DEPARTMENT OF ACCOUNTANCY ACADEMIC PLAN 2022-2023
ODD SEMESTER

Week		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Name	Sem/ paper	"14/06/2022-19/06/2022"	20/06/2022-25/06/2022	27/06/2022-2/07/2022	4/7/2022-09/7/2022	11/7/2022-16/07/2022	18/07/2022-23/07/2022	25/07/2022-30/07/2022	1/8/2022-6/8/2022	8/08/2022-13/08/2022	17/08/2022-23/08/2022	24/08/2022-30/08/2022	05/09/2022-10/9/2022	12/9/2022-17/9/2022	09/09/2022-24/09/2022	26/09/2022-30/09/2022
Ms. Madhavi Kate	V	Inorganic Practical - Bridge Course	Est of Zn	Est of Zn	Est of Cu	Est of Cu	Est of Ni	Est of Ni	Synthesis & Characterization Ni Complex	Synthesis & Characterization Ni Complex	Synthesis & Characterization Co Complex	Synthesis & Characterization Co Complex	Synthesis & Characterization Fe Complex	Synthesis & Characterization Fe Complex		
Dr.Bright Phillip	SEM 3 Paper3 Mod1	Mechanism of organic reactions Types of different intermediates,examples	Carbocations: Different types of carbocations SN1 reaction	Electrophilic addition across an olefinic double bond	Elimination reaction ,Wagner-Meerwein rearrangement	CarbanionsConcept of carbon acid,properties and reactions	Reactions of Grignard reagents, Aldol reaction	Carbon radicals properties preparation and reactions	Carbenes Generation of carbenes,Structure , stability and reactions.Keto-enol tautomerism	Aromatic Electrophilic Substitution Reaction Huckel's Rule of aromaticity	Types of different compounds like aromatic, anti-aromatic non - aromatic compounds	General mechanim of aromatic electrophilic substitutin reaction	Activated and deactivated aromatic rings.Effect of electron donating and electron	Revision class Test		
	SEM 5 Paper3 Mod 2	Criteria for ideal organic synthesis	Synthesis of furans, pyrroles, and thiophenes	Retro synthesis, Disconnection, Synthon, SE,FGI, TM.,Defenitions	Examples Acetophenone , t-butyl alcohol , Crotonaldehyde, Cyclohexene	Cyclohexene-3-one, Benzoin, Cyclopentyl methanal ,Benzyl benzoate	Carbohydrates Introduction: Classification, Sources	Structures of monosaccharides Fischer projection Haworth formula Furanose and pyranose forms	Interconversion of glucose and fructose	Anomers and epimers, examples	Chain lengthening and shortening reaction	Reactions of D-glucose and D-fructose	Applications of carbohydrates.	Revision class Test		
	SEM 5 Prac Org	Instructions	Instructions	Demonstration	Org Mix 1	Org Mix 2	Org Mix 3	Org Mix 4	Org Mix 5	Org Mix 6	Org Mix 7	Org Mix 8	Revision	Revision		
	SEM 5 Prac Res Methodolgy	Instructions	Instructions	Research Paper presentation			Review Article presentation			Patent Presentation			Research Proposal			
Dr, Chitra Kamath	SEM 3 Pap III Mod II	asymmetric carbon atom, enantiomers, stereogenic centre, configuration	stereoisomerism (Geometrical & optical).	Representation of configuration by flying wedge formula & projection formula-Fischer,	Cahn-Ingold-Prelog (CIP) Rules of assigning absolute configuration (R and S) to stereogenic centres	Assigning absolute configuration to molecules having maximum two chiral carbon atoms.	enantiomers, diastereomers and racemic mixture and their properties	threo, erythro and meso isomers	Resolution of enantiomers: chemical and chromatographic	Diastereomers (geometrical isomerism) due to restricted rotation around carbon-carbon double bond	E and Z stereodescriptors to geometrical isomers	Diastereomers of disubstituted cyclopropanes	Diastereomers of disubstituted cyclobutanes	Revision		
	SEM 5 Pap III Mod I	addition of HX to butadiene; sulfonation of naphthalene.	Nucleophilicity / electrophilicity Vs Basicity / acidity.	Reaction of aldehydes and ketones with primary amines.	Acid catalysed esterification of carboxylic acids	base promoted hydrolysis of esters.	Pinacol, Benzilic acid.	Beckmann, Hofmann.	Bicyclic compounds- spiro, fused, and bridged (upto 11carbon atoms)-saturated	Biphenyls.	Cummulenes upto 3 double bonds, Monocyclic (5 and 6 membered) aromatic and	IUPAC of Heterocyclic compounds	IUPAC of Heterocyclic compounds Contd	Revision		
	SEM 5 DSE2 M 1	Motivation in Research,	Types of Research,	Significance of research	Research Approaches	Research Methods versus Methodology,	Research and Scientific Method Research Design	Importance of Knowing How Research is Done,	Research Process,	Criteria of Good Research	Ethical Issues: Plagiarism	Restriction to Plagiarism,	concept of patents and trademarks	Revision		
	SEM 5 Prac Org	Instructions	Instructions	Demonstration	Org Mix 1	Org Mix 2	Org Mix 3	Org Mix 4	Org Mix 5	Org Mix 6	Org Mix 7	Org Mix 8	Revision	Revision		
Dr, Sugandha Shetye	III/I Module 1	Introduction Photophysical phenomena-Jablonskii diagramto	Laws of Photochemistry	Photon and Einstein - Numericals	Quantum Yield - Numericals	Mechanism of photochemical reactions	types of photosensitization, Chemiluminescence and Bioluminescence reactions	Photochemical Smog	Solar Cells	Introduction to UV Visible Spectroscopy	Beer Lamberts Law - Derivations,Limitations of the law	Numericals on Beer lamerts law	Introduction to Spectrophotometer and colourimetric method	Revision of Photochemistry /UV-Visible Spectroscopy numerical problems		
	V/I/Module 3	Nuclear radiations - Properties	Detectors - Principles of Radioactivity detection,Units of radioactivity	GM COunter	Scintillation counter	Kinetics of radioactiv decay,	Determination Half life , Numericals , C-dating	,Applications of tracers,Nuclear transmutations	Artificial Radioactivity	Q value and threshold energy numericals	Nulear fission ,Numericals	Fissile and fertile materials , Chain reaction examples	Critical mass,Multiplication factor ,	Nuclear reactor - compnents and functions.		
