

LESSONPLAN

Faculty Name: Ms Arti

Class: B. Pharmacy –2<sup>nd</sup> semester

Subject :Pharmaceutical Organic Chemistry –I

Subject Code: BP202T

**Scope of the Subject:** This subject deals with classification and nomenclature of simple organic compounds, structural isomerism, intermediates forming in reactions, important physical properties, reactions and methods of preparation of these compounds. The syllabus also emphasizes on mechanisms and orientation of reactions.

**Course outcome:** Upon completion of the course the student shall be able to

- write the structure, name and the type of isomerism of the organic compound
- write the reaction, name the reaction and orientation of reactions
- account for reactivity/stability of compounds,
- identify /confirm the identification of organic compound

Number of Lectures: 45 + 5

Each lecture: 01 hour

Lecture No.	Particular	Remark/Date
<b>Introduction</b>		
1.	General discussion about basic concepts of organic chemistry	
<b>Unit 1</b>		
<b>Module 1: Classification, nomenclature and isomerism</b>		
2.	Classification of Organic Compounds	
3.	Common and IUPAC systems of nomenclature of simple hydrocarbons	
4.	IUPAC nomenclature of organic compounds having functional groups	
5.	Practice of IUPAC nomenclature of various organic compounds	
6.	Isomerism classification	
7.	Structural isomerisms in organic compounds	
<b>UNIT -II</b>		
<b>Module 2: Alkanes</b>		
8.	SP <sup>3</sup> hybridization in alkanes,	
9.	Methods of preparation of alkanes	
10.	Physical properties and Halogenation of alkanes,	
11.	Other Chemical properties and uses of paraffins	
<b>Module 3: Alkenes and conjugated dienes</b>		
12.	Stabilities of alkenes, SP <sup>2</sup> hybridization in alkenes	
13.	Methods of Preparation of alkenes	
14.	Physical and Chemical properties of Alkenes	
15.	E1 and E2 reactions – kinetics, order of reactivity of alkyl	

	halides, rearrangement of carbocations, Saytzeffs orientation and evidences. Factors affecting E1 and E2 reactions.	
16.	Ozonolysis, electrophilic addition reactions of alkenes, Markownikoff's orientation, free radical addition reactions of alkenes, Anti Markownikoff's orientation.	
17.	Stability of conjugated dienes, Diel-Alder, electrophilic addition, free radical addition reactions of conjugated dienes, allylic rearrangement	
<b>UNIT-III</b>		
<b>Module 4: Alkyl Halides</b>		
18.	Methods of Preparation and Physical Properties of Alkyl Halides	
19.	Nucleophilic substitution Reactions-(SN1 and SN2 reactions) - kinetics, order of reactivity of alkyl halides	
20.	Factors affecting SN1 and SN2 reactions	
21.	Stereochemistry and rearrangement of carbocations	
22.	Structure and uses of ethyl chloride, Chloroform trichloroethylene, tetrachloroethylene	
23.	Structure and uses of dichloromethane, tetra chloromethane and iodoform.	
<b>Module 5: Alcohols</b>		
24.	Methods of Preparation and Physical Properties of Alcohols	
25.	Qualitative tests of Alcohols, Structure and uses of Ethyl alcohol, Methyl alcohol,	
26.	Structure and uses of chlorobutanol, Cetosteryl alcohol, Benzyl alcohol,	
27.	Structure and uses of Glycerol, Propylene glycol	
<b>UNIT IV</b>		
<b>Module 6: Carbonyl compounds (Aldehydes and ketones)</b>		
28.	Methods of Preparation of Aldehydes and Ketones	
29.	Physical Properties of Aldehydes and Ketones	
30.	Nucleophilic addition Reactions	
31.	aldol condensation, Crossed Aldol condensation	
32.	Cannizzaro reaction, Crossed Cannizzaro reaction	
33.	Benzoin condensation, Perkin condensation,	
34.	qualitative tests of Aldehydes and Ketones	
35.	Structure and uses of Formaldehyde, Paraldehyde, Acetone,	
36.	Structure and uses of Chloral hydrate, Hexamine,	
37.	Benzaldehyde, Vanilin, Cinnamaldehyde	
<b>UNIT V</b>		
<b>Module 7: Carboxylic acids</b>		
38.	Acidity of carboxylic acids, effect of substituents on acidity, inductive effect	
39.	Qualitative tests for carboxylic acids, amide and ester	
40.	Methods of Preparation and physical and chemical properties of Aldehydes and Ketones	
41.	Structure and Uses of Acetic acid, Lactic acid, Tartaric acid, Citric acid, Succinic acid. Oxalic acid,	

42.	Structure and Uses of Salicylic acid, Benzoic acid, Benzyl benzoate	
43.	Structure and Uses of Dimethyl phthalate, Methyl salicylate and Acetylsalicylic acid	
<b>Module 8: Aliphatic amines</b>		
44.	Basicity, effect of substituent on Basicity.	
45.	Methods of Preparation and physical and chemical properties of Aliphatic Amines	
46.	Qualitative test of Aliphatic Amines	
47.	Structure and uses of Ethanolamine, Ethylenediamine, Amphetamine	
<b>Revision</b>		
48.	Revision of Unit I with previous question paper	
49.	Revision of Unit II with previous question papers	
50.	Revision of Unit III with previous question papers	
51.	Revision of Unit IV with previous question papers	
52.	Revision of Unit V with previous question papers	

Teacher in-charge

HOD

Principal