SIR C R REDDY COLLEGE FOR WOMEN, ELURU

Annual Curricular Plan for the Academic Year 2022 - 2023

Name of the Lecturer :	P.RAMYA	RAMYA KRISHNA								
Name of the Department:	CHEMISTE	IEMISTRY								
Program]B.Sc		Group:	MCCS						
Title of the Cours	se: INORGANI	IC,ORGANI	C AND PHY	SICAL CHEMISTRY]	Hrs allotted:	60+30			
Year	п	Se	emester	IV	9	Course Code:	21-BS-424-A			
Section	2]	Hours/Week	4+2			
	T					Methodology				

Unit No. & Name	Hour	Day	Date	Topic to be Covered	Methodology Adopted	Remarks
	1	Thursday	23/03/2023	Demonstration of organic functional group analysis(LAB)	P1,P2	
	2	Friday	24/03/2023	Defnition and classification of organo metallic compounds	P1	
UNIT- 01(ORGANO	3	Saturday	25/03/2023	Hapticity of organic ligands.	P1	
METALLIC COMPOUNDS)	4	Tuesday	28/03/2023	Metal carbonyls: Defnition and classification	P1	
	5	Wednesday	29/03/2023	General methods of preparation of mono and binuclear carbonyls of 3d- series	P1	
	6	Friday	31/03/2023	Pi- acceptor behaviour and synergic effects. MO diagram of CO	P4	

	7	Saturday	01-04-2023	definition and classification of carbohydrates, constitution and structural elucidation of glucose	P1	
	8	Tuesday	04-04-2023	prepartion methods and chemical properties of glucose and fructose	P1	
	9	Thursday	06-04-2023	determination of M.P and B.P,Detection of extra element test	P1,P2	
UNIT- 2(CARBOHYDRA TES)	10	Tuesday	11-04-2023	constitution and structural elucidation of fructose	P6	
TES)	11	wednesday	12-04-2023	interconversions, arabinose to hexose and hexose to arabinose interconversions	P1	
	12	Thursday	13/04/2023	Organic compound analysis-1	P1,P2	
	13	Saturday	15/04/2023	elementary treatment of Disaccharides and poly saccharides	P1	
	14	Tuesday	18/04/2023	Classification of amino acids, iso electric point and zwitter ion	P7	
	15	wednesday	19/04/2023	chemical reactions of amino acids and synthesis	P1	
	16	Thursday	20/04/2023	Organic compound analysis-2	P1,P2	
UNIT-03(1.AMINO ACIDS AND	17	Friday	21/04/2023	nomenclature and structure of peptides, nomenclature of proteins	P1	
PROTEINS,2.HET - EROCYCLIC	18	Tuesday	25/04/2023	structure of proteins	P1	
COMPOUNDS)	19	wednesday	26/04/2023	Structure and aromaticity of pyrrole	P1	
	20	Thursday	27/04/2023	Organic compound analysis-3	P1,P2	
	21	Friday	28/04/2023	structure and aromaticity of furan and thipohene, synthesis of five membered ring compounds, paul knorr synthesis	P5	
	22	Saturday	29/04/2023	chemical properties(electrophilic substitution reactions) of pyrrole, furan and thiophene	P1	

	23	Tuesday	02-05-2023	synthesis and aromaticity of pyridine	P1	
	24	wednesday	03-05-2023	acidic nature of pyrrole,basic nature of pyridine,diels alder reaction in furan	P1	
	25	Thursday	04-05-2023	Organic compound analysis-4	P1,P2	
	26	Friday	05-05-2023	slip test on carbohydrates	P1	
	27	Saturday	06-05-2023	Nucleophilic substitution reactions of pyridine, Definition and introduction to nitrogen compounds	P1	
	28	Tuesday	09-05-2023	synthesis of nitro hydro carbons,tautomerism,chemical reacions of nitro hydrocarbons	P1	
	29	wednesday	10-05-2023	Nef reaction,mannich reaction and michael addition,reduction	P1	
	30	Thursday	01-06-2023	correction of observation	P1,P2	
	31	Friday	02-06-2023	introduction to amines,pyramidal inversion and its structure	P1	
	32	Saturday	03-06-2023	synthesis of aliphatic and aromatic amines	P1	
UNIT-04(NITRO HYDRO	33	Tuesday	06-06-2023	chemical properties of aliphatic amines	P1	
CARBONS,AMIN ES AND	34	wednesday	07-06-2023	chemical properties of aromatic amines	P1	
DIAZONIUM SALTS)	35	Thursday	08-06-2023	Organic compound analysis-5	P1,P2	
	36	Friday	09-06-2023	reaction with nitrous acid,hoffmann hypo bromamide reaction,hoffmann elimination,cope elimination	P1	
	37	Tuesday	13/06/2023	seperation of primary,secondary and tertiary amines,introduction to diazonium salts,synthesis of diazonium salts	P1	
	38	wednesday	14/06/2023	introduction to diazonium salts, synthesis of diazonium salts, Azodye reaction	P1	