		Introduction to Exact & Inexact Differentials .State functions	Problems on Eulers theorem and conditions for state function	Thermodynamic Relations and Thermodynamic Square	Maxwell Relations and Thermodynamic Square	Discussion on the assignment Deriving Maxwell relations	Coeff of thermal expansion and compressibility,integration factor	Joule Thomson effect- isoenthalpic effect and other relations	Joule Thomson coefficient .inversion temperature	Joule Thomson coefficient .inversion temperature ,numericals	Third law of thermodynamics ,Nernst Heat theorem	Third law of Thermodynamics-Det of third law entropies of Solids,Liquid and gases	Residual Entropy derivation and problems based on it.	Numerical problems on third law entropies	Numerical problems on Joule thomson effect and Nernst theorem	Revision
		Introduction to nanomaterials	Classification of nanomaterials,	Synthesis of nanomaterials	Mechanical milling , Photolithography	Introduction to Wet chemical synthesis of nanomaterials Microemulsion	Microemulsion	Sol Gel Method - different steps Hydrolysis,	Gas Phase Synthesis - Chemical Vapour Deposition (CVD) - CNT	,Flame assisted ultrasonic spray pyrolysis	Synthesis of nanomaterials using plant extracts	Synthesis of nanomaterials using fungi and bacteria etc	catalytic properties of nanomaterials ,	Optical properties of nanomaterials	magnetic properties of nanomaterials	Revision

Dr. Nishamol Kanat	Sem V/P I Module II	Lewis concept of activity, ionic strength of a solution	Debye- Huckel limiting law,Comparison between chemical and concentration cell , Chemical cell without transference	Electrode Concentration cell Without Transference- Reversible to cations, Reversible to anions	Electrolyte Concentration cell Without Transference- Reversible to cations	Electrolyte Concentration cell Without Transference- Reversible to anions	Electrolyte Concentration cell Without Transference- Reversible to cations	Electrolyte Concentration cell With Transference- Reversible to anions, Liquid Junction Potential	Concentration Polarization and its Elimination	Decomposition Potential, Faradaic and Non-Faradaic Processess	Over Voltage, Relationship between decomposition potential and over voltage	Simultaneous deposition of two metals, Corrosion and its Prevention	Batteries and Superconductors			
	Sem III/ P I Module 2	Electronic and electrolytic conductors, conductance, specific conductance, equivalent conductance, molar conductance	Variation of molar conductance with concentration for strong and weak electrolytes. Concept of limiting molar conductance	Debye-Huckel theory of conductance of strong electrolytes. Ionic atmosphere	Ionic atmosphere, relaxation effect, electrophoretic effect	Kohlrausch's law of independent migration of ions, applications of the law – determination of limiting molar conductance of weak electrolytes	Determination of dissociation constant of a weak acid, Numericals	Determination of solubility product of a sparingly soluble salt, Numericals	Migration of ions, Transport Number, Numericals	Dependence of Transport Number on the velocity of an ion	Hittorff's Rule,CASE I : Cations and anions moving with equal speed	Hittorff's Rule,CASE 2 : Cations and anions moving with un equal speed	THE MOVING BOUNDARY METHOD- Determination of Transport Number			
	Sem V Physical Cemistry/Analytical Instrumental Pracicals	Bridge Course	Instructions	Chemical Kinetics	Viscometry	Potentiometry- Determinatioin of reduction potential	pH Metry- Isoelectric Point	Determination of flouride content in toothpaste	Determination of ascorbic acid content in Vitamin C tablet	Determination of flouride content in toothpaste	Determination of ascorbic acid content in Vitamin C tablet	Revision	Revision			
	MSc Part II Physical Chemistry/ P III, Module 1	Molecular energy levels, Boltzmann distribution law	Partition functions and ensembles	Calculation of translational and rotational partition functions	Calculation of vibrational and electronic partition functions	Statistical thermodynamics and second law.	Calculation of thermodynamic functions - internal energy	Calculation of thermodynamic functions - Entropy and Free Energy	Heat capacities of solids- Eienstein's Theory	Equilibrium constants, residual entropy	Principle of equipartition of energy	Maxwell-Boltzmann Statistics	Fermi-Dirac Statistics	Bose-Einstein statistics	Comparison between Maxwell-Boltzmann, Fermi-Dirac and Bose-Einstein statistics.	Revision
	MSc Part II Physical Chemistry/ P III, Module 4	Fluorescence sensing: Mechanism of sensing	Sensing techniques based on collisional quenching	Sensing techniques based on Resonance Eneregy Transfer	Sensing techniques based on PET	pH sensors	Glucose sensors	Protein Sensors	Novel fluorophores: Quantum dots	Novel fluorophores: Lanthanides	Novel fluorophores: Metal Ligand Complexes	Novel fluorophores: Metal Ligand Complexes	Radiative decay engineering	Mechanism of Metal Enhanced Fluorescence	DNA Sequencing	Revision
	MSc Part II Physical Chemistry/ P IV,	Spin-relaxation. Nuclear Overhauser Effect (NOE)	Cross Polarisation	Correlated spectroscopy (COSY)	Heteronuclear correlation Spectroscopy (HETCOR)	Nuclear Overhauser effect Spectroscopy (NOESY)	Solid-state NMR, Magnetic Resonance Imaging (MRI)									
	MSc Part II Physical Chemistry/ P IV,	Angular momentum, orbital and spin, total angular momentum, total	L-S i.e. Russell Saunders coupling and J-J coupling	Term symbols for atoms.	Exchange interactio	Anomalous Zeeman Effect	Paschen Back effect	Atomic spectra and selection rules	Energy level diagram of atomic sodium.							
