

महाराणा प्रताप पी.जी. कालेज, जंगल धूसड़, गोरखपुर

कक्षा : बी.एस-सी. भाग-तीन					विषय : रसायनशास्त्र
दिनांक	व्याख्यान	प्राध्यापक का नाम	प्रश्नपत्र	अध्याय	शीर्षक
15.07.2013	1	Dr. Ram Sahay	IV	Separation technique	Principle and analytical applications
15.07.2013	1	Dr. Manisha Kapoor	II	Lanthanides and Actinides	Introduction, electronic configuration
16.07.2013	2	Dr. Ram Sahay	IV	Separation technique	Solvent Extraction
16.07.2013	2	Dr. Manisha Kapoor	II	Lanthanides and actinides	Lanthanides- oxidation states & their stability
17.07.2013	1	Dr. Shalini Singh	I	Photochemistry	Introduction-thermochemical reaction, photochemical reaction
18.07.2013	2	Dr. Shalini Singh	I	Photochemistry	Reaction, difference, laws of photochemistry
19.07.2013	1	Dr. S. K. Vernwal	III	Molecular rearrangement & name reactions	Pinacole-Pinacolone rearrangement
20.07.2013	2	Dr. S. K. Vernwal	III	Molecular rearrangement & name reactions	Benzil-Benzilic acid rearrangement
22.07.2013	3	Dr. Ram Sahay	IV	Separation technique	Chromatography (Thin layer, paper)
22.07.2013	3	Dr. Manisha Kapoor	II	Lanthanides and actinides	Lanthanides-Atomic and ionic radii Lanthanides contraction
23.07.2013	4	Dr. Ram Sahay	IV	Separation technique	Column chromatography
23.07.2013	4	Dr. Manisha Kapoor	II	Lanthanides and actinides	Consequence of lanthanide contraction
24.07.2013	3	Dr. Shalini Singh	I	Photochemistry	Photophysical process
25.07.2013	4	Dr. Shalini Singh	I	Photochemistry	Jablonski Diagram
26.07.2013	3	Dr. S. K. Vernwal	III	Molecular rearrangement & Name reactions	Beckmann rearrangement
27.07.2013		Dr. S. K. Vernwal	III	Molecular rearrangement & Name reactions	Fries rearrangement
29.07.2013	5	Dr. Ram Sahay	IV	Separation technique	H.P.L.C. ion exchange
29.07.2013	5	Dr. Manisha Kapoor	II	Lanthanides and actinides	Colour and spectral behaviour of Ln^{3+} ions
30.07.2013	6	Dr. Ram Sahay	IV	Enzymes and coenzymes	General features of enzymes and their active site
30.07.2013	6	Dr. Manisha Kapoor	II	Lanthanides and actinides	Ground state term symbols
31.07.2013	5	Dr. Shalini Singh	I	Photochemistry	Potential energy curve
01.08.2013	6	Dr. Shalini Singh	I	Photochemistry	Quantum yield and its efficiency
03.08.2013	5	Dr. S. K. Vernwal	III	Molecular rearrangement & name reactions	Claisen-Schmidt reaction

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05.08.2013	7	Dr. Ram Sahay	IV	Enzymes and coenzymes	Ribozymes and abzymes
05.08.2013	7	P. K. Verma	II	Lanthanides and Actinides	Magnetic moments of lanthanides
06.08.2013	8	P. K. Verma	IV	Enzymes and coenzymes	Enzyme Nomenclature, units of enzyme activity
06.08.2013	8	Dr. Manisha Kapoor	II	Lanthanides and Actinides	Lanthanides ability to form complexes
07.08.2013	7	Dr. Shalini Singh	I	Photochemistry	Reason for low and high quantum yield
08.08.2013		Dr. Shalini Singh	I	Class Teaching	
10.08.2013	6	Dr. S.K. Vernwal	III	Molecular rearrangement & Name reactions	Dieckmann reaction
12.08.2013	9	Dr. Ram Sahay	IV	Enzymes and coenzymes	Derivation of michaelis menten equation
12.08.2013	9	P. K. Verma	II	Lanthanides and actinides	Occurrence and principle of separation of lanthanides
13.08.2013	10	Dr. Ram Sahay	IV	Enzymes and coenzymes	Experimental determination of K_m and V_{max}
13.08.2013	10	P. K. Verma	II	Lanthanides and actinides	Uses of lanthanides and their compounds
14.08.2013	8	Dr. Shalini Singh	I	Photochemistry	Photosensitization reaction
16.08.2013	7	Dr. Manisha Kapoor	III	Polymers	Types of polymerisation
17.08.2013		Dr. Manisha Kapoor	III	Class Teaching	
19.08.2013	11	Dr. Ram Sahay	IV	Enzymes and coenzymes	Physical significance of K_m and V_{max} significance of Kat/K_m
20.08.2013	12	Dr. Ram Sahay	IV	Enzymes and coenzymes	Competitive uncompetitive, Non-competitive and suicidal inhibitors
20.08.2013	12	P. K. Verma	II	Lanthanides and actinides	Atomic & ionic radii & ionisation energy of actinides
22.08.2013	9	Dr. Shalini Singh	I	Nuclear chemistry	Introduction, fundamental particles
23.08.2013	8	Dr. Manisha Kapoor	III	Polymers	Mechanism of polymerisation
24.08.2013	9	Dr. Manisha Kapoor	III	Polymers	Mechanism of polymerisation
26.08.2013	13	Dr. Ram Sahay	IV	Enzymes and coenzymes	A brief description of coenzymes
26.08.2013		P. K. Verma		Evaluation	
27.08.2013	14	Dr. Ram Sahay	IV	Enzymes and coenzymes	Function of Thiamine pyrophosphate, coenzymes
27.08.2013	13	P. K. Verma	II	Lanthanides and actinides	Oxidation states & their stability in actinides
29.08.2013	10	Dr. Shalini Singh	I	Nuclear chemistry	Nuclear models-Liquid drop model
30.08.2013	10	Dr. Manisha Kapoor	III	Polymers	Preparation & uses of teflon, terylene, nylon & dynel

