

महाराणाप्रतापजी. कालेज, जंगल धूसड़, गोरखपुर

कक्षा : बी.एस-सी. भाग-3		पाठ्यक्रम योजना : सत्र 2018-19			विषय : रसायनशास्त्र
दिनांक	व्याख्यान	प्राध्यापक कानाम	प्रश्नपत्र	अध्याय	शीर्षक
16.07.2018	1	Dr. S.K.Vernwal	IV	Separation Techniques	Principle and analytical applications
16.07.2018	1	Priyanka Mishra	III	Molecular rearrangements and reactions	Pinacolepinacolone rearrangement
17. 07.2018	2	Dr. S.K.Vernwal	IV	Separation Techniques	Solvent extraction
17.07.2018	2	Priyanka Mishra	III	Molecular rearrangements and reactions	BenzilBenzilic acid rearrangement
18. 07.2018	1	Gaurav Tiwari	I	Photochemistry	Interaction of radiation with matter
19. 07.2018	2	Gaurav Tiwari	I	Photochemistry	Difference between thermal and photochemical processes
20. 07.2018	1	Sanjay Jaiswal	II	Chemistry of Lanthanides	Introduction, electronic configuration of Lanthanides
21. 07.2018		Sanjay Jaiswal	CT		
23. 07.2018	3	Dr. S.K.Vernwal	IV	Separation Techniques	Paper Chromatography
23. 07.2018	3	Priyanka Mishra	III	Molecular rearrangements and reactions	BenzilBenzilic acid rearrangement
24. 07.2018	4	Dr. S.K.Vernwal	IV	Separation Techniques	Thin Layer Chromatography
24. 07.2018	4	Priyanka Mishra	III	Molecular rearrangements and reactions	Beckmann rearrangement
25. 07.2018	3	Gaurav Tiwari	I	Photochemistry	Grotthus-draper law, Stark –Einstein law, Jablonski diagram
26. 07.2018	4	Gaurav Tiwari	I	Photochemistry	Qualitative description of fluorescence, phosphorescence
27. 07.2018	2	Sanjay Jaiswal	II	Chemistry of Lanthanides	Atomic and ionic radii, Ionisation energy
28. 07.2018		Sanjay Jaiswal	ME		
30. 07.2018	5	Dr. S.K.Vernwal	IV	Separation Techniques	Column Chromatography
30. 07.2018	5	Priyanka Mishra	III	Molecular rearrangements and reactions	Fries rearrangement
31. 07.2018	6	Dr. S.K.Vernwal	IV	Separation Techniques	HPLC
31. 07.2018	6	Priyanka Mishra	III	Molecular rearrangements and reactions	Dieckmann reaction
01.08.2018	5	Gaurav Tiwari	I	Photochemistry	Non- radiative processes, quantum yield, photosensitized reaction
02.08.2018	6	Gaurav Tiwari	I	Photochemistry	Energy transfer processes
03.08.2018	3	Sanjay Jaiswal	II	Chemistry of Lanthanides	Calculation of magnetic moments and correlation with experimental data
04.08.2018		Sanjay Jaiswal	CT		
06.08.2018	7	Dr. S.K.Vernwal	IV	Separation Techniques	Ion-Exchange Chromatography
06.08.2018	7	Priyanka Mishra	III	Molecular rearrangements and reactions	Claisensmidt
07.08.2018	8	Dr. S.K.Vernwal	IV	Enzymes and Coenzymes	General features of enzymes and their active sites
07.08.2018	8	Priyanka Mishra	III	Polymers	Type of polymerisation

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08.08.2018	7	Gaurav Tiwari	I	Nuclear Chemistry	Fundamental particles and their classification, Nuclear forces
09.08.2018	8	Gaurav Tiwari	I	Nuclear Chemistry	Liquid drop and shell models of atomic nucleus, nuclear stability
10.08.2018	4	Sanjay Jaiswal	II	Chemistry of Lanthanides	Colour and spectral behaviour of Lanthanides series
11.08.2018		Sanjay Jaiswal	CT		
12.08.2018	9	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Ribozymes and Abzymes
12.08.2018	9	Priyanka Mishra	III	Polymers	Mechanism of polymerisation
13.08.2018	10	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Enzyme nomenclature
13.08.2018	10	Priyanka Mishra	III	Polymers	Preparation and use of terylene, nylon and Dynel
16.08.2018	9	Gaurav Tiwari	I	Nuclear Chemistry	Energy changes in nuclear reaction, Fission, The atom bomb, spallation and fusion reaction
17.08.2018	10	Gaurav Tiwari	I	Nuclear Chemistry	Hydrogen bomb, concept of nuclear cross-section, Radioactive equilibrium