	MSc Part I Physical Chemistry/ P I, Module 2	Determination of Fugacity- Equation of State	Determination of Fugacity- Graphical Method	Relation between fugacity and pressure	Variation of fugacity with temperature and pressure	Equilibrium constant for real gases in terms of fugacity.	Activity, dependence of activity on pressure.	Dependence of activity on temperature	Gibbs energy of mixing, entropy and enthalpy of mixing	excess thermodynamic functions of chemical potential, Gibb's free energy	excess thermodynamic functions of entropy, enthalpy and volume	Partial molar quantities: calculation of partial molar volume	Partial molar quantities: calculation of partial molar Enthalpy	Gibbs Duhem Margules equation	Numericals	Revision
Dr. Veena Khilnani	Sem III Paper III Module III	Preparation of dye intermediates and dyes	Preparation of perfumes	Preparation of natural products	Preparation of artificial sweeteners	Preparation of drugs, nutraceuticals and flavors	Introduction to Chemical Industry	Basic terms-1	Basic terms -2	Basic terms -3	Manufacturing processes-1 Phenol	Manufacturing processes-2 DDB	Manufacturing processes-3 DDBS			
	aper III M	Introduction to stereochemistry	Elements of symmetry	Cummulenes	Biphenyls	Spiranes	Strains in cycloalkanes	Conformations of cyclohexane	Conformations of monosubstituted cyclohexane	Conformations of di substituted cyclohexane	Conformations of di substituted cyclohexane	Stereoselectivity and stereospecificity	Enantiotopicity and distereotopicity			
	E 1 Drugs	Introduction and instructions	Preparation of acetyl salicylic acid	Preparation of para nitroacetanilide	Preparation of para nitroaniline	Revision	Estimation of ibuprofen	Estimation of tincture iodine	Revision	Pharmacopeia information	Industrial visit- virtual	Viva questions answers	Record Book submission			
	Sem V DSE 2 Research Methodology	Introduction Reading a research paper -	evaluation of review paper	evaluation of review paper	evaluation of review paper	Introduction to IPR	Introduction To patent Search - presentations	evaluation of patent reports	evaluation of patent reports	Writing a Research Proposal instructions	Writing a Research Proposal- individual Group discussion	evaluation of proposals	evaluation of proposals			
nani	Sem Ipaper III Module 2	Syllabus, Bibliography, Enolates- structure and stability	Generation of enolates	Kinetic and thermodynamic products	Reactions of enolates	Aldol reaction	Aldol condensation modifications	Enolates and Aldol Condensation	Claisen, Claisen Schmidt, Dieckmann	Perkin reaction	Knoevengel	Reformatsky	Benzoin , Mannich	Shapiro, Michael, Robinson	Haloform	Revision

Dr. Veena Khil	Sem III Paper III Module 1	Introduction to Syllabus, Bibliography	Synthesis and application of the following drugs: oxyphenbutazone, fluconazole, zidovudine, methotrexate, labetalol, fenofibrate.	Factors affecting bioactivity	physical and chemical parameters affecting bioactivityand drug –receptor binding	Procedures in drug design & Lead modification:	Structure modification to increase potency and therapeutic index:	bioisosterism, combinatorial synthesis (basic idea)	Introduction to Quantitative Structure Activity Relationship studies.	Introduction to Quantitative Structure Activity Relationship studies.	Introduction to Quantitative Structure Activity Relationship studies.	Computers Aided Drug Design	Computers Aided Drug Design	Computers Aided Drug Design	Concept of prodrugs and soft drugs	Concept of prodrugs and soft drugs
Dr. Vanita Kulkarni	Sem III, P I,Module 3	Introduction to Titrimetric Analysis	Titration of SA v/s SB	Titration of SB v/s WA	Titration of WA v/s SB	Titration of WA v/s WB	Equivalence point WA v/s SB	Theory of Indicators	RedoxTitration	Nernst Equationfor Fe -Dichromate titration	Titration of Fe +2 v/s Ce +4	Instrumental methods of Analysis	Potentiometric & conductometric Titrations	Revision		
	Sem V, P I, Module I	Introduction to Chemical Thermodynamics	Gibbs and Helmholtz free energy	Gibbs and Helmholtz equation	Numericals	Partial Molal Properties	Gibbs-Duhem equation	Fugacuty and activity	Variation of chemical potential with T &P	Introduction to Chemical Kinetics	Arhenius equation Nemericals	Collision Theory	Transition State theory	Revision		
	Sem V DSE 2 Research Methodology	Introduction Reading a research paper -	evaluation of review paper	evaluation of review paper	evaluation of review paper	Introduction to IPR	Introduction To patent Search - presentations	evaluation of patent reports	evaluation of patent reports	Writing a Research Proposal instructions	Writing a Research Proposal- individual Group discussion	evaluation of proposals	evaluation of proposals			
	MSc,Sem III,PII Module 3	Nuclear Chemistry Introduction	Nuclear stability	Fissile and Fertile nuclei	Nuclear models	Unified or collective model	Nuclear fission and liquid drop model	Charged particle acceleratos	Cyclotron and synchrocyclotron	Synchrotron and Betatron	Methods used to enrich Uranium	Critical energy and critical mass of nuclear fuel	Applications of radio isotopes	Revision		
Dr. Yogesh Ghalsasi	Sem III Paper II Module 2	Introduction, preview of syllabus,	Basic principles and steps in Gravimetry	Factors affecting precipitation	mechanism of PPTn	Digestion, filteration and wshing	Drying and ignition, impurities in gravi ppt	Precipitation titration	Mohr,s and Volhards methods	Fajans method and Intro to Complexometry	EDTA titrations, Apparent stability constant	types of EDTA titrations	Masking and applications	Revision		
	Sem V, Paper IV module II	Introduction, preview of syllabus, examination pattern	Redox titrations	Redox titrations end point	Redox titrations types	Redox titrations applications	Non aqueous titrations	Non aqueous titrations types	Non aqueous titration application	Introduction to chromatography	Therory of Chromatography	TLC	Paper chromatography	Revision		
	Sem V Paper DSE 1 Module 2	Introduction, preview of syllabus, examination pattern	Types of data collection	Types of data collection	types of data collection	methods of classification of data	methods of statistical treatment of data	Primary methods of data distribution	methods of dispersion	measures of central tendancy	multivariate analysis	multivariate analysis	Revision of statistical methods	revision		
	Sem III, Analytical Paper IV Module	Introduction, preview of syllabus, examination pattern														
	M Sc Sem III, Analytical Paper IV															
Dr.Saurabh Shete	DSE-1 Drugs Sem V	Antibiotics	Antibiotics	Antimalarials	Antimalarials	Antimalarials	Anthelmintics	Anthelmintics	Antiamoebic Drugs	Antitubercular and Antileprotic Drugs	Antitubercular and Antileprotic Drugs	Anti-Neoplastic Drugs	Anti-Neoplastic Drugs	Anti HIV Drugs		
	TYBSC Sem V D.S.E-2 Research Methodo	procedure	Protective apparel	in lab	MSDS	use of hazardous	working with	waste chemicals	and reuse of	laboratory	verification and	chemicals in the	transportation of			
	TYBSc Sem V Paper II Module I	Aromaticity Criteria	[4]-Annulene, [6]-Annulene	[10],[14],[16],[18] Annulene	Frost Muslin diagram	Furan: Synthesis , Reactivity	Furan: Synthesis , Reactivity	Thiophene: Synthesis ,	Thiophene: Synthesis ,	Pyrolle Synthesis , Reactivity	Pyrolle Synthesis , Reactivity	Pyrolle Synthesis , Reactivity				