	39	Thursday	15/06/2023	correction of observation and repetetions	P1,P2	
-	40	Friday	16/06/2023	synthetic applications of diazonium salts	P1	
	41	Saturday	17/06/2023	introduction to photochemistry, laws of absorption	P1	
	42	Tuesday	20/06/2023	laws of photochemistry(1.grothus drappers law,2.stark einsteins law)	P8	
	43	Wednesday	21/06/2023	quantum yield and its experimental determination,HBr,HCl formation	P3	
	44	Friday	23/06/2023	quantum yield and its experimental determination, chemiluminiscence and luminisecence	P1	
	45	Saturday	24/06/2023	Jablonski diagram, Photosenisitisation reactions	P1	
	46	Tuesday	27/06/2023	introduction to thermodynamics, first law of thermodynamics	P1	
UNIT- 05(1.PHOTOCHE	47	wednesday	28/06/2023	definition of internal energy and enthalpy, heat capacities and their relation ships	P1	-
MISTRY,2.THER MODYNAMICS)	48	Friday	30/06/2023	joule thomson effect	P1	
(MODITAL MICES)	49	Saturday	01-07-2023	carnots cycle and its efficiency	P10	
	50	Tuesday	04-07-2023	calculation of work done in adiabatic and isothermal conditions	P1	
	51	wednesday	05-06-2023	temperature dependence of enthalpy of formation	P1	
	52	Thursday	06-07-2023	organic compound analysis-repetetions	P1,P2	
	53	Friday	07-07-2023	kirchoffs equation	P1	
	54	Tuesday	11-07-2023	second law of thermodynamics	P3	

55	wednesday	12-07-2023	carnor cycle and its efficiency	P1	-
56	Thursday	13/07/2023	repetetions	P1,P2	<u> </u>
57	Friday	14/07/2023	concept of entropy	P1	
58	saturday	15/07/2023	entropy chenge in reversible and equlibrium processes	P1	
59	Tuesday	18/07/2023	third law of thermodynamics	P1	
60	Wednesday	19/07/2023	nernest heat thereom	P1	
61	Thursday	20/07/2023	record correction and certification		
62	Friday	21/07/2023	spontaneous and non spontaneous processes	P1,P2	
63	saturday	22/07/2023	helmholtz and gibbs free energy equation	P1	
64	Wednes day	19-07-2023	structure and aromaticity of furan	P1	
65	Thursday	20-07-2023	amino acids,proteins and thermodynamics	P7	
66	Friday	21-07-2023	laws of photochemistry(1.grothus drappers law,2.stark einsteins law)	P8	
67	Saturday	22-07-2023	constitution of glucose	P6	

P. Ramya Loighra Signature of the Lecturer

P1- Lecture
P2- Demonstration(Lab)
P3- Audio and video
P4- Assignments
P5- Seminar

Signature of the Lecturer in charge

P6- Debate P7-Quiz P8- Group discussion P9- JAM P10-PPT Signature of the Principal

