

Subject Code: BP301T	Subject Title: PHARMACEUTICAL ORGANIC CHEMISTRY II - Theory
Pre-requisite Subject	- NONE -

Objectives of course:

Upon completion of the course the student shall be able to

1. Write the structure, name and the type of isomerism of the organic compound
2. Write the reaction, name the reaction and orientation of reactions
3. Account for reactivity/stability of compounds,
4. Prepare organic compounds

Learning outcomes:

This subject deals with general methods of preparation and reactions of some organic compounds. Reactivity of organic compounds is also studied here. The syllabus emphasizes on mechanisms and orientation of reactions. Chemistry of fats and oils are also included in the syllabus.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)		
Lecture	Tutorial	Practical	Credit	Theory(T)		Total Marks
				University Assessment	Continuous Assessment	
						Theory
3	1	--	4	75	25	100

Subject Contents			
Sr. No.	Topic	Total Hours	Weight (%)
	General methods of preparation and reactions of compounds superscripted with asterisk (*) to be explained. To emphasize on definition, types, classification, principles/mechanisms, applications, examples and differences.		
1	Unit I Benzene and its derivatives A. Analytical, synthetic and other evidences in the derivation of structure of benzene, Orbital picture, resonance in benzene, aromatic characters, Huckel's rule B. Reactions of benzene - nitration, sulphonation, halogenations reactivity, Friedel crafts alkylation- reactivity, limitations, Friedelcrafts acylation. C. Substituents, effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction D. Structure and uses of DDT, Saccharin, BHC and Chloramine	10	23
2	UNIT II Phenols* - Acidity of phenols, effect of substituents on acidity, qualitative tests, Structure and uses of phenol, cresols, resorcinol, naphthols Aromatic Amines* - Basicity of amines, effect of substituents on basicity, and synthetic uses of aryl diazonium salts Aromatic Acids* -Acidity, effect of substituents on acidity and important reactions of benzoic acid.	10	23
3	UNIT-III	10	23

	Fats and Oils a. Fatty acids – reactions. b. Hydrolysis, Hydrogenation, Saponification and Rancidity of oils, Drying oils. c. Analytical constants – Acid value, Saponification value, Ester value, Iodine value, Acetyl value, Reichert Meissl (RM) value – significance and principle involved in their determination.		
4	UNIT IV Polynuclear hydrocarbons: a. Synthesis, reactions b. Structure and medicinal uses of Naphthalene, Phenanthrene, Anthracene, Diphenylmethane, Triphenylmethane and their derivatives	8	17
5	UNIT V Cyclo alkanes* Stabilities – Baeyer’s strain theory, limitation of Baeyer’s strain theory, Coulson and Moffitt’s modification, Sachse Mohr’s theory (Theory of strainless rings), reactions of cyclopropane and cyclobutane only	7	14

List of References:

Reference books:

1. Practical Organic Chemistry by Mann and Saunders.
2. Vogel’s text book of Practical Organic Chemistry
3. Advanced Practical organic chemistry by N.K.Vishnoi
4. Introduction to Organic Laboratory techniques by Pavia, Lampman and Kriz.

Text books:

1. Organic Chemistry by Morrison and Boyd
2. Organic Chemistry by I.L. Finar , Volume-I
3. Textbook of Organic Chemistry by B.S. Bahl & Arun Bahl.
4. Organic Chemistry by P.L.Soni

e- Resources:

1. <http://freechemistryonline.com/benzene.html>
2. <https://byjus.com/chemistry/benzene-physical-chemical-properties>
3. https://chem.libretexts.org/Textbook_Maps/Organic_Chemistry_Textbook_Maps
4. https://chem.libretexts.org/Textbook_Maps/Introductory_Chemistry_Textbook_Maps