S V R K GOVERNMENT DEGREE COLLEGE :: NIDADAVOLE
TABLE – A – CURRICULAR PLAN – LECTURER WISE.0

NAME OF THE LECTURER : M.USHARANI
DEPARTMENT : CHEMISTRY **CLASS:II M.P.C** **YEAR: 2021-2022** **SEMESTER: III** **Paper:3**

SERIAL NUMBER	MONTH & WEEK	HOURS AVAILABLE	SYLLABUS TOPIC	ADDITIONAL INPUT /VALUE ADDITION	CURRICULAR ACTIVITY				CO-CURRICULAR ACTIVITIY				REMARKS
					ACTIVITY	HOURS ALLOTED	WHETHER CONDUCTED	IF NOT, ALTERNATIVE DATE	ACTIVITY	HOURS ALLOTED	WHETHER CONDUCTED	IF NOT, ALTERNATIVE DATE	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Nov	3 rd week	4 Hrs	**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. 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.	Distinction between Nuclear Halogen and side chain halogen	Lecture/ICT /Practical	4 Hrs							
	4th week	4 Hrs	**1. Alcohols & Phenols** Alcohols: preparation, properties and relative reactivity of 1°, 2°, 3° alcohols, Bouvet Blanc Reduction; Oxidation Of Diols By Periodic Acid Andlead Tetraacetate,Pinacol- Pinacolone Rearrangement;	Dihydric ,Tri hydric alcohols Introduction	Lecture/ICT /Practical	3 Hrs			Assign ment	1 Hr			

	1 st week	4 Hrs	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;		Lecture/ICT /Practical	4 Hrs							
Dec	2 nd week	4Hrs	**UNIT II:** Carbonyl Compounds: Structure, reactivity, preparation and properties; Nucleophilic Addition, Nucleophilic Addition-elimination reactions with ammonia derivatives Mechanisms of Aldol and Benzoin Condensation,	Analysis of aldehydes and ketones	Lecture/ICT /Practical	3 Hrs			Student seminar	1Hr			
	3 rd week	4Hrs	Claisan-Schmidt, Perkin, Cannizzaro and Wittig reaction, Beckmann Haloform Reaction And Baeyer Villiger oxidation, α- substitution reactions, oxidations and reductions (Clemmensen, wolf –kishner, with LiAlH4 &NaBH4).		Lecture/ICT /Practical Mid exam	3Hrs 1Hrs							
	4 th week	4 Hrs	Addition Re actions Of α, β-unsaturated carbonyl compounds: Michael Addition. Active Methylene Compounds: Keto-enol tautomerism. Preparation And Synthetic Applications Diethyl malonate and ethyl acetoacetate.		Lecture/ICT /Practical	4 Hrs							
Jan	1 st week	4 Hrs	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.	Lecture/ICT /Practical	3 Hrs			Assign ment	1Hr			
	2 nd week	4Hrs	. 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/ICT /Practical	4 Hrs							

	3rd week	4Hrs	Reactions involving H, OH and COOH groups- salt formation, anhydride formation, acid chloride formation, amide formation and esterification (mechanism). Degradation of carboxylic acids by Huns-Diecker reaction, decarboxylation by Schimdt reaction, Arndt- Eistert synthesis, halogenation by Hell- Volhard- Zelinsky reaction.		Lecture/ICT /Practical	4 Hrs							
	4th week	4Hrs	UNIT IV: SPECTROSCOPY Molecular Spectroscopy:Interaction of electromagneticradiation with molecules and varioustypesof spectra; Rotation spectroscopy: Selection rules, intensities of spectral lines, determination of bond lengths of diatomic and linear triatomic molecules, isotopic substitution. 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. .	Electromagnetic radiation „Properties of light, Effect of magnetic field on nucleus.	Lecture/ICT /Practical	3 Hrs			Quiz	1 Hr			
Feb	1 st week	4Hrs	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 transitions in molecules, effect of conjugation. Concept of chromophore. bathochromic and hypsochromic shifts. Beer-Lambert's law and its limitations.		Lecture/ICT /Practical Mid exam	3 Hrs 1 Hr							
	2 nd week	4Hrs	Nuclear Magnetic Resonance (NMR) spectroscopy: Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, NMR splitting of signals -spin-spin coupling, coupling constants. Applications of NMR with suitable examples - ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromo ethane, ethyl acetate, toluene and acetophenone		Lecture/ICT /Practical	4 Hrs							

3 rd week	4Hrs	Reactions involving H, OH and COOH groups- salt formation, anhydride formation, acid chloride formation, amide formation and esterification (mechanism). Degradation of carboxylic acids by Huns-Diecker reaction, decarboxylation by Schimdt reaction, Arndt- Eistert synthesis, halogenation by Hell- Volhard- Zelinsky reaction.		Lecture/ICT /Practical	4 Hrs					
4 th week	4Hrs	UNIT IV: SPECTROSCOPY Molecular Spectroscopy:Interaction of electromagneticradiation with molecules and varioustypesof spectra; Rotation spectroscopy: Selection rules, intensities of spectral lines, determination of bond lengths of diatomic and linear triatomic molecules, isotopic substitution. 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. .	Electromagnetic radiation „Properties of light, Effect of magnetic field on nucleus.	Lecture/ICT /Practical	3 Hrs			Quiz	1 Hr	
1 st week	4Hrs	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 transitions in molecules, effect of conjugation. Concept of chromophore. bathochromic and hypsochromic shifts. Beer-Lambert's law and its limitations.		Lecture/ICT /Practical Mid exam	3 Hrs 1 Hr					
2 nd week	4Hrs	Nuclear Magnetic Resonance (NMR) spectroscopy: Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, NMR splitting of signals -spin-spin coupling, coupling constants. Applications of NMR with suitable examples - ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromo ethane, ethyl acetate, toluene and acetophenone		Lecture/ICT /Practical	4 Hrs					

3 rd week	4Hrs	UNIT V: 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 λmax of conjugated dienes and α,β – unsaturated compounds.		Lecture/ICT /Practical	3 Hrs			Assign ment	1Hr			
4 th week	4Hrs	Rivision		Lecture/ICT /Practical	4 Hrs							

M. Uthaki 22/11/21

SIGNATURE OF THE LECTURER

27/11/21

SIGNATURE OF THE HEAD OF THE DEPARTMENT

27/11/21

SIGNATURE OF THE PRINCIPAL