	MSc Sem III Paper I Module	Stereochemistry of medium size rings	Unsual properties of medium size ring compounds	Stereochemistry of Decalin	Stereochemistry of Hydrindane	Stereochemistry of Steroids	Dynamic stereochemistry and selection of substrate	Effect of substituent on cyclohexane derivatives								
	MSc Sem III Paper I Module 4								Principles of asymmetric synthesis, types of asymmetric synthesis, Chiral pool strategy	Sharpless epoxidation	Diels alder reaction, reduction of prochiral carbonyl compounds	Use of chiral auxiliaries in diastereoselectice reduction	Mechanism of racemisation and methods of resolution	determination of enantiomer and diastereomer composition	Methods based on NMR spectroscopy	Correlative methods for configurational assignment
	FYBSc				Alkane	Alkane Preparation	Alkane preparation	Alkane - reaction -	Alkene-	Alkene preparation	Alkene -	Alkene - reaction	Alkyne -	Alkyne -	Alkyne -	Alkyne -reaction -

Dr. Trupti Tawde	Sem I Paper II Module 2 Div A				Introduction, Sources, applications	by catalytic hydrogenation, Wurtz reaction, Grignard reagent	- Kolbe's synthesis	Halogenation with mechanism	Introduction, sources, applications, Nomenclature	- dehydration of alcohol, dehydrohalogenation of alkyl halide	Preparation Partial catalytic hydrogenation, reaction - cis	addition of HX, Ozonolysis, Hydroboration-oxidation	Introduction, sources, applications, nomenclature	preparation from calcium carbide, conversion of lower alkyne to	Preparation dehalogenation , dehydrohalogenation	addition, ozonolysis, oxidation, benzene preparation
	FYBSc Sem I Paper II Module 2 Div C				Alkane Introduction, Sources, applications	Alkane Preparation by catalytic hydrogenation, Wurtz reaction, Grignard reagent	Alkane preparation - Kolbe's synthesis	Alkane - reaction - Halogenation with mechanism	Alkene- Introduction, sources, applications, Nomenclature	Alkene preparation - dehydration of alcohol, dehydrohalogenation of alkyl halide	Alkene - Preparation Partial catalytic hydrogenation, reaction - cis addition and trans	Alkene - reaction addition of HX, Ozonolysis, Hydroboration-oxidation	Alkyne - Introduction, sources, applications, nomenclature	Alkyne - preparation from calcium carbide, conversion of lower alkyne to higher alkyne	Alkyne - Preparation dehalogenation , dehydrohalogenation	Alkyne -reaction - addition, ozonolysis, oxidation, benzene preparation
	FYBSc Sem I Paper II Module 2 Div D				Alkane Introduction, Sources, applications	Alkane Preparation by catalytic hydrogenation, Wurtz reaction, Grignard reagent	Alkane preparation - Kolbe's synthesis	Alkane - reaction - Halogenation with mechanism	Alkene- Introduction, sources, applications, Nomenclature	Alkene preparation - dehydration of alcohol, dehydrohalogenation of alkyl halide	Alkene - Preparation Partial catalytic hydrogenation, reaction - cis	Alkene - reaction addition of HX, Ozonolysis, Hydroboration-oxidation	Alkyne - Introduction, sources, applications, nomenclature	Alkyne - preparation from calcium carbide, conversion of lower alkyne to	Alkyne - Preparation dehalogenation , dehydrohalogenation	Alkyne -reaction - addition, ozonolysis, oxidation, benzene preparation
	FYBSc Sem I Paper II Module				Alkane Introduction, Sources, applications	Alkane Preparation by catalytic hydrogenation, Wurtz reaction,	Alkane preparation - Kolbe's synthesis	Alkane - reaction - Halogenation with mechanism	Alkene- Introduction, sources, applications,	Alkene preparation - dehydration of alcohol, dehydrohalogenati	Alkene - Preparation Partial catalytic hydrogenation,	Alkene - reaction addition of HX, Ozonolysis, Hydroboration-	Alkyne - Introduction, sources, applications,	Alkyne - preparation from calcium carbide, conversion of	Alkyne - Preparation dehalogenation , dehydrohalogenati	Alkyne -reaction - addition, ozonolysis, oxidation, benzene
	SYBSc Sem III Practical		Bridge course	Bridge course and safety instructions	Organic preparation 1	Organic preparation 1 & 2	Organic preparation 2	Organic preparation 3	Organic preparation 3 & 4	Organic preparation 4	Organic preparation 5	Organic preparation 5 & 6	Organic preparation 6			
Dr. Rohit S Chauhan	Sem I TybSc 6 Unit Paper II Module	Basics of f block	shapes of f-orbitals	Position of f-block elements in the periodic table	Electronic configuration of 4f and 5f block	Comparison between lanthanides, actinides and	ontraction and Oxi	Maganetic Property and Color of Spectra	Complex formation (Types and Stereochemistry of Complexes)	Complex formation (Types and Stereochemistry of Complexes)	Occurence and seperation of Lanthanoid	Ion and Solvent extraction method	Solvent extraction and Applications of Lanthanoids			
	M.Sc. Sem III Paper II	Basics of MOT of Corelation diagrams	Transformation Calculations of microstate /Terms	Sigma and Pi MOT Trial error method	Sigma and Pi MOT Direct Product	Sigma and Pi MOT Descending method of symmetry	Sigma and Pi MOT Hund's Rule	Sigama MOT for Corelation diagram for d2 Octhedral	Pi MOT for AB6 Corelation diagram for d2 tetrahedral	MOT for Inorganic Hole Formalism	MOT for Inroganic Electronic structures of Free atom	MOT for Ferrocene Electronic structures of Free ions	MOT for dibenzene Splitting levels and Terms	MOT for B6H6 Construnction of Energy level Diagram	Symmetry of Normal Vibrations	Selection Rule and Interpreation of IR and Raman
Dr. Aniket pawnoji	Semester V Paper II Module II	Molecular Orbital	orbitals in	splitting energy	the magnitude of	CFSE for	field splitting on (i)	evidence for co-	Demerits of CFT .	octahedral	bonding on ligand	configuration and	or Russell -	stats for transition		
	Semester V Paper II Module II	Basics of Molecular Orbital	Molecular orbital theory to BeH2	Molecular orbital theory to H2O	Walsh correlation diagram to AH2	Molecular orbital diagram to CO2	Molecular orbital diagram to H3+	Walsh correlation diagram to CO2	MOT application to Metals,	MOT to p type and n type	Introduction to Molecular	Centre of symmetry, Proper	Mirror plan symmetry and	Point groups determination to		
	Semester	definition, position	Physical properties	state, Colour and	and applications	Basic concepts	coordination	Types of Ligands	Chelating ligands	coordination	Isomerism	Stereo isomerism	Optical isomerism	coordination		
	Semester III, Paper II Practicals			Analysis - 1	Analysis - 1	Analysis - 2	Analysis - 3	Analysis - 4		Analysis - 5	Analysis - 6	Preparation - 1	Preparation - 2	Submission and		
	M.Sc. II, Semester III Paper I Module I	General principles	factors influencing r	Reactivity of solids.	tetrahedral structure (Silicates)		rotation of ReO3 resul	tetrahedral structures	octahedral structure	pyrochlores, octahedr	Formation of Substitu	Mechanistic Approach	Study of Solid solution	Density Measurement		
	M.Sc. II Semester III Paper I Module III	Theory of magnetism,	Curie and Curie-Weiss	(i) Metals and Alloys	(i i i) Spinels; (iv) Ilme	Color Centres and Bire	Luminescent and Phos	Coordinate Model	Phosphor Model; Anti	Introduction, Heat Cap	Thermal Expansion of	Conductivity: Solid Ele	Other Electrical Prope	Hall Effect; Dielectric,		
	Semester	AB [Nickel arsenide (N	PbO	CuO	AB2 type [β-cristobalite		CaC2 and Cs2O	fluorite (CaF2) and ant	rutile (TiO2) structure	AB3 (ReO3, Li3N),	A2B3 type (Cr2O3 and	ABO3 relation betwee	oxide bronzes, ilmenit	AB2O4 type, normal, inverse, and random spinel structures.		
