

FACULTY OF SCIENCE
M.Sc. IV – Semester Examination, April / May 2014

Subject: Organic Chemistry
Paper – II: Mechanism of Action & Drugs

Time: 3 Hours

Max.Marks: 80

Note: Answer All questions from Part – A and Part – B. Each question carries 4 marks in Part – A and 12 marks in Part – B.

PART – A (4 x 8 = 32 Marks)
[Short Answer Type]

- 1 (a) Draw the structure of bacteria cell wall and label it.
 (b) Represent the enzyme inhibition with a diagram.
- 2 (a) Write the synthesis of tetracaine.
 (b) Write the structure of polymyxins and explain their action on cell membrane.
- 3 (a) Write the structure of erythromycin and explain how it interferes with translation process in bacteria.
 (b) Outline the synthesis of chloroquine and explain its medical importance.
- 4 (a) Write the biosynthesis of catecholamine and its biological importance.
 (b) Outline the synthesis of chlorpheniramine and explain its pharmacological importance.

PART – B (4 x 12 = 48 Marks)
[Essay Answer Type]

- 5 (a) What are receptors? How do you classify them? Explain their importance.
 (b) Write a short note on:
 i) Neurotransmitters ii) Folate metabolism in bacteria.
OR
 (c) Draw the structure of human cell and explain.
 (d) Discuss about the following:
 i) Ion channels ii) Agonists and antagonists.
- 6 (a) Present the synthesis and mechanism of action of sulfguanidine.
 (b) Write the synthesis of (i) Daspone (ii) Diltiazem.
OR
 (c) Explain the mechanism of action of sulfonamides and diaminopyrimidines.
 (d) What are β -lactamase inhibitors? Explain the mechanism of action salbactam and clavulanic acid.
- 7 (a) Write the synthesis of acyclovir and explain its mode of action.
 (b) Outline the synthesis of (i) Metrinidazole (ii) Norfloxacin.
OR
 (c) Classify the drugs that act on genetic material giving one example each.
 (d) Draw the synthesis of (i) Swainsonine (ii) Omeprazole.
- 8 (a) Write the synthesis and biological action of serotonin.
 (b) Outline the synthesis of (i) Methyl dopa (ii) Cimetidine
OR
 (c) Write one synthesis each of the following and mention their mechanism of action.
 i) L – DOPA ii) Acetylcholin
 (d) Write the structural formula and mechanism of action of cyclosporine.
