18BP041 PHARMACEUTICAL ORGANIC CHEMISTRY–III

Hours Per Week :

L	T	P	CP	CL
3	1	-	-	4

Total Hours :

L	T	P
45	-	-

WA/RA	SSH/HSH	CS	SA	S	BS

SCOPE:

This subject imparts knowledge on stereo-chemical aspects of organic compounds and organic reactions, important named reactions, chemistry of important hetero cyclic compounds. It also emphasizes on medicinal and other uses of organic compounds.

COURSE OUTCOMES:

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes	POs	PSOs
1	Understand the methods of preparation and properties of organic compounds	1,4	1,2
2	Explain the stereo chemical aspects of organic compounds and stereo chemical reactions	1,4	1,2
3	Know the medicinal uses and other applications of organic compounds	1,4	1,2
4	Introduce to assymetric synthesis	1,4	1,2

UNIT-I **10HOURS**

STEREO ISOMERISM: Optical isomerism–Optical activity, enantiomerism, diastereoisomerism, meson compounds Elements of symmetry, choral and archival molecules DL system of nomenclature of optical isomers, sequence rules, RS system of nomenclature of optical isomers; Reactions of choral molecules; Raceme modification and resolution of raceme mixture. Asymmetric synthesis: partial and absolute.

UNIT-II **10HOURS**

GEOMETRICAL ISOMERISM: Nomenclature of geometrical isomers (Cist Trans, EZ, Sin Anti systems); Methods of determination of configuration of geometrical isomers; Conformational isomerism in Ethane, n-Butane and Cyclo hexane; Stereo isomerism in biphenyl compounds (Atropisomerism) and conditions for optical activity. Stereo specific and stereo selective reactions.

UNIT-III **10HOUR**

HETEROCYCLIC COMPOUNDS: Nomenclature and classification Synthesis, reactions and medicinal uses of following compounds/derivatives Parole, Furan, and Thiophene. Relative aromaticity and reactivity of Parole, Furan and Thiophene.

UNIT - IV **8HOURS**

SYNTHESIS: Reactions and medicinal uses of following compounds/derivatives; Parasol, Imidazole, Oxazol and Diazole; Pyridine, Quinoline, Iso quinoline, Alcidine and Insole. Basicity of pyridine; Synthesis and medicinal uses of Pyrimidine, Purina, adenines and their; Derivatives.

UNIT - V **07HOURS**

REACTIONS OF SYNTHETIC IMPORTANCE: Metal hydride reduction ($NaBH_4$ and $LiAlH_4$), Clemensen reduction, Birch reduction, Wolff Kishner's reduction. Oppenauer-oxidation and Dakin reaction. Beckmanns rearrangement and Schmidt rearrangement. Claisen-Schmidt condensation.

RECOMMENDED BOOKS (LATEST EDITIONS)

1. Organic chemistry by I.L. Finar, Volume-I & II.
2. A text book of organic chemistry – Arum Bah, B.S. Bahl.
3. Heterocyclic Chemistry by Raj Kabanas.
4. Organic Chemistry by Morrison and Boyd.
5. Heterocyclic Chemistry by T.L. Gilchrist.