	MSc 2 Sem 3 Paper 4 Module 2	Introduction Preparation, properties and uses of industrially important	Potassium permanganate preparation, properties and uses	sodium thisulphate preparation, properties and uses	bleaching powder preparation, properties and uses	hydrogen peroxide preparation, properties and uses	Potassium dichromate preparation, properties and uses									
	FYBSc Sem I Paper II Module 1 Div B, D and E						Basics of organic chemistry and rules of IUPAC Nomenclature	Nomenclature of alkane, alkene, alkyne, alcohol	Nomenclature of ether, aldehyde, ketone and caroxylic acid and derivative	Nomenclature of amide, nitro compounds, nitriles, amines	Nomenclature of bifunctional aliphatic compounds	Nomenclature of substituted benzene compounds. cleavage of bond: Homolysis and heterolysis	Reactive intermediate: Carbocation, carbanion and free radical	Structure, shape and r	Inductive effect and electromeric effect	Resonance effect and hyperconjugation

Dr. Nanabhau Karanjule	**SYBSc Sem III Practical**		**Bridge course**	**Bridge course and safety instructions**	**Organic preparation 1**	**Organic preparation 1 & 2**	**Organic preparation 2**	**Organic preparation 3**	**Organic preparation 3 & 4**	**Organic preparation 4**	**Organic preparation 5**	**Organic preparation 5 & 6**	**Organic preparation 6**			
	FYBSc Sem I Practical											OS-1	OS-2	OS-3 and 4	V-1 and V-2	V-3 and V-4
	MSC Sem III Organic paper II Module IV	Concept of umpolung , generation of acyl anion equivalent using 1, 3- dithianes	methyl thiomethy lsulfoxides, cyanide ions	nitro compounds	Protection and deprotection of hydroxyl	Protection and deprotection of carbonyl	Protection and deprotection of amino	Protection and deprotection of caroxyl	Terminology in retrosynthesis.	Order of events in synthesis by retrosynthetic approach with examples.	o one group C-C and C-X disconnections. One group C?C disconnections, alcohols and	One group C-X disconnections, carbonyl compounds, alcohols, ethers and sulphides	Introduction to two group C-C and C-X disconnections, two group C-X disconnections	1, 1-difunctionalised, 1, 2-difunctionalised and 1, 3-difunctionalised compounds.	Two groups C-C disconnections; Diels? Alder reaction, 1, 3-difunctrionalised compounds, 1, 5-	Control in carbony l condensations.
	MSC Sem III Organic paper IV Module II	NMR spectroscopy: Introduction	Relaxation phenomenon and relaxation time	First order, second	Methods of simplif	Spin system notati	Coupling in aromat	19F- NMR and31P-	Application in stru	Mass spectrometry	Determination of r	fragmentation patt	fragmentation patt	fragmentation patt	McLafferty rearran	Retro-Diels-Alder reaction, ortho effect
	MSC Sem III Organic paper IV Module III	3C –NMR spectros	13C- chemical shift	, calculation of C- c	DEPT technique	Two-dimensional N	COSY and HETCOR	COSY and HETCOR	COSY and HETCOR	Problems based on	Problems based on	Problems based on	Problems based on	Problems based on	Problems based on	ESR spectroscopy:	ESR spectroscopy: applications.
Dr.Dilip Yadav	1								and covalent	Born Haber Cycle	theory	theory	and its	and its	VSEPR	VSEPR
	Practic	SYBSC Div B	qualitative	qualitative	qualitative	qualitative	qualitative	qualitative	qualitative							
		SYBSC Div C	qualitative	qualitative	qualitative	qualitative	qualitative	qualitative	qualitative							
	Sem 3	Hyphenated	GC-MS	GC-IR	MS-MS	LC-MS	LC-NMR	LC-NMR	Automated	Automated	Automated					
	Sem 3 MSc	Food quality	Sensory evaluation of food	Naturally occuring toxins	Microbial Toxins	Food Adulteration	Food Adulteration	Contaminants arising from	Food laws	Food laws	Measurement of color and texture					
Dr. Dr. Afsar Ali Siddiki		Introduction to food chemistry	Carbohydrate chemistry	Water activity in food chemistry	Lipids chemistry	Protein chemsitry	Food additives	Food preservation by temperature	Food preservation by chemical means	food preservation by radiation and	food preservation by fermentaion	Food packaging by plastic	food packaging by metal	Food packaging by paper and glass	food packaging by newer methods	Food processing: Benefits and
	M.SC. II/ANA CHEM SEM III (P-I)	Various processes/operations related to extraction: Solvent extraction method	Various processes/operations related to extraction: Steam distillation method, Distillation method,	Dry ash method, Wet digestion method	Ammonium sulphate method, Stas-otto method	Preservation and packaging of viscera samples (Blood/Urine/Stomach wash)	Poisons, classification and types of poisons	route of administration, Post-mortem finding,	Antidotes and its types	Organic poisons and its analysis: Acetaldehyde, methanol, ethanol,	Organic poisons and its analysis: ethanol, chloroform.	Organic poisons and its analysis: chloral hydrate, phenols,	Inorganic poisons and its analysis: Selenium, Chlorine, Bromine and phosphate.	Inorganic poisons and its analysis: Lead, Arsenic, Mercury,		
	II/ANA CHEM SEM III	Raman: Theory	Raman: Theory	Raman: instrumentation	Raman: instrumentation	Raman: Application	Mossbasuer: Theory	Mossbasuer: Theory	Mossbasuer: instrumentation	Mossbasuer: instrumentation	Mossbasuer: Application	ESR: Theory	ESR: Theory	ESR: Instrumentation	ESR: Instrumentation	ESR: Application