			SIR C R I	REDDY COLLEGE FOR WOMEN, ELURU		
	_		Annual Cu	rricular Plan for the Academic Year 2022 - 2023		
Name of the Lecturer	B TU	LASI KOT	ESWARI BA			
Name of the Department:	+	MISTRY				
Program	BSc					
Title of the Course:	Inorg	anic& Phys	sical Chemistr	y -course-IVB	Group:	MCCs
Year	II	, and a sign of the sign of th	The state of the s		Hrs allotted:	60+30
Section	ī		Semester	IV	Course Code:	21-BS424
	1				Hours/Week	4+2
Unit No. & Name	Hour	Day	Date	Topic to be Covered	Methodology Adopted	Remarks
	1	Thursday	23-03-2023	IUPAC Nomenclature of Co-ordination compounds	P1	
	2	Friday	24-03-2023	Structural isomerism inCo-ordination compounds	P1	
	3	Saturday	25-03-2023	Stereo isomerism inCo-ordination compounds-4, 6		
	4	Monday	27-03-2023	Procedure for Conductometric titration of HCl with NaOH (Lab)	P4 P1, P2	
	5	wednesday	29-03-2023	VBT	P3	
	6	Friday	31-03-2023	Inner & Outer orbital complexes, Limitations of VBT	P1	
	7	Saturday	01-04-2023	Crystal fiel deffect. Octahedral symmetry. CFSE,Crystal fieldeffects for weak and strong fields,	P10	
Unit-I: Co-ordination Chemistry	8	Monday	03-04-2023	Preparation of solutions forConductometric titration of HCl with NaOH (Lab)	P1,P2	
	9	Thursday	06-04-2023	Tetrahedral symmetry, Square planar co-ordination		
	10	Saturday	08-04-2023	Factors affecting the magnitude of CFSE	P5	
η.	11	Monday	10-04-2023	Detemination of concentration of HCI using Standard NaOH conductometrically(Lab)	P1 P1,P2	
	12	wednesday	12-04-2023	Spectrochemical series	P1	
	13	Thursday	13-04-2023	Comparision of CFSE for Octahedral and Tetrahedral complexes	P6	
	14	Saturday	15-04-2023	Tetragonal distortion of octahedral geometry, Jahn-Teller distortion	P3	

15 Monday 17-04-2023 Procedure for Conductometric titration of CH3COOH with NaOH (Lab) P1,P2 Introduction to inorganic reaction mechanisms. Concept of reaction path Wednesday 16 19-04-2023 ways,transition state,Intermediate and activated complex . Labile and P1 Inert complexes Thursday 17 20-04-2023 Ligand substitution reactions-SN1 and SN2 reactions P1 --18 Friday 21-04-2023 Substitution reactions in square planar complexes --P3 Preparation of solutions for Conductometric titration of CH3COOH with 19 Monday 24-04-2023 P1,P2 NaOH (Lab) Trans-effect, theories of trans effect and its applications 20 26-04-2023 wednesday Р3 21 Thursday 27-04-2023 Thermodynamic stability and Kinetic stability P10 22 Friday 28-04-2023 Factors affecting the stability of metal complexes P1 Unit: II; 1, Inorganic 23 Saturday 29-04-2023 Chelate effect reaction P1 mechanism,2.Stability Detemination of concentration of CH3COOH using Standard NaOH 24 Monday 01-05-2023 P1,P2 of metal conductometrically(Lab) complexes, 3. Bio-Determination of composition of complex by Job's method and Moleinorganic chemistry 25 wednesday 03-05-2023 ratio method P1 Metal ios present in biological systems, classification of elements 26 Thursday 04-05-2023 according to their action in biological system P1 Geochemical effect on the distribution of metals, Sodium/K-pump, 27 Friday 05-05-2023 P1 carbonic anhydrase and carboxy peptidase 28 Saturday 06-05-2023 Excess and deficiency of some trace metals P8 Procedure for Conductometric titration of CH3COOH and HCI mixture 29 Monday 08-05-2023 P1,P2 with NaOH (Lab) Toxicity of metal ions (Hg, Pb, Cd and As), Reasonds for toxicity, use of 30 wednesday 10-05-2023 P1 chelating agents in medicine, Cis Platin as anti-Cancer drug 31 Thursday 01-06-2023 Iron and its applications in bio-systems, Haemoglobin P3 32 Friday 02-06-2023 Myoglobin. Storage and transfer of Iron P1