18.08.2018	5	Sanjay Jaiswal	II	Chemistry of Lanthanides	Oxidation state and their stability, Ground state term symbols
20.08.2018	11	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Units of enzyme activity
20.08.2018		Sanjay Jaiswal	CT		
21.08.2018	12	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Factors affecting the enzyme activity
21.08.2018	11	Priyanka Mishra	III	Polymers	Natural and synthetic rubber
23.08.2018	12	Priyanka Mishra	III	Dyes	Colour and constitutions
24.08.2018	11	Gaurav Tiwari	I	Nuclear Chemistry	Kinetics of radioactive decay, Applications of radioactivity-radioactive dating
25.08.2018	12	Gaurav Tiwari	I	Nuclear Chemistry	Radioactive tracer technique, radioactivity in medicines, agriculture and research
27.08.2018	13	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Derivation of Michaelis-Menten equation
27.08.2018	6	Sanjay Jaiswal	II	Chemistry of Lanthanides	Ability to form complexes and examples of complexes of different coordination number
28.08.2018	14	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Experimental determination of K_m and V_{max}
28.08.2018		Sanjay Jaiswal	ME		
29.08.2018	13	Priyanka Mishra	III	Dyes	Classification of dyes
31.08.2018	14	Priyanka Mishra	III	Dyes	Methyl orange and congo red
01.09.2018	13	Gaurav Tiwari	I	Surface Chemistry	Introduction, difference between Physical adsorption and chemisorptions
04.09.2018	15	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Physical significance of K_m , V_{max} and K_{cat}/K_m
04.09.2018	14	Gaurav Tiwari	I	Surface Chemistry	Adsorption isotherms Langmuir adsorption isotherm and Freundlich adsorption isotherm
05.09.2018	7	Sanjay Jaiswal	II	Chemistry of Lanthanides	Occurrence and principle of separation of lanthanides
06.09.2018		Sanjay Jaiswal	CT		
07.09.2018	15	Priyanka Mishra	III	Dyes	Malachite green and crystal violet
08.09.2018	16	Priyanka Mishra	III	Dyes	Phenolphthalein and fluorescence
10.09.2018	16	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Competitive, Uncompetitive and Noncompetitive and Suicidal inhibitors

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10.09.2018	15	Gaurav Tiwari	I	Surface Chemistry	BET equation, Determination of surface area
11.09.2018	17	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Brief description of Coenzymes
11.09.2018	16	Gaurav Tiwari	I	Solution and Colligative properties	Thermodynamic derivation of relation between molecular weight and elevation in boiling point and freezing point
12.09.2018	8	Sanjay Jaiswal	II	Chemistry of Lanthanides	Occurrence and principle of separation of lanthanides
13.09.2018		Sanjay Jaiswal	CT		
14.09.2018	17	Priyanka Mishra	III	Dyes	Phenolphthaline and fluorescence
15.09.2018	18	Priyanka Mishra	III	Polynuclear hydrocarbons	Chemistry of Aathracene
17.09.2018	18	Dr. S. K. Vernwal	IV	Enzymes and Coenzymes	Function of Thiaminepyrophosphate (TPP)
17.09.2018	17	Gaurav Tiwari	I	Solution and Colligative properties	Experimental methods for determining various colligative properties
18.09.2018	19	Sanjay Jaiswal	IV	Nucleic Acids	A general description of DNA and RNA
18.09.2018	18	Gaurav Tiwari	I	Solution and Colligative properties	Abnormal molar mass, degree of dissociation and association
19.09.2018	9	Sanjay Jaiswal	II	Chemistry of Lanthanides	Occurrence and principle of separation of lanthanides
20.09.2018		Sanjay Jaiswal	CT		
22.09.2018	19	Priyanka Mishra	III	Polynuclear hydrocarbons	Chemistry of Aathracene
24.09.2018	20	Sanjay Jaiswal	IV	Nucleic Acids	Salient features of DNA and RNA
24.09.2018	20	Priyanka Mishra	III	Polynuclear hydrocarbons	Chemistry of Phenanthrene
