

Code No. 3167 / CORE

FACULTY OF SCIENCE
M.Sc. IV – Semester Examination, May / June 2018

Subject: Chemistry (Organic Chemistry / Pharmaceutical Chemistry)/

Paper – II
Drug Synthesis and Mechanism of Action

Time : 3 Hours

Max. Marks: 80

Note : Answer all questions from Part–A and Part–B. Each question carries 8 marks in Part–A and 12 marks in Part – B.

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

- (a) What is drug synergism? Explain with an example.
(b) What are carbonic anhydrase inhibitors? What is their medicinal use? Give the synthesis of acetazolamide?
- (a) Give the structure of lomefloxacin and explain its mechanism of action.
(b) Formulate the synthesis of chloroquin.
- (a) Explain the terms neuro transmitters, receptors and give examples.
(b) What are β -blockers? What is their medicinal used? Give the structure of any one drug of this class.
- (a) Draw the structures of eutomer of ethambutol and metaprolol.
(b) Outline the synthesis of S, S – captopril.

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

- (a) What are antifolates? Explain the mechanism of sulphonamides.
(b) Formulate the synthesis of omeprazole.
OR
(c) What are β -Lactamase inhibitors? What is their medicinal importance? Explain the mechanism of action of clavulanic acid.
(d) Formulate the synthesis of pencillin-G.
- (a) Explain the mechanism of cyclophosphamide and give reasons for its selectivity.
(b) What are DNA-intercalating agents? Give the structure of Daunomycin and explain its mechanism of action.
OR
(c) Formulate the synthesis of AZT and chloromycetin.
(d) Write a brief note on vaccines.

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- 7 (a) What are cholinergic receptors? How are they classified? Give an example of agonist and antagonist for those.
(b) Formulate the synthesis of ranitidine.

OR

- (c) What are ion channels? Explain the mechanism of action of drugs acting on sodium channels.
(d) Write a brief note on dopamine receptors.
- 8 (a) Explain about the chiral drugs in which both enantiomers have independent therapeutic activity.
(b) Formulate the synthesis of R-Indacrinone and mention its medicinal use.

OR

- (c) Explain metabolic chirality inversion.
(d) Formulate the synthesis of fluvastatin and explain its pharmacological activity.



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