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	33	Saturday	03-06-2023	Concept of phase, components, degrees of freedom	P1	
	34	Monday	05-06-2023	Preparation of solutions forConductometric titration of CH3COOH and HCl with NaOH (Lab)	P1,P2	
	35	wednesday	07-06-2023	Thermodynamic relation of Gibbs Phase rule	P1	
	36	Thursday	08-06-2023	Phase diagram of one component system-water system	P3	
Unit:III;Phase rule	37	Friday	09-06-2023	Study of phase diagram of simple eutectic systems i) Pb-Ag system, desilverisation of lead, Congruent melting point	P1	
	38	Monday	12-06-2023	Determination of concentration of CH3COOH and HCl in a mixture using Standard NaOH conductometrically(Lab)	P1,P2	
	39	wednesday	14-06-2023	ii) NaCl-water system with incongruent melting point	P3	
	40	Thursday	15-06-2023	Definition and examples for systems having congruent and incongruent melting point, freezing mixtures.	P4	
	41	Friday	16-06-2023	Specific conductance, equivalent conductance and molar conductance	P1	
	42	Saturday	17-06-2023	Definition and effect of dilution. Cell constant.Strong and weak electrolytes	P1	
	43	Monday	19-06-2023	Procedure for Potentiometric titration, preparation of solution of Potassium dichromate(Lab)	P1,P2	
	44	wednesday	21-06-2023	Kohlrausch's law and its applications.	P1	
	45	Thursday	22-06-2023	Definition of Transport number, determination of Transport number by Hittorf method	P3	
	46	Friday	23-06-2023	Debye-Huckel-Onsagar equation for strong electrolytes	P1	
Unit- IV:Electrochemistry	47	Saturday	24-06-2023	Application of conductivity measurements-conductometric titrations	P1	
1 v . Electi delicinisti y	48	Monday	26-06-2023	Determination of Fe(II) using standard Potassium dichromate potentiometrically(Lab)	P1,P2	
	49	wednesday	28-06-2023	Electrochemical cells-single electrode potential.	P1	
	50	Friday	30-06-2023	Types of electrodes with examples: Metal-metal ion, Gas electrode, Inert electrode, Redox electrode, Mwtal-metal insoluble salt-salt anion	P3	
	51	Saturday	01-07-1023	Determination of Emf of a cell	P1	
	52	Monday	03-07-2023	Nernst equation. Applications of Emf measurements	P1	
	53	wednesday	05-07-2023	Potentiometric Titrations	P1	
	54	Thursday	06-07-2023	Fuelcells-Basic concepts, examples and applications.	P3	

	55	Friday	07-07-2023	The concept of reaction rates. Effect of temperature, pressure, catalyst and other factots on reaction rates	P5	
	56	Monday	10-07-2023	Order and Molecularity of a reaction. Derivation of integrated rate equations for zero order reactions, Half life of a reaction	P6,P1	
	57	Tuesday	11-07-2023	rate equations for first and second order reactions(both for equal and unequal concentrations of reactants)., Half life of a reaction	P1	
	58	wednesday	12-07-2023	General methods for the determination of order of a reaction	P1	
	59	Thursday	13-07-2023	concept of activation energy and its calculation from Arrhenius equation	P3	
Unit-V:Chemical Kinetics	60	Friday	14-07-2023	Theories of reaction rates: collision theory and activated complex theory of bimolecular reactions. Comparision of two theories(qualitative treatment only)	P1,P6	
	61	Saturday	15-07-2023	Enzyme catalysis-Specificity, factors affecting enzyme catalysis, Inhibitors and Lock & key model	P3	
	62	Monday	17-07-2023	Michaels-Menten equation-derivation	P1	
	63	Tuesday	18-07-2023	Significance of Michaels-Menten constant		
St.	64	wednesday	19-07-2023	Job's Method	P1 P5	
	65	Thursday	20-07-2023	Co-ordination chemistry	P7	
	66	Friday	21-07-2023	Specific conductance, equivalent conductance and molar conductance	P8	
	67	Saturday	22-06-2023	Order and Molecularity of a reaction.	P6	