25.09.2018	21	Sanjay Jaiswal	IV	Nucleic Acids	DNA denaturation and renaturation, Effect of UV radiation on DNA
25.09.2018	19	Gaurav Tiwari	I	Statistical Thermodynamics	Energy levels, Microstates, the Boltzmann factor
26.09.2018	20	Gaurav Tiwari	I	Statistical Thermodynamics	Partition function, Relation between partition functions and thermodynamic function
27.09.2018	10	Sanjay Jaiswal	II	Chemistry of Lanthanides	Occurrence and principle of separation of lanthanides
28.09.2018		Sanjay Jaiswal	ME		
01.10.2018	22	Sanjay Jaiswal	IV	Nucleic Acids	Elementary ideas of genetic code and recombinant technology
01.10.2018	21	Priyanka Mishra	III	Polynuclear hydrocarbons	Chemistry of Phenanthrene
03.10.2018	22	Priyanka Mishra	III	Polynuclear hydrocarbons	Carcinogenic hydrocarbon
04.10.2018	21	Gaurav Tiwari	I	Statistical Thermodynamics	Translational, rotational and vibrational partition function
05.10.2018	22	Gaurav Tiwari	I	Quantum Mechanics	Black-body radiation, Planck's radiation law
06.10.2018	11	Sanjay Jaiswal	II	Chemistry of Actinides	Introduction, electronic configuration of Actinides
09.10.2018	23	Sanjay Jaiswal	IV	Role of Metals in Biological systems	Introduction

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01.10.2018		Priyanka Mishra	CT		
10.10.2018	23	Priyanka Mishra	III	Heterocycles	Chemistry of Indole
11.10.2018	23	Gaurav Tiwari	I	Quantum Mechanics	Photoelectric effect, Compton effect, concept of wave motion
12.10.2018	24	Gaurav Tiwari	I	Quantum Mechanics	De Broglie hypothesis, the Heisenberg's uncertainty principle
13.10.2018	12	Sanjay Jaiswal	II	Chemistry of Actinides	Atomic and ionic radii, Ionisation energy
15.10.2018	24	Sanjay Jaiswal	IV	Role of Metals in Biological systems	Fe in myoglobin and haemoglobin
15.10.2018	13	Sanjay Jaiswal	II	Chemistry of Actinides	Oxidation state and their stability
16.10.2018	25	Sanjay Jaiswal	IV	Role of Metals in Biological systems	Zn in corboxypeptidase and carbonic anhydrase
16.10.2018		Priyanka Mishra	CT		
17.10.2018	24	Priyanka Mishra	III	Heterocycles	Chemistry of Quinoline
22.10.2018	26	Sanjay Jaiswal	IV	Role of Metals in Biological systems	Cu in plastocyanin and hemocyanin
22.10.2018	25	Gaurav Tiwari	I	Quantum Mechanics	Difference between classical and quantum mechanish
24.10.2018	26	Gaurav Tiwari	I	Quantum Mechanics	Hemiltonian operator, Schrodinger wave equation and its importance
25.10.2018	14	Sanjay Jaiswal	II	Chemistry of Actinides	Colour and absorption spectra of Actinides
26.10.2018	15	Sanjay Jaiswal	II	Chemistry of Actinides	Magnetic property of Actinides
27.10.2018		Priyanka Mishra	ME		
29.10.2018	27	Sanjay Jaiswal	IV	Role of Metals in Biological systems	Mg in chlorophyll
29.10.2018	25	Priyanka Mishra	III	Heterocycles	Chemistry of Isoquinoline
31.10.2018	27	Gaurav Tiwari	I	Quantum Mechanics	Schrodinger wave equation for H- atom, Quantum number and their importance
01.11.2018	28	Gaurav Tiwari	I	Quantum Mechanics	Hydrogen like wave function , angular wave function
02.11.2018	16	Sanjay Jaiswal	II	Chemistry of Actinides	Complex formation in Actinides
03.11.2018	17	Sanjay Jaiswal	II	Chemistry of Actinides	Chemistry of separation of Actinides
12.11.2018	28	Pradeep Verma	IV	Errors and Evaluation	Introduction, Definition of terms mean and median
12.11.2018		Priyanka Mishra	CT		
13.11.2018	29	Pradeep Verma	IV	Errors and Evaluation	Precision, standard deviation, relative standard deviation, and accuracy
13.11.2018	26	Priyanka Mishra	III	Amino acids, peptides and proteins	Classification of amino acid
14.11.2018	29	Gaurav Tiwari	I	Quantum Mechanics	Molecular orbital theory, basic ideas- criteria for forming M.O. from A.O.
