

SECOND YEAR B.PHARM. EXAMINATION
PAPER III – ADVANCED PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. Code: 564258

Time: Three hours

Maximum: 100 marks

I. Essay: **(2 x 20 = 40)**

1. a) What is cis-trans isomerism? Explain the E-Z system of nomenclature.
b) Explain the various methods of determination of configuration of geometric isomers.
2. a) Define and classify alkaloids. Explain the chemistry of Papaverine.
b) What are cardiac glycosides? Explain the stereochemistry of cardiac glycosides.

II. Short notes: **(8 x 5 = 40)**

1. Define resolution of racemic modification. Explain the method of resolution by formation of diastereomers.
2. Explain conformational analysis of monosubstituted cyclohexane.
3. Discuss the interrelation between caffeine, theophylline and theobromine.
4. What happens when
 - a) Pyridine is oxidized with perbenzoic acid.
 - b) Quinoline is treated with sulphuric acid.
 - c) Pyrrole is reduced with nickel.
 - d) Imidazole is treated with benzoyl chloride.
 - e) Furan is treated with maleic anhydride.
5. Explain optical isomerism in meso-tartaric acid.
6. Explain the chemistry of citral.
7. Classify flavonoids and give examples. Write a brief note on hesperidin.
8. Give reasons for the following.
 - a) Pyrrole undergoes electrophilic substitution at 2-position
 - b) Pyridine undergoes electrophilic substitution at 3-position and nucleophilic substitution at 2- and 4-positions

III. Short answers: **(10 x 2 = 20)**

1. What is Walden inversion?
2. What is 1,3-diaxial interaction?
3. What is Birch reduction?
4. Give the structure and use of (a) Thymol (b) Camphor
5. Define plane of symmetry
6. Give one test for the identification of Atropine.
7. Write any two reactions of isoquinoline
8. What are configurational and conformational isomers?
9. Write any two uses of sodium borohydride
10. What is Schmidt rearrangement?