ADVANCED PHARMACEUTICAL CHEMISTRY

Unit 1
Nucleophilic substitution reactions- SN1, SN2 including their mechanisms, Elimination reactions- El and E2 including their mechanisms.

Unit 2
Named reactions:
Michael addition, Mannich reaction, Bayer Villager oxidation, Oppenaeur oxidation and their applications in organic synthesis.

Unit 3
Reagents and their applications:
Lithium aluminium tetrahydride, Sodiumborohydride, N Bromosuccinamide and Diazomethane

Unit 4
General methods of Isolation of alkaloids, Identification tests and general methods used in their structural determination.

Unit 5
Cardiac glycosides: Isolation, Methods of hydrolysis and structural features.
Marine natural products with therapeutic potential.

Unit 6
Pro drugs and soft drugs:
Objectives of pro drug design and strategies of design of pro drugs

Unit 7
Types of receptors, Binding forces, theories of drug action.

Unit 8
Anti viral and Anti HIV drugs, Anti hypertensive drugs. Antipsychotics and Antidepressants.

ANDHRA UNIVERSITY
TRANS-DISCIPLINARY RESEARCH HUB

MODEL QUESTION PAPER

Time: 3 hours **(Max Marks: 100)**

Answer any five questions- All questions carry equal marks.

1) What do you understand by the terms SN1 and SN2? Explain with suitable examples the mechanistic features of these reactions.

2) Discuss the mechanism and applications of:

a) Mannich reaction. b) Oppenaeur oxidation

3) Give an account of the applications of Lithium aluminium tetrahydride in organic synthesis.

4) What are alkaloids? Discuss the general methods of their structural determination.

5) What are soft drugs? Discuss with examples their advantages and disadvantages.

6) What are Anti depressants? Classify them with examples, Discuss the mode of action and SAR of tricyclic anti depressants. Outline the synthesis of imipramine.

7) What do you know of:

a) Marine natural products b) Types of receptors.

8) Write short notes on

a) Prodrugs b) Antihypertensive agents