

FACULTY OF SCIENCE
M.Sc. IV-Semester Examination, July 2021

Sub: Chemistry (Organic Chemistry / Pharmaceutical Chemistry)
Paper – I : Drug Design and Drug Discovery

Time: 2 Hours

Max.Marks:80

PART – A

Answer any five questions.

(5x7=35 Marks)

- 1 Explain about pharmacokinetics (ADME) and pharmacodynamics.
- 2 Write a short note on folklore drugs and me too drugs.
- 3 Explain the use of Chain homologation and branching in lead modification strategies in drug designing.
- 4 What is the lead modification strategy that is applied on cocaine to get procaine? Explain.
- 5 Write a short note on Lipinski's rule of five.
- 6 Write about Hammett constant and lipophilicity constant.
- 7 Discuss about types of resins and linkers used in solid phase synthesis.
- 8 Write a short note on Haughton's tea bag procedure.

PART – B

Answer any three questions.

(3x15=45 Marks)

- 9 (a) Explain induced fit and Macromolecular perturbation theory.
(b) Write a short note on clinical trials.
- 10 (a) What is serendipity in drugs discovery ? Explain with an example.
(b) Explain how salbutamol is designed as agonist.
- 11 (a) Discuss briefly about SAR studies in taxol analogues.
(b) How Cimitidine is discovered? Explain.
- 12 (a) Discuss about simplification and rigidification of lead in drug designing.
(b) Discuss about SAR studies in benzodiazepines.
- 13 Briefly discuss the following:
(a) Hansch analysis
(b) Differences between ligand and structure based drug design.
- 14 Briefly discuss the following:
(a) Cluster significant analysis.
(b) Craig's plot.
- 15 (a) Discuss about mixed combinatorial synthesis.
(b) Write a short note High throughput screening.
- 16 Explain the following in detail:
(a) Automation in combinatorial synthesis
(b) Tagging and use of decoded sheets.