15.11.2018	30	Gaurav Tiwari	I	Quantum Mechanics	Construction of M.O's by LCAO, H ₂ ⁺ ion , calculation of energy levels from wave function
16.11.2018	18	Sanjay Jaiswal	II	Chemistry of Actinides	One synthesis each of Np to Lr

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17.11.2018	19	Sanjay Jaiswal	II	Coordination Chemistry	Crystal Field Theory and its drawback
19.11.2018	30	Pradeep Verma	IV	Errors and Evaluation	Absolute error, and relative error
19.11.2018		Priyanka Mishra	CT		
20.11.2018	31	Pradeep Verma	IV	Errors and Evaluation	type of error in experimental data, determinate, indeterminate and gross
20.11.2018	27	Priyanka Mishra	III	Amino acids, peptides and proteins	Synthesis of amino acids
21.11.2018	31	Gaurav Tiwari	I	Quantum Mechanics	Physical picture of bonding and antibonding wave function
22.11.2018	32	Gaurav Tiwari	I	Quantum Mechanics	Concept of sigma and pi orbitals
23.11.2018	20	Sanjay Jaiswal	II	Coordination Chemistry	d- orbital splitting in Td complex
24.11.2018	21	Sanjay Jaiswal	II	Coordination Chemistry	d- orbital splitting in Oh complex
26.11.2018	32	Pradeep Verma	IV	Errors and Evaluation	Sources of errors and effect upon the analytical results
26.11.2018		Priyanka Mishra	ME		
27.11.2018	33	Pradeep Verma	IV	Errors and Evaluation	Methods of for reporting analytical data
27.11.2018	28	Priyanka Mishra	III	Amino acids, peptides & proteins	Synthesis of polypeptide
28.11.2018	33	Gaurav Tiwari	I	Quantum Mechanics	Valence bond model of H ₂ , comparison of M.O. and V.B. models
29.11.2018	34	Gaurav Tiwari	I	Spectroscopy	Introduction , Electromagnetic radiation , regions of the spectrums
30.11.2018	22	Sanjay Jaiswal	II	Coordination Chemistry	d- orbital splitting in Square planer complex
01.12.2018	23	Sanjay Jaiswal	II	Coordination Chemistry	Dq and factor affecting its magnitude
03.12.2018	34	Pradeep Verma	IV	Errors and Evaluation	Statistical evaluation of data
03.12.2018		Gaurav Tiwari	CT		
06.12.2018	35	Gaurav Tiwari	I	Spectroscopy	Basic features of different spectrometers
07.12.2018	24	Sanjay Jaiswal	II	Coordination Chemistry	Calculation of CFSC for d1 to d9
08.12.2018	25	Sanjay Jaiswal	II	Coordination Chemistry	Magnetic property on the basis of CFT
11.12.2018	35	Pradeep Verma	IV	Errors and Evaluation	indeterminate errors, uses of Statistics
11.12.2018	29	Priyanka Mishra	III	Amino acids, peptides & proteins	Determination of structure of polypeptide
12.12.2018	30	Priyanka Mishra	III	Amino acids, peptides & proteins	Classification of protein
13.12.2018		Gaurav Tiwari	CT		
14.12.2018	36	Gaurav Tiwari	I	Spectroscopy	Statement of the Born- Oppenheimer approximation, degrees of freedom
15.12.2018	26	Sanjay Jaiswal	II	Coordination Chemistry	Type of electronic transition ,Selection rule, charge transfer
17.12.2018	36	Priyanka Mishra	IV	Gravimetric analysis	Introduction, precipitation from homogeneous medium

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17.12.2018	27	Sanjay Jaiswal	II	Coordination Chemistry	Electronic spectra of $(\text{Ti}(\text{H}_2\text{O})_6)^{3+}$ and $(\text{Cu}(\text{H}_2\text{O})_6)^{2+}$
18.12.2018	37	Priyanka Mishra	IV	Gravimetric analysis	Estimation of Ba as BaSO_4 , co-precipitation, post precipitation
18.12.2018	31	Priyanka Mishra	III	Amino acids, peptides & proteins	Structure of protein
19.12.2018	32	Priyanka Mishra	III	Elimination reaction	E1 reaction
20.12.2018		Gaurav Tiwari	ME		
21.12.2018	37	Gaurav Tiwari	I	Rotational Spectrum	Diatomic molecules, Energy levels of a rigid rotor, selection rules
22.12.2018	28	Sanjay Jaiswal	II	Metal Carbonyls	Introduction of Ligands behaviour of Carbonyl