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31.08.2013	11	Dr. Mainsha Kapoor	III	Polymers	Natural & synthetic rubber
02.09.2013	15	Dr. Ram Sahay	IV	Nucleic acid	A general description of constituents of DNA
02.09.2013	14	P. K. Verma	II	Lanthanides and actinides	Colour and absorption spectra of actinides
03.09.2013	16	Dr. Ram Sahay	IV	Nucleic acid	Salient features of a structure of DNA & RNA
03.09.2013		P. K. Verma	II	Class Teaching	
04.09.2013	11	Dr. Shalini Singh	I	Nuclear chemistry	Nuclear shell model
05.09.2013	12	Dr. Shalini Singh	I	Nuclear chemistry	Nuclear forces
06.09.2013	12	Dr. Manisha Kapoor	III	Dyes	Colour and constitution
07.09.2013	13	Dr. Manisha Kapoor	III	Dyes	Classification of dyes
09.09.2013	17	Dr. Ram Sahay	IV	Nucleic acid	DNA denaturation and renaturation effect of UV radiation on DNA
09.09.2013	15	P. K. Verma	II	Lanthanides and actinides	Magnetic properties of actinides
10.09.2013	18	Dr. Ram Sahay	IV	Nucleic acid	Elementary idea of genetic code and recombinant DNA technology
10.09.2013		P. K. Verma	II	Class Teaching	
11.09.2013	13	Dr. Shalini Singh	I	Nuclear chemistry	Nuclear fission and nuclear fusion
12.09.2013	14	Dr. Shalini Singh	I	Nuclear chemistry	Spallation and nuclear cross section area
13.09.2013	14	Dr. Manisha Kapoor	III	Dyes	Methyl orange & congo red
14.09.2013	15	Dr. Manisha Kapoor	III	Dyes	Malachite green & crystal violet
16.09.2013	19	Dr. Ram Sahay	IV	Role of metals in biological systems	Introduction, role of Fe, Mg, Cu, Zn
16.09.2013	16	P. K. Verma	II	Lanthanides and actinides	Complex formation in Actinides
17.09.2013	20	Dr. Ram Sahay	IV	Role of metals in biological systems	Fe in myoglobin and hemoglobin
17.09.2013		P. K. Verma	II	Class Teaching	
20.09.2013	16	Dr. Manisha Kapoor	III	Dyes	Phenolphthalein & Fluorescene
21.09.2013	17	Dr. Manisha Kapoor	III	Polynuclear hydrocarbons	Chemistry of anthracene
23.09.2013	21	Dr. Ram Sahay	IV	Role of metals in biological systems	Cu in plastocyanin and hemocyanin
23.09.2013	17	P. K. Verma	II	Lanthanides and actinides	Chemistry of separation of Np, Pu and Am from U
24.09.2013		Dr. Ram Sahay		Evaluation	
24.09.2013	18	P. K. Verma	II	Lanthanides and actinides	One synthesis each of Np to Lr