	M.SC. II/ANA CHEM SEM III	Bioavailability - introduction and objective	Bioavailability - single dose Vs multiple dose	Bioavailability - thermokinetics methods	Bioavailability - thermodynamics methods	bioequivalence study - Introdctuion	bioequivalence study - method to enhance 01	bioequivalence study - method to enhance 01								
	M.SC. I/ANA CHEM SEM I (P-II	IR Spectroscopy: Introduction, basic principle 01	IR Spectroscopy: Introduction, basic principle 02	IR: Instrumentation, - sources	IR: Instrumentation, - Monochromator	IR: Instrumentation, - Detectors	IR: Application 01	IR: Application 02	UV-VIS Spectroscopy: Introduction, basic principle 01	UV-VIS Spectroscopy: Introduction, basic principle 02	UV-VS Spectroscopy: Instrumentation 01	UV-VS Spectroscopy: Instrumentation 02	UV-VS Spectroscopy: Instrumentation 03	UV-VS Spectroscopy: Aplication		
	FYBSc/SE	Chemical Analysis:	classification based	Qualitative analysis:	concept of common	Quantitative	Volumetric Analysis:	Volumetric basic	Concept of	Gravimetric	Gravimetric	Chemical	molarity	normality	ppm	
un Mondal	III Paper I Module	Introduction	Jablonski diagramm	Photoreduction	Paterno buchi reaction	Norrish 1 and 2 reaction	Fries Rearrangement	Barton reaction	Di Pi Methane reaction	Photochemistry of Aromatic compound	Ene Reaction	Norrish 1 and 2 reaction	Q paper solving			
	MSc Sem III Paper II Module 2	Introduction	Hanzach widmann Nomenclature	BICyclo Cpmpound	Spiro Compound	Fused Nomenclature	Preperation of Imidazole, Pyrazole	Preperation of Thazole, Oxazole	Preperation of Quinoline, Isoquinoline,	Preperation of pyridazines, pyrimidines,	Preperation of pyrazines, purines,	n of coumarins, benzi	Preperation of benzoxazoles, benzothiazoles.	Q paper solving		
	MSc Sem	Introduction	Organotin	Olefin metathesis	Palladium in organic	Palladium in organic	Palladium in organic	Mercury in organic	Radicals in organic	Selenium in organic	selenoxide	Q paper solving				

Dr. Mith	III Paper IV		compounds:preparation of alkenyl and	using Grubb's catalyst,	synthesis:Heck reaction, Stille,	synthesis: Negishi, Hiyama,	synthesis:Buchwald-Hartwig)	synthesis: oxymercuration and		synthesis: Preparation of	selenoacetals as a C-H activating groups.					
	I Paper	Reduction	reductions: using	reduction: Boron	Aluminium reagents	NH2NH2 (diimide	CH2 in aldehydes	Wolff-Kishner	Oxidation selectivity,	Dehydrogenation of	Dehydrogenation/oxi	CrO3-pyridine, PCC,	ozone, KMnO4,	Oxidation of allylic	Q paper solving	
Mr. Jaidip Wable	MSc SEM III Paper III	Proteins and Nucleic acids	Amino acids, peptides and proteins: Chemical	amino acid sequencing.	Nucleic acids: Structure and function of	mutation	Chemical synthesis of oligonucleotides: Phosphodiester	Phosphotriester, Phosphoramidite.	Chemistry of enzymes:Properties of enzymes: i)	ii) Enzyme specificity; Fischer's 'lock and	Concept and identification of active site.	Factors affecting enzyme kinetics: Substrate	enzyme concentration, temperature, pH,	Reversible and irreversible inhibition.	Mechanism of enzyme action: transition-state	acid-base catalysis, covalent catalysis, strain or
	MSc SEM III Paper III Module	Chemistry of Steroids Steroids: General structure, nomenclature,	classification. Occurrence, biological role	important structural and stereochemical features of the following:	steroidal alkaloids, sterols.	Synthesis of 16-DPA from cholesterol and plant sapogenin	Synthesis of the androsterone, testosterone from 16-DPA:	Synthesis of the oestrone, oestadiol, oestriol, and progesterone from	Vitamins: Classification, sources and biological importance	Vitamins: Classification, sources and biological importance	Synthesis of the following: 1) Vitamin B1 including synthesis	Synthesis of the following: 2)Vitamin B2 from 4,5-Dimethyl-2-nitro	Synthesis of the following: 3) Vitamin B6 from: i)	Antibiotics: Classification on the basis of activity.	Synthesis of penicillin-G and phenoxymethylpenicillin from D-	Synthesis of phenoxymethylpenicillin from D-penicillamine and t
	MSc SEM III Paper III	Chemistry of Natural Products Alkaloids:	Prostaglandins: Classification, general structure	Plant and Insect growth regulators: Structures of JH2	Synthesis of triacontanol	Multi-step synthesis of natural products a) Woodward	b) Corey synthesis of Longifoline from resorcinol	c) Gilbert-Stork synthesis of Griseofulvin from	Biogenesis: Precursors, primary and secondary	Acetate hypothesis.	Mevalonate acid pathways.	Shikimic acid pathways.	General principles involved in the biosynthesis of	General principles involved in the biosynthesis of	General principles involved in the biosynthesis of	General principles involved in the biosynthesis of
	MSc SEM III Paper I Module I	Physical organic chemistry: Structural effects and reactivity:	Linear free energy relationship (LFER) in determination oforganic reaction	The Hammett equation	The Taft equation,	The Okamoto-Brown equation Yukawa-Tsuno equation	Yukawa-Tsuno equation.	Supramolecular chemistry : Molecular recognition and catalysis	molecular self-assembly	Principles of molecular associations	organizations as exemplified in biological macromolecules	Synthetic molecular receptors	receptors with molecular cleft	molecular tweezers,	Crown ethers as an catalysis	receptors with multiple hydrogen sites.
