

M. Pharm. First Year First Semester Exam 2025

Subject- Chemistry of Natural Products

Subject Code: MPC104T

Full Marks: 75

Time: 3 hr

Answer any five questions taking at least two from each group

Group-A

1. a) Define and classify terpenoids with examples.
b) Outline the biosynthesis of C₂₀ carbon terpenoid class starting from isoprene.
c) Draw a scheme for the isolation of Capsanthin from Paprica and Lycopene from Tomato.
[2+8+5= 15]
2. a) Discuss the importance of plant secondary metabolites citing structure of 4 alkaloids and 2 each of glycoside, anthraquinones and steroids.
b) What is biogenesis and biosynthesis? Classify carotenoids with examples. [10+5=15]
3. a) What are macrolides? Give few examples.
b) Discuss the mode of action & SAR of macrolides.
c) Outline degradation pattern of macrolides. [2+8+5=15]
4. Discuss in brief the protocols of "lead finding" in drug discovery and development with special emphasis on combinatorial chemistry. [15]

Group-B

5. a) Discuss the biosynthesis and mechanisms of topoisomerase. 5 + 5 = 10
b) Write in detail about the overall Structural requirements of CPT analogs for higher cytotoxicity. 5
6. a) Write an account on the structural elucidation of pyridoxine. 6
b) How do you elucidate the structure of Vitamin K. 9
7. a) Write an account on the development strategy for novel antimalarial drugs. 5
b) Write an account on novel antimalarial compounds in preclinical and clinical development. 4
c) Discuss any three potential targets related to the development of antimalarial drugs. 6
8. a) Discuss ethnobotany and traditional sources of natural products. 4
b) Write an account on naturally occurring alkaloids. 4
c) Discuss biosynthesis of morphine alkaloid. 2
d) Write any two synthesis route of morphine and codeine. 2.5 x 2 = 5