Signature of the Lecturer

Signature of the HOD

P1 - Lecture

P2- Demonistration

P3- Audio& Video

P4- Assighments

P5-Seminars

P6- Debate

P7- Quiz P8-Group Discussion

P9-JAM

P10-PPT

			SIR C	R REDDY COLLEGE FOR WOMEN, ELURU		
				al Curricular Plan for the Academic Year 2022 - 2023		
Name of the Lecturer :	B TU	LASI KOTE				
Name of the Department:	СНЕ	MISTRY				
Program	BSc I	MCCs	Group:	MCCs		
Title of the Course:	ORG	ANIC AND	GENERAL (CHEMISTRY	Hrs allotted:	60+30
Year	I		Semester	П	Course Code:	21-BS224
Section	MCC	S			Hours/Week	5+2
Unit No. & Name	Hour	Day	Date	Topic to be Covered	Methodolgy Adopted	Remarks
	1	Saturday	29-04-2023	General methods of preparation of alkanes-Wurtz and Wurtz-Fittig reaction, Corey House synthesis	P1	-
	2	Monday	01-05-2023	Physical properties of alkanes	P4	-
	3	Tuesday	02-05-2023	Isomerism and its effect on properties	P1	-
	4	Wednesday	03-05-2023	Chemical properties of alkanes-freeradical substitution reactions	P6	_
	5	Thursday	04-05-2023	Halogenation, concept of relative reactivity v/s selectivity	P1	-
I: Carbon-Carbon	6	Friday	05-05-2023	Demonistration of weighing using analytical balance(Lab)	P1,P2	-
sigmabonds	7	Saturday	06-05-2023	Conformational analysis of alkanes	P1	-
(Alkanes and Cycloalkanes)	8	Monday	08-05-2023	Conformations, relative stability and energy diagram of Ethane	P3	-
,	9	Tuesday	09-05-2023	Conformations, relative stability and energy diagram of Propane	P8	-
	10	Wednesday	10-05-2023	Conformations, relative stability and energy diagram of butane	P1	-
	11	Thursday	01-06-2023	General molecular formula of cycloalkanes and relative stability,Baeyer's strain theory	P2	-
	12	Friday	02-06-2023	Preparation of standard oxalic acid solution(Lab)	P1,P2	-
	13	Saturday	03-05-2023	Cyclohexane conformations with energy diagram	P1	-
	14	Monday	05-06-2023	confomations of mono substituted cyclo hexane	P4	-

	15	Tuesday	06-06-2023	General methods of preparation of alkenes, Saytzeff elimination	P1	Τ.
	16	Wednesday		physical properties of alkenes	P7	
×	17	Thursday	08-06-2023	Mechanism of E1, E2 reactions	P2	-
	18	Friday	09-06-2023	Standerdisation of permanganate and determination of Iron (II)(Lab)	P1,P2	-
	19	Saturday	10-06-2023	Mechanism of E1cb reactions and Hofmann elimination	P3	-
Unit - II:Carbon -	20	Monday	12-06-2023	Chemical properties - electrophilic addtions - Markonikoff additon mechanism	P1	-
Carbon pi bonds (Alkenes and	21	Tuesday	13-06-2023	Anti Markonikoff addition mechanism	P10	-
Alkynes)	22	Wednesday	14-06-2023	Addition of H2,X2,syn and anti additon, Oxymercuration - Demercuration	P2	-
	23	Thursday	15-06-2023	Hydroboration - oxidation , ozonolysis, Hydroxilation	P5	_
	24	Friday	16-06-2023	Preparation of standard potassium dichromate solution(Lab)	P1,P2	_
	25	Saturday	17-06-2023	Diel's - Alder reaction, 1,2- 1,4 - additon reaction in conjugated diene's	P4	-
	26	Monday	19-06-2023	Preparationm of alkynes, Reactions of alkynes; Acidity	- P5	-
	27	Tuesday	20-06-2023	Electrophilic and nucleophilic additions in alkynes	P1	_
	28	Wednesday	21-06-2023	Hydration to form carbonyl compounds, Alkylation of terminal alkynes	P9	-
	29			Concept of aromaticity, Huckel's rule	P1	-
	30	Friday	23-06-2023	Standerdisation of hypo and determination of copper(II) (Lab)	P1,P2	-
	31	Saturday	24-06-2023	Huckel's rule appicable to benzenoid compounds(Benzene , Napthalene)	P4	-
Unit - III ; Benzene and its	32	Monday	26-06-2023	Huckel's rule appicable to non- benzenoid compounds (Cyclopropenyl cation)	P2	-
reactivity	33	Tuesday	27-06-2023	Huckel's rule applicartion to non benzenoid compounds (Cyclopentadinenyl anion and tropylium cation)	P6	-
	34	Wednesday	28-06-2023	Reactions - General mechanism of electrophilic aromatic substitution, Mechanism of nitration	P5	-
	35	Friday	30-06-2023	Estimation of sodium carbonate and sodium hydrogn carbonate present in the mixture	P1	-