	TYBSC SEM V DSE I Module I	General Introduction to Drug, Definition of a drug, Requirements of an	Nomenclature of drugs: Generic name, Brand name, Systematic name	Definition of the following medicinal terms: Pharmacon, Pharmacophore,	LD50, ED50, Therapeutic Index.	Brief idea of the following terms: Receptors, Drug-receptor interaction,	Drug addiction, Spurious Drugs, Misbranded Drugs, Adulterated Drugs,	,Routes of Drug Administration and Dosage Forms	Formulations, Different dosage forms (emphasis on sustained release	Drug Metabolism I	Absorption, Distrib	Bio-transformation	Excretion Different types of	?hemical transformation of drugs with specific examples		
	TYBSC SEM V DSE I Module II	CNS Drugs: Classification based on pharmacological actions Concept of sedation and	Trimethadione (Oxazolidinediones), Piracetam (Pyranones), Midazolam,	Midazolam, Alprazolam (Benzodiazepines) Methylphenidate (Piperidines)	Synthesis of Trimethadione	Analgesics and Antipyretics Morphine (Phenanthrene alkaloids), Tramadol	"Aspirin (Salicylates), Paracetamol (p-Aminophenols), Synthesis of	Anti-inflammatory Drug	Antihistaminic Drugs	Cardiovascular drugs	Antidiabetic Agents ,	Antiparkinsonism Drugs	gs for Respiratory Sys			
Dr. Amo Pawar																
	MSc I Sem I Paper2 Practical								To analyze characterize Hexamine nickel	To prepare and characterize bis(ethylenediamine)	To prepare and characterize potassium	o- hydroxybenzylid	To prepare	To determine the amount of titanium present in the given	To determine the	To determine the
	MSc 2 Sem 3 Paper 2	introduction, Addition, sustitution reaction	Redox, reaction in absence of oxygen	Reaction of coordinated compounds, trans	Thermal, dissociati	Theory, applications of trans effects	MOT: Introduction	MOT of octahedral and tetrahedral complexes	MOT of square planar and trigonal bypramidal	Fluionality and chirality : examples	Fluxionality of CN3, and CN 5	fluxionality of organometallic compounds	geometries of higher coordination numbers			
	Sem 3 Paper 4	introduction of	Properties of nano	Siloxane-	Some important	silicon, mesoporous	aerogels, ordered	assembled nano	Applications of nano	Applications energy,	biotechnology,	Environmental				
	Sem 3 Paper 3	Introduction of spectroscopy and	Introduction to study of surfaces,	definition of a solid surface	general techniques in surface	surface spectroscopic	sampling surfaces, surface	X-ray photoelectron spectroscopy (XPS)		Basic principle, Instrumentation and	SEM	TEM and AFM				
	MSc 2 Sem 3 Paper 4 Module 2	Introduction Preparation, properties and uses of industrially important chemicals	Potassium permanganate preparation, properties and uses	sodium thisulphate preparation, properties and uses	bleaching powder preparation, properties and uses	hydrogen peroxide preparation, properties and uses	Potassium dichromate preparation, properties and uses									
Mrs. Manasi Mhaske	Sem 1									Introduction of	Inert, labile	SN1 and SN2	ligand substituion	mechanism of	trans effect: theory	Applications of trans
	Sem 3	Electral powder for	Sea water for	Fertilizer for	Cement for its Iron	Bleaching powder	Nycil powder for its	Preparation of ZnO	Determination of Na							
	MSc 2 Sem 3 Paper 1 Practical	Preparation of	Preparation of Co(α-	Preparation of	Hexaamine cobalt	Preparation of Trans-	Analysis of Zinc	Analysis of Brass	photometric	Analysis of galena	Analysis of galena					
	M.SC. II/ANA CHEM SEM III (P-I)	Introduction to cos	Lipstik, Perfumes types manufacturing	impact on skin and	Formulation: Hair c	Formulation: , Face	Common examples	Hair Tonic (Salicylic	5 Finished product	pH, residue conten						
	M.SC. II/ANA CHEM	ICP - Introduction,	plasma appearance	plasma source, spe	analyte automisation,flame structure	instrumentation: p	ICP,DCP	arc source emissio	X-ray spectroscopy	X-ray diffraction sp	Refractometry - OF	Refractometry - CD				
	M.SC. II/ANA	Paints: Introductio	Basic componants	Pigments types	separation and ana	binders and thinne	KF titration, Loss on drying	Pesticides: Introdu	Insecticides,Rodenticieds	Herbicides, fungisides	pesticide residue	modern extraction	Degradation of OPI	Petroluem, Bomb p	Coal, analysis, refining of oil	
	M.SC. II/Inorg CHEM SEM III (P-IV)	Paints: Introductio	Basic componants	Pigments types	separation and ana	binders and thinne	KF titration, Loss on drying	Pesticides: Introdu	Insecticides,Rodenticieds	Herbicides, fungisides	pesticide residue	modern extraction	Degradation of OPI	Detergent:classific	active ingredient a	
Ms Shital Sonawane	M.SC. II/ANA															
	MSc I Sem I/ MSc II SEM III /	Introduction of Introduction to	types of spectrums, Light-matter	Intro of FP Optical	Instrumentation and Laser Source and its	Introduction of AAS Wavelength selector	Instrumentation of Wavelength Selector	Application of AAS Echlle	Introduction to MF & Sample	Jabolanski diagram Types of detercto	Instrumentation of Signal Processor,	Intro of T & N Fibre Optics	Application of T & N Types of optical	FTIR Spectroscopy	Time domain	Michelson
	MSc II SEM III / Paper 4	Introduction to basic Introduction of	Introduction to objectives of the	fluorescence Types of the	Fluorophore & its 8 steps of the	Mechanism of 8 steps of the	electron transfer-Review of the	RDE-MEF Formulation of	Introduction of Introduction of	Instrumentation and Types of research	Introduction to Types of research	Requirements in CL Introduction of	Factors affecting CL Types of scaling	Instrumentation & Scale construction	Introduction of Chi square test	Instrumentation and Measurement in RM
	MSc II SEM III / Paper 4	Introduction to classical polarography	Polarographic terms	Introduction to Cyclic Voltammetry	CV Application	Introduction to Stripping methods	Anodic and Cathodic stripping methods	Introduction of Pulse polarography	different pulse polarography	square wave polarography	Biamperometric titrations	Karl Fisher Titrations,	Potentiometric titration, Conductometry	Introduction to Galvanostat,	Introduction of Potentiostat	corrosion analysis
	Sem I/ SEM V Practica	Determination of Estimation of Benzoic Acid	Estimate the Estimation of Aniline	Estimate the amt Determination of Naphthol	Iodine value of oil Determination of oxalic acid	Acid value of oil Estimation of Al Cinnamic acid	Salinity of water Estimation of Al	TLC & Coloumn Estimation of	Estimation of							

	MSc	Introduction to	Introduction of flame	Instrumentation &	General introduction	instrumentation &	Introduction of	Brief introduction of	introduction of	Application of	Introduction of	Application of	Practice all the			
