

B. Pharm 3rd Year 2nd Semester Examination-2024

Medicinal Chemistry-III

Code- Ex/BP601T/2024

Time : Three hours

Full Marks : 75

Answer five questions (at least two questions from Group A and at least one from other groups)

Group-A

1. a) Discuss the brief history of antibiotic discovery. [3]
 b) Define and classify antibiotics with examples. [4]
 c) What are the ideal characteristics of an antibiotic? [2]
 d) Discuss the mode of action & SAR of Cephalosporin. [6]
2. a) Classify Cephalosporin based on generation with structure and examples. [2]
 b) Outline synthetic scheme of Ampicillin, Cloxacillin, Cefalexin and Cephalothin. [10]
 c) Discuss the degradation of Penicillin. [3]
3. a) What are tetracyclines? Draw the structural features of Tetracyclines. [5]
 b) What is the biological source of Chloramphenicol? [1]
 c) Outline the synthesis, mode of action & SAR of Chloramphenicol? [3+6=9]
4. a) What are macrolides? [2]
 b) Discuss the mode of action and SAR of macrolides. [7]
 c) Draw the scheme for chemical degradation of Cephalosporin & instability of Tetracycline.

[3+3=6]

GROUP B

5. Write short notes on: [3 x 5]
 - a. Molecular docking
 - b. Pharmacophore
 - c. Conformational analysis
6. Discuss on:
 - a. The role of graphs and equations in QSAR
 - b. Dependent and independent variables in QSAR with examples [7.5+7.5]
7. Give an account of electronic substituent constants in QSAR [15]

[Turn over

[2]

Group C

8. a) Discuss the synthesis, mechanism of action, and adverse effects of Isoniazide. 7
b) Write in detail on the antitubercular activity of capreomycin and streptomycin. $4 + 4 = 8$
9. a) Write in detail about the synthesis, mechanism of action, pharmacokinetics, and adverse effects of pyrazinamide. 8
b) Write an account of the details of cycloserine. 7
10. a) Write down the synthetic steps of ethionamide from diethyl oxalate. 5
b) Write down the detailed mechanism of action, adverse effects, and structures of Rifampicin and Rifabutin. $5 + 5 = 10$