

# 2012 Scheme

QP CODE: 211006

Reg. No: .....

Second Year B.Pharm Degree Supplementary Examinations July 2025

## Pharmaceutical Chemistry III (Advanced Organic Chemistry)

Time: 3 Hours

Total Marks: 100

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw table/diagrams/flow charts wherever necessary

### Essays

(3x10=30)

1. a) Explain the Cahn-Ingold-Prelog sequence rule system.  
b) Write a note on stereospecific and stereoselective reactions. (6+4)
2. a) Differentiate catalytic hydrogenation from metal hydride reduction.  
b) Explain the Beckmann rearrangement reaction with the reaction mechanism and synthetic importance. (3+7)
3. a) Outline the substitution reactions of Furan.  
b) Describe the synthesis and important chemical reactions of Quinoline. (4+6)

### Short notes

(14x5=70)

4. Explain the following terms with examples  
a) Chirality.  
b) Elements of symmetry.
5. Define racemic modification. Explain the resolution of racemic modification.
6. Give a note on Walden inversion.
7. Give a note on addition reactions.
8. What is Clemmensen reduction. Outline the reaction mechanism.
9. Explain the reaction mechanism and applications of Curtius rearrangement reaction.
10. Outline the reaction mechanism and synthetic applications of Birch reduction.
11. Give a note on the following reactions  
a) Paal-Knorr pyrrole synthesis  
b) Hantzsch thiazole synthesis
12. Thiophen is more aromatic than furan. Explain.
13. Explain the preparation and important chemical reactions of Acridine.
14. Give one method of preparation each for indole and pyridines.
15. What are polynuclear aromatic hydrocarbons. Outline the electrophilic substitution reactions of Naphthalene.
16. Outline the bromination, oxidation, and reduction reactions of Phenanthrene.
17. Describe the aromaticity and reduction reactions of Naphthacene.

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