1	3	6 Saturda	y 01-07-202	23 Freidal - Crafts alkylation and acylation	P1	
	3'	7 Monday		Orienatation of aromatic substitution - ortho, para and meta directing groups	P9	-
	38	3 Tuesday	04-07-202	Ring activating and deactivating groups with groups		-
	39	Wednesda	ay 05-07-202	3 Electronic interpretation of various groups like NO2 and phnolic	P4	-
	40	Thursday	06-07-202	3 Orientation of i) Amino, methoxy and methyl groups	P1	-
	41	Friday	1	3 Estimation of water of crystallization in Mohr's salt by titrating with KMnO4	P10 P1	-
	42	Monday	10-07-202	Orientation of ii) Carboxy, nitro, nitrile, carbonyl groupsc	P2	
P	43	Tuesday	11-07-202	Orientation of Sulphonic acid group, iii) Halogens.		-
	44	Wednesda		Colloids- Coagulation of colloids-Hardy-Schulze rule.	P8	-
	45	Thursday	13-07-2023	Stability of colloids, Protection of colloids, Gold number	P4	-
	46	Friday	!4-07-2023	Adsorption-Physical and Chemical adsorption.	P1	-
	47	Saturday	15-07-2023	Langmuir adsorption isotherm	P5 P6	-
	48	Monday		Applications of adsorption.		-
Unit-IV: 1.Surface	49	Tuesday	18-07-2023	Hybridisation	P1	
Chemistry,2	50	Wednesday	19-07-2023	Valence bond theory, VB theory as applied to CIF3, Ni(CO)4		
Chemical	51	Thursday			P1	-
Bonding, 3.HSAB				Wildlettial theory-LCAO method	P5	_
	52	Friday	21-07-2023	Consruction of M.O. diagrams for homo-nuclear diatomic molecules(N2) molecule	P6	-
	53	Saturday	22-07-2023	Consruction of M.O. diagrams for homo-nuclear diatomic molecules(O2) molecule	P1	-
	54	Monday	24-07-2023	Construction of M.O. diagrams for hetero-nuclear diatomic molecules (CO and NO)	P7	
	55	Tuesday	25-07-2023	Pearson's concept, HSAB principle	P9	-
	56	Wednesday	26-07-2023	Importance of HSAB principle, bonding in Hard-Hard and Soft-Soft combinations	P10	-

Unit-V: Stereochemistry of carbon compounds	57	Thursday	27-07-2023	Molecular representations-Wedge, Fischer formulae,Newmann and Saw-Horse formulae	P2	-
	58	Friday	28-07-2023	Optical isomerism: Optical activity- wave nature of light, plane polarized light Optical rotation and Specific rotation	P4	-
	59	Friday	28-07-2023	Chiral molecules-definition and criteria(Symmetry elements)Definition of enantiomers and diastereomers-Explanatin of optical isomerism with examples-Glyceraldehyde, Lactic acid,Alanine	P6	-
	60	Saturday	29-07-2023	Optical isomerism with examples -Tartaric acid, 2,3-dibromopentane D,L and E,Z configurations with examples	P1	-
	61	Monday	31-07-2023	R,S configurations with examples Definition of Recemic mixture-Resolution of Racemic mixtures(any 3 techniques)	P6	-

Signature of the Lecturer

Signature of the HOD

Signature of the Principal

P1- Lecture P2- Demonstration(Lab) P3- Audio and Video P4- Assignments P5- Seminar

P6- Debate

P7- Quiz

P8 - Group Discussion P9- JAM P10- PPT