31.12.2018	38	Priyanka Mishra	IV	Gravimetric analysis	Post precipitation, washing and ignition
31.12.2018	29	Sanjay Jaiswal	II	Metal Carbonyls	General method of preparation
01.01.2019	39	Pradeep Verma	IV	Volumetric analysis	General term used in Volumetric analysis
01.01.2019	33	Priyanka Mishra	III	Elimination Reactions	E1 reaction
02.01.2019	34	Priyanka Mishra	III	Elimination Reactions	E2 reaction
03.01.2019		Gaurav Tiwari	CT		
04.01.2019	38	Gaurav Tiwari	I	Spectral Intensity	Maxwell- Boltzmann distribution , determination of bond length, qualitative description of non rigid rotor, isotope effect
05.01.2019	30	Sanjay Jaiswal	II	Metal Carbonyls	Preparation of structure of binary carbonyls of V , Cr and Mn
07.01.2019	40	Pradeep Verma	IV	Volumetric analysis	Principles of Acid –Base titration
07.01.2019	31	Sanjay Jaiswal	II	Metal Carbonyls	Structure of Fe, Co and Ni carbonyls
08.01.2019	41	Pradeep Verma	IV	Volumetric analysis	Redox titration, Precipitation titration
08.01.2019	35	Priyanka Mishra	III	Elimination Reactions	E2 reaction
09.01.2019	36	Priyanka Mishra	III	Elimination Reactions	E1CB reaction
10.01.2019		Gaurav Tiwari	CT		
11.01.2019	39	Gaurav Tiwari	I	Vibrational Spectrum	Infrared spectrum: Energy levels of simple harmonic oscillation , selection rules, pure vibrational spectrum
12.01.2019	32	Sanjay Jaiswal	II	Metal Nitrosyls	Ligands behaviour of $\text{NO}(\text{NO}^+, \text{NO}^-)$ and bridging ligands
17.01.2019	33	Sanjay Jaiswal	II	Metal Nitrosyl	Preparation and structure of Nitrosyls of Cr, Fe and Ru
18.01.2019	37	Priyanka Mishra	III	Elimination Reactions	Distinction between E1, E2 and E1CB reaction
19.01.2019	38	Priyanka Mishra	III	Reaction Intermediate	Carbocation (classical and non classical carbocation)
21.01.2019	42	Pradeep Verma	IV	Volumetric analysis	Iodimetry and iodometry, complexometric titration
21.01.2019		Gaurav Tiwari	CT		
23.01.2019	40	Gaurav Tiwari	I	Vibrational Spectrum	Intensity, determination of force constant and qualitative relation of force constant and bond energies

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24.01.2019	34	Sanjay Jaiswal	II	Metal Nitrosyl	Corbonyls , Nitrosyls and Cyanonitros
25.01.2019	35	Sanjay Jaiswal	II	Environmental Chemistry	Earth atmosphear and its components
28.01.2019	43	Pradeep Verma	IV	Volumetric analysis	Use of EDTA for the determination of Ca ²⁺ and Mg ²⁺ , Hardness of water, Metal ion indicators
28.01.2019	39	Priyanka Mishra	III	Reaction intermediates	Carbanions and free redicals
29.01.2019	44	Priyanka Mishra	IV	Biological membranes	General features and fluid mosaic model
29.01.2019	40	Priyanka Mishra	III	Reaction intermediates	Carben and nitrene
30.01.2019		Gaurav Tiwari	ME		
Extra	41	Gaurav Tiwari	I	Vibrational Spectrum	Effect of anharmonic motion and isotope on the spectrum, Idea of vibrational frequencies of different functional groups.
Extra	42	Gaurav Tiwari	I	Vibrational Spectrum	Effect of anharmonic motion and isotopes on the spectrum
Extra	43	Gaurav Tiwari	I	Vibrational Spectrum	Idea of vibrational frequencies of Raman spectrum
Extra	44	Gaurav Tiwari	I	Vibrational Spectrum	Concept of polarisability , condition of raman active vibrations
Extra	45	Gaurav Tiwari	I	Vibrational Spectrum	Mutual exclusion principle
Extra	36	Sanjay Jaiswal	II	Environmental Chemistry	Type of pollutants and their sources
Extra	37	Sanjay Jaiswal	II	Environmental Chemistry	Green house effect and Global warming
Extra	38	Sanjay Jaiswal	II	Environmental Chemistry	Acid rain , Ozone layer depletion
Extra	41	Priyanka Mishra	III	Reaction intermediates	Benzyne