. a) What are anti-cancer agents ? Explain their mechanism of action with an example. 6
- b) Describe the synthesis of ofloxacin and explain its therapeutic uses. 6
- OR
- c) What are anti-leprosy agents ? Name any two of them. Describe their mechanism of action. 6
- d) Discuss the importance and synthesis of omeprazole from the basic stage. 6
8. a) Draw the structural formulae of atropine, nicotine and tubocurarine. Explain the biological activity of these drugs. 6
- b) Describe the synthesis of serotonin and its mode of action. 6
- OR
- c) What are histamine receptor agonists and antagonists ? Write the structures and importance of ranitidine and cimetidine. 6
- d) Discuss the synthesis and geological action of Baclofen. 6
-