SVRK GOVERNMENT DEGREE COLLEGE,NIDADAVOLE

TABLE – A – CURRICULAR PLAN – LECTURER WISE

E OF THE LECTURER : Smt. M. USHA RANI
ARTMENT : CHEMISTRY CLASS: I B.SC YEAR: 2021-2022 SEMESTER: 2

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

k	4Hrs	Carbon-Carbon sigma bonds (Alkanes and Cycloalkanes) Recapitulation of Basics of Organic Chemistry General methods of preparation of alkanes: Wurtz and Wurtz-Fittig reaction, Corey House synthesis, physical and chemical properties of alkanes, Isomerism and its effect on properties, Free radical substitutions.	Importance of alkanes and cycloalkanes in day to day life	Lecture	4 Hrs						
eek	4Hrs	Halogenations, concept of relative reactivity v/s selectivity, Conformational analysis of alkanes (Conformations, relative stability and energy diagrams of Ethane, Propane and Butane) General methods		Lecture	Hrs						
week	4Hrs	formulae of cycloalkanes and relative stability, Baeyer strain theory, Cyclohexane conformations with energy diagram, Conformations of mono substituted cyclohexane		Lecture	4 Hrs						
week	4Hrs	**UNIT II: Carbon-Carbon pi Bonds(Alkenes and Alkynes)** General methods of preparation, physical and chemical properties. Mechanism of E1, E2, E1 cb reactions, Saytzeff and Hofmann eliminations, Electrophilic Additions ,mechanism (Markovnikov/Anti Markovnikov additions) with suitable examples	Industrial applications of alkenes and alkynes like acetylene torch.	Lecture	3 Hrs			Assign ment	1 Hr		
st week	4Hrs	.. syn and anti addition, additions(HX, X_2, HX, Oxy mercuration, demercuration, hydroboration-oxidation, ozonolysis, hydroxylation, Diels Alderreaction,1,2- and1,4- addition reactions in conjugated dienes		Lecture	4 Hrs						
nd week	4Hrs	Reactions of alkynes, acidity, electrophilic and nucleophilic additions, hydration to form carbonyl compounds, Alkylation of terminal alkynes		Lecture	4 Hrs						

1 st week	4Hrs	Carbon-Carbon sigma bonds (Alkanes and Cycloalkanes) Recapitulation of Basics of Organic Chemistry General methods of preparation of alkanes- Wurtz and Wurtz-Fittig reaction, Corey House synthesis, physical and chemical properties of alkanes, Isomerism and its effect on properties, Free radical substitutions;	Importance of alkanes and cycloalkanes in day today life	Lecture	4 Hrs							
2 nd week	4Hrs	Halogenations, concept of relative reactivity v/s selectivity. Conformational analysis of alkanes (Conformations, relative stability and energy diagrams of Ethane, Propane and butane) General molecular		Lecture	Hrs							
3 rd week	4Hrs	formulae of cycloalkanes and relative stability, Baeyer strain theory, Cyclohexane conformations with energy diagram, Conformations of mono substituted cyclohexane		Lecture	4 Hrs							
4 th week	4Hrs	**UNIT II: Carbon-Carbon pi Bonds(Alkenes and Alkynes)** General methods of preparation, physical and chemical properties. Mechanism of E1, E2, E1 cb reactions, Saytzeff and Hofmann eliminations, Electrophilic Additions ,mechanism (Markovnikov/Anti Markovnikov addition) with suitable examples	Industrial applications of alkenes and alkynes like acetylene torch.	Lecture	3 Hrs			Assign ment	1 Hr			
1 st week	4Hrs	,, syn and anti-addition; additionofH2,X2, HX. Oxy mercuration, demercuration, hydroboration-oxidation, ozonolysis, hydroxylation, Diels Alderreaction,1,2- and1,4-addition reactions in conjugated dienes		Lecture	4 Hrs							
2 nd week	4Hrs	Reactions of alkynes; acidity, electrophilic and nucleophilic additions, hydration to form carbonyl compounds, Alkylation of terminal alkynes.		Lecture	4 Hrs							

3 rd week	4Hrs	**UNIT III:** Benzene and its reactivity **Concept** of aromaticity, Hückel's rule - **application** to Benzenoid Benzene, **Naphthalene)** and Non- Benzenoid compounds **(cyclopropenyl** cation, cyclopentadienyl anion **and tropylium** cation **Reactions - General** mechanism of electrophilic **aromatic substitution**, mechanism of nitration, **Friedel- Craft's** alkylation and acylation.	Why these aromatic compounds show substion reactions more favourably than addition reactions.	**Lecture** **Mid1**	**2 Hrs** **2 Hrs**								
4 th week	4Hrs	**Orientation** of aromatic substitution - ortho, para **and meta** directing groups. Ring activating and **deactivating groups** with examples (Electronic **interpretation** of **various** groups like NO2 and Phenolic).		**Lecture**	**4 Hrs**								
1 st week	4Hrs	Orientation of i. Amino, **methoxy and** methyl groups ii. Carboxy, **nitro, nitrile**, carbonyl and sulfonic acid groups iii. Halogens **(Explanation** by taking minimum of one **example** from each type)		**Lecture**	**4 Hrs**								
2 nd week	4Hrs	**UNIT IV: GENERAL CHEMISTRY** 1. Surface **chemistry and** chemical bonding Surface chemistry **Colloids- Coagulation** of colloids- Hardy-Schulze **rule. Stability** of colloids, Protection of Colloids, **Gold number.** Adsorption-**Physical** and chemical adsorption, Langmuir **adsorption** isotherm, applications of adsorption.	Introduction to pericyclic reactions	Lecture	4 Hrs								
rd week	4Hrs	**2. Chemical Bonding** Valence **bond theory**, hybridization, VB theory as applied to ClF3,Ni(CO)4, Molecular orbital theory -LCAO method, construction of M.O. diagrams for homo-nuclear and hetero-nuclear diatomic molecules(N2,O2,CO and NO).		Mid2 Lecture	2Hrs 2 Hrs								

4 th week	4Hrs	**3. HSAB** Pearson's concept, HSAB principle & its importance, bonding in Hard-Hard and Soft-Soft combinations.		Lecture	3 Hrs			Quiz	1Hr			
I st week	4Hrs	**UNIT V:Stereochemistry of carbon compounds** Molecular representations- Wedge, Fischer, Newman and Saw-Horse formulae. Optical isomerism:	Chirality for various organic compounds.	Lecture	4 Hrs							
2 nd week	4Hrs	Optical activity- wave nature of light, plane polarised light, optical rotation and specific rotation. Chiral molecules- definition and criteria (Symmetry elements)- Definition of enantiomers and diastereomers		Lecture	3Hrs			Assign ment	1Hr			
3 rd week	4Hrs	Explanation of optical isomerism with examples- Glyceraldehyde, Lactic acid, Alanine, Tartaric acid, 2,3-dibromopentane. D,L, R,S and E,Z-configuration with examples		Lecture	4 Hrs							
4 th week	4Hrs	Revision.		Lecture	4 Hrs							

SIGNATURE OF THE LECTURER

SIGNATURE OF THE HEAD OF THE DEPARTMENT

SIGNATURE OF THE PRINCIPAL