

SVRK GOVERNMENT DEGREE COLLEGE :: NIDADAYOLE
TABLE - A - CURRICULAR PLAN - LECTURER WISE

NAME OF THE LECTURER : *G. Pabul*
 DEPARTMENT: CHEMISTRY

CLASS: IIB.Sc (B&C)

YEAR: 2021-2022

SEMESTER: III

PAPER: III

SERIAL NUMBER	MONTH & WEEK	HOURS AVAILABLE	SYLLABUS TOPIC	ADDITIONAL INPUT /VALUE ADDITION	CURRICULAR ACTIVITY		CO-CURRICULAR ACTIVITY					REMARKS
					ACTIVITY	HOURS ALLOTTED	WHETHER CONDUCTED	IF NOT, ALTERNATIVE DATE	ACTIVITY	HOURS ALLOTTED	SS	
1	2	3	4	5	6	7	8	9	10	11	11	14
Nov	1 week	4	UNIT I: ORGANIC CHEMISTRY Chemistry of Halogenated Hydrocarbons: Alkyl Halides: Methods of preparation and properties, nucleophilic substitution reactions- SN1, SN2 and SNi mechanisms with stereo chemical aspects and effect of solvent etc.; nucleophilic substitution vs. elimination, Williamson's synthesis	Distinction between Nuclear Halogen and side chain halogen	Lecture	4						

2 week	4	<p>Aryl Halides: Preparation (including preparation from diazonium salts) and properties, nucleophilic aromatic substitution: SN Ar, Benzyne mechanism. Relative reactivity of alkyl, allyl, benzyl, vinyl and aryl halides towards nucleophilic substitution reactions</p>		Audio visual presentation through LCD	3			Assignment	1				
3 week	4	<p>1. Alcohols & Phenols Alcohols: preparation, properties and relative reactivity of 1°, 2°, 3° alcohols, Bouvet Blanc Reduction; Oxidation Of Diols By Periodic Acid And lead Tetra acetate, Pinacol- Pinacolone Rearrangement;</p>	Dihydric ,Tri hydric alcohols Introduction	Lecture	4								
4 week	4	<p>Phenols: Preparation And Properties; Acidity And Factors Affecting It, Ring substitution reactions, Reimer–Tiemann and Kolbe's–Schmidt Reactions, Fries and Claisen Rearrangement with mechanism;</p>		Interactive method	3			Student seminar	1		1		

	4 week	4	UNIT III: Carboxylic Acids and their Derivatives : General methods of preparation, physical properties and reactions of monocarboxylic acids, effect of substituent acidic strength. Typical reactions of carboxylic acids, hydroxy acids and unsaturated acids.	Uses of carboxylic acids and their derivatives	Power point	3			Assignment	1			
Jan	1 week	4	. Preparation And Reactions Of Acid Chlorides, anhydrides, esters and amides; Comparative study of nucleophilic substitution at acyl group- Mechanism of acidic and alkaline hydrolysis of esters, Claisen Condensation, Reformatsky reactions and Curtius Rearrangement		lecture	4							
	2 week	4	Reactions involving H, OH and COOH groups- salt formation, anhydride formation, acid chloride formation, amide formation and esterification (mechanism).		Discussion method	3			Quiz	1			

	3 week	4	Degradation of carboxylic acids by Hunsdiecker reaction, decarboxylation by Schmidt reaction, Arndt-Eistert synthesis, halogenation by Hell-Volhard-Zelinsky reaction.		Lecture Mid exam	3 1							
	4 week	4	UNIT IV: SPECTROSCOPY Molecular Spectroscopy: Interaction of electromagnetic radiation with molecules and various types of spectra; Rotation spectroscopy: Selection rules, intensities of spectral lines, determination of bond lengths of diatomic and linear triatomic molecules, isotopic substitution.	Electromagnetic radiation, Properties of light, Effect of magnetic field on nucleus.	lecture	4							
Feb	1 week	4	Vibrational Spectroscopy: Classical Equation Of Vibration, computation of force constant, Harmonic and anharmonic oscillator, Morse Potential curve, vibrational degrees of freedom for polyatomic molecules, modes of vibration. transitions in molecules, effect of conjugation. Concept of Chromophore. bathochromic and hypsochromic shifts. Beer-Lambert's law and its limitations.		lecture	3			Assign ment	1			
	2 week	4	Selection rules for vibrational transitions, Fundamental Frequencies, overtones and hot bands. Electronic spectroscopy: Energy levels of molecular orbitals (σ , π , n). Selection rules for electronic spectra. Types of electronic in molecules, effect of conjugation. Concept of chromophore. bathochromic and hypsochromic shifts. Beer-Lambert's law and its limitations		Power point	4							

Mar

3 week	4	<p>Nuclear Magnetic Resonance (NMR) spectroscopy: Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, NMR splitting of signals</p> <p>-spin-spin coupling, coupling constants. Applications of NMR with suitable examples</p> <p>- ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromo ethane, ethyl acetate, toluene and acetophenone</p>		Lecture	3				Assignment	1			
4 week	4	<p>UNIT 5:Application of Spectroscopy to Simple Organic Molecules Application of visible, ultraviolet and Infrared spectroscopy in organic molecules. Application of electronic spectroscopy and Woodward rules for calculating λ_{max} of conjugated dienes and α, β – unsaturated compounds.</p>		lecture	3				Student seminar	1			
1 week	4	REVISION		Q&A Method	4								

2 week	4	REVISION		Mind mapping	2			Pre final	2				
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