	MSc Sem III P I M IV	Introduction to spectroscopic method	Light-matter interaction	Optical Components, introduction of source of radiation	Laser Source and intro of wavelength selectors	Wavelength selector intro and its types	Wavelength Selector (Garting Monochromators)	Monochromator Performance characteristics & Sample container	Types of Detector	Signal Processor, Read out Meter	Fibre Optics	Fibre Optics Sensors	Types of optical instruments	FTIR Spectroscopy	Time domain Spectroscopy	Michelson interferometer,Fourier transformation of interferogram
	MSc Sem III P II M I	Introduction to Luminescence, absorption spectroscopy along with fluorescence	Fluorophore & its classes.	Mechanism of Fluorescence Sensing	Types of sensor pH, Glucose & Protein	Introduction of RDE	RDE-MEF Principles	RDE-MEF Mechanism and application	Introduction of Chemiluminescence,	Chemiluminescence instrumentation,	Chemiluminescence application,	Photoacoustic spectroscopy introduction	Photoacoustic spectroscopy instrumentation	Photoacoustic spectroscopy application	Reflectance spectroscopy introducction	Reflectance spectroscopy application
	Sem III	Introduction:	Types of research,	The research	Steps in planning of	steps in conducting	Formulating a	Reviewing the	research design:	features of good	Basic principles of	Measurement and	Measurements in	sources of error in	Scaling, Scale	important scaling
	MSc															
	MSc															
Dr. Madhu Joshi	Sem I,															
	Sem I															
	Sem I	amount of Cr (III)	amount of Cr (III)	Water analysis:	Water analysis:	Anion exchanger	Anion exchanger	Solvent	Solvent	Determination of	Determination of					
	Sem PI	persulphate	persulphate	honey sample	honey sample	Estimation of Al	Estimation of Al	mebendazole	mebendazole							
	em 1	gaseous	ideal gas	deviation from	equation	temperature on	critical constants	effect and	Experiment for	liquid state	surface tension	agents, viscosity	problems on			
	Sem III,	gaseous	ideal gas	deviation from	equation	temperature on	critical constants	effect and	Experiment for	liquid state	surface tension	agents, viscosity	problems on			
	MScII,Sem III,P-III,M-III															
	MScII,Se	Classification, H2 – O2 fuel	cells, Phosphoric	Biochemical fuel cells	Working principle, cell	primary batteries, High	Lithium batteries	conducting polymer	conductance and ionic	Huckel – Onsagar	from Onsagar equation	Falkenhagen effect (	theory of activity	Huckel limiting law	higher concentration.	Debye Huckel limiting law
			Determine the	.	To determine		To study the									
		Micelles and	shape and	Solubilisation	Fundamentals	chemisorption	Catalysis:	Catalytic	Preparation	precipitation,	hydrothermal,	Activation of	Characterisatio	particle size	UV-Vis, FT-IR	thermal
		Schrodinger	Introduction to	Introduction to	Time-	Nondegenerat	Variation	Linear	Non-linear	Secular	Application to	Electron spin	Pauli's	Slater	Calculation of	Introduction to
	Sem/	Born	LCAO method	Molecular	Calculation of	Valence bond	Molecular	Construction of	Construction of	Bonding in	Bonding in	Bonding in	Hückel	Ethylene, 1, 3 -	Dissociation	π - electron
		The electrode-	The Helmholtz-	the Gouy-	Kinetics of	Butler	standard rate	facile kinetics	Marcus	The symmetry	Corrosion:	Thermodynami	Evans	Potential- pH	Corrosion	Electrosynthes
		Determine the	.	To determine		To study the										
		Introduction to gaseous behaviour of real gases	Deviations from ideal gas behaviour,	Boyle temperature, compressibility factor, Z	Causes of deviation from ideal behaviour	Van der Waals equation	temperature on Liquefaction of gases	Importance of critical constants	Thomson effect and inversion temperatur	Experiment for liquefactio n of gases	n to liquid state Determinati on of	Surface active agents, viscosity	problems on surface tension and			
		to gaseous	from ideal gas	temperature,	deviation	Waals	temperature	of critical	Thomson	Experiment	n to liquid	Surface	problems			
		Practicals														
		Thermodynamics:	representation of	pairs of partially	Classification of	determination of	Surfaces:1 Surface	across curved	droplets- Kelvin	by solids: Types of	isotherms-	based on	from solution, Gibbs	Experimental results	(microtome and	Numericals
		Practical														
		Polymer Synthesis:	Bulk polymerization, solution polymerization													
		Polymerization	polymerization	Crossing of	Properties of	Redox	Types of photo	Radiation less	Fluorescence	Triplet state	Delayed	Kinetic	Mechanism of	Collisions in	Deviations	Quenching by
			To determine the stability	To determine Eo of quinhydrone	To determine the	composition of a mixture of	To determine the formula of	To determine the rate constant	To determine molar	To determine the degree of	To estimate the amount of	To determine the partial molar	To determine the order of	To study the effect of the		
Mr. Sarang Gujar																
	SEM V Paper 2 Practical	Inorganic Practical - Bridge Course	Est of Zn	Est of Zn	Est of Cu	Est of Cu	Est of Ni	Est of Ni	Synthesis & Characterization Ni Complex	Synthesis & Characterization Ni Complex	Synthesis & Characterization Co Complex	Synthesis & Characterization Co Complex	Synthesis & Characterization Ferric alum	Synthesis & Characterization Ferric alum		
	MSc. SEM I PAPER 2 PRACTICAL								To analyze characterize Hexammine nickel	To prepare and characterize bis(ethylenediamine)	To prepare and characterize potassium	o- hydroxybenzylid	To prepare tri(thiourea)cuprous	To determine the amount of titanium present in the given	To determine the amount of copper in	To determine the composition and
	PAPER 1						Need for	Lothar Meyer Curve,	Modern periodic	Periodic trends-	Atomic size and	electron affinity, melting, boiling	Electronegativity and	Effective nuclear	Slaters rule	Problems on Slaters
	III PAPER	Biological oxygen	hemerythrin and	Reactions of	superoxide	Nitrogen fixation-	Metal ion transport	Metal ions in	Zn in biological	carboxypeptidase,	Role of metal ions in		Role of metal ions in	Less common ions	Less common ions-	
	III PAPER	Introduction of	separation of fission	Super heavy	Super heavy	Super heavy	Inorganic	Compounds of	antiarthritic drugs	anticancer drugs	radiopharmaceutical	radiopharmaceutical	Contrast agents			
	III PAPER	Principle,	Principle,	Principle,	Principle,	Principle,	Principles,	Principles,	Principles,	Braggs Law and	Powder Diffraction	Powder Diffraction	Laues Method	Rotating Crystal		
	I PAPER 2															