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25.09.2013	15	Dr. Shalini Singh	I	Nuclear chemistry	Atom bomb, hydrogen bomb
26.09.2013	16	Dr. Shalini Singh	I	Nuclear chemistry	Radioactivity applications
27.09.2013	18	Dr. Manisha Kapoor	III	Polynuclear hydrocarbons	Chemistry of anthracene
28.09.2013	19	Dr. Manisha Kapoor	III	Polynuclear hydrocarbons	Chemistry of anthracene
30.09.2013	22	Dr. Ram Sahay	IV	Role of metals in biological systems	Zn in carboxy peptidases and carbonic anhydrase
30.09.2013	19	Dr. Manisha Kapoor	II	Environmental chemistry	Earth's atmosphere and its components
01.10.2013	23	Dr. Ram Sahay	IV	Role of metal in biological system	Mg in chlorophyll
01.10.2013	20	P.K. Verma	II	Environmental chemistry	Types of pollutants and their sources
03.10.2013	17	Dr. Shalini Singh	I	Surface chemistry	Introduction and definition
07.10.2013	14	Dr. Shalini Singh	IV	Errors and evaluation	Introduction mean and median
07.10.2013		P.K. Verma		Class Teaching	
08.10.2013	25	Dr. Shalini Singh	IV	Errors and evaluation	Accuracy and precision
08.10.2013	21	P.K. Verma	II	Environmental chemistry	Green house effect and global warming
09.10.2013	18	Dr. Shalini Singh	I	Surface chemistry	Difference between chemical and physical adsorption
10.10.2013	19	Dr. Shalini Singh	I	Surface chemistry	Difference between chemical and physical adsorption
11.10.2013	20	Dr. Manisha Kapoor	III	Polynuclear hydrocarbons	Chemistry of phenanthrene
17.10.2013	20	Dr. Shalini Singh	I	Surface chemistry	
19.10.2013		Dr. Manisha Kapoor	III	Class Teaching	
21.10.2013	26	P. K. Verma	IV	Errors and evaluation	Significant figures absolute error, relative error
21.10.2013	22	Dr. Manisha Kapoor	II	Environmental chemistry	Acid rains
22.10.2013	27	Dr. Shalini Singh	IV	Errors and evaluation	
22.10.2013	23	P. K. Verma	II	Environmental chemistry	Ozone layer
23.10.2013	21	Dr. Manisha Kapoor	I	Surface chemistry	Freundlich. isotherm
24.10.2013	22	Dr. Shalini Singh	I	Surface chemistry	Langmuir isotherm
25.10.2013	21	Dr. S.K. Vernwal	III	Polynuclear hydrocarbons	Chemistry of phenanthrene
26.10.2013		Dr. Manisha Kapoor	III	Evaluation	
28.10.2013	28	Dr. Shalini Singh	IV	Errors and evaluation	Types of error-determinate & indeterminate
28.10.2013	24	P. K. Verma	II	Coordination chemistry	CFT theory, drawback
29.10.2013	29	Dr. Shalini Singh	IV	Errors and evaluation	Determinate errors

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29.10.2013	25	P. K. Verma	II	Coordination chemistry	d-orbital splitting in octahedral
30.10.2013	23	Dr. Shalini Singh	I	Surface chemistry	Types of adsorption isotherm
06.11.2013	24	Dr. Shalini Singh	I	Surface chemistry	B.E.T. equation
07.11.2013	25	Dr. Shalini Singh	I	Surface chemistry	Determination of surface area
08.11.2013		Dr. Manisha Kapoor	III	Class Teaching	
09.11.2013	22	Dr. Manisha Kapoor	III	Polynuclear hydrocarbons	Carcinogenic hydrocarbons
11.11.2013	30	Dr. Shalini Singh	IV	Errors and evaluation	Indeterminate errors
11.11.2013	26	P. K. Verma	II	Coordination chemistry	d-orbital splitting in tetrahedral
12.11.2013	31	Dr. Shalini Singh	IV	Errors and evaluation	Indeterminate errors
12.11.2013	27	P. K. Verma	II	Coordination chemistry	d-orbital splitting in square planar field
15.11.2013	23	Dr. Manisha Kapoor	III	Heterocycles	Chemistry of indole
16.11.2013	24	Dr. Manisha Kapoor	III	Heterocycles	Chemistry of quinoline
18.11.2013	32	Dr. Shalini Singh	IV	Errors and evaluation	Gross error
18.11.2013		P. K. Verma		Class Teaching	
19.11.2013	33	Dr. Shalini Singh	IV	Errors and evaluation	Sources of error
19.11.2013	28	P.K. Verma	II	Coordination chemistry	Weak and strong field ligands
20.11.2013	26	Dr. Shalini Singh	I	Colligative property	Thermodynamic derivation of elevation in boiling and molecular weight
21.11.2013	27	Dr. Shalini Singh	I	Colligative property	Thermodynamic derivation of elevation in boiling and molecular weight
22.11.2013	25	Dr. Manisha Kapoor	III	Heterocycles	Chemistry of isoquinoline
23.11.2013	26	Dr. Manisha Kapoor	III	Amino acids, peptides & proteins	Classification of amino acids
25.11.2013	34	Dr. Shalini Singh	IV	Errors and evaluation	Effect on analytical result uses of statistics
25.11.2013		P.K. Verma		Evaluation	
26.11.2013	35	Dr. Shalini Singh	IV	Gravimetric analysis	Introduction and principle
26.11.2013	29	P.K. Verma	II	Coordination chemistry	Dq and factors influencing its magnitude
27.11.2013	28	Dr. Shalini Singh	I	Colligative property	Thermodynamic derivation of depression in freezing point & molecular weight
28.11.2013	29	Dr. Shalini Singh	I	Colligative property	Thermodynamic derivation of depression in freezing point & molecular weight

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29.11.2013	27	Dr. Manisha Kapoor	III	Amino acids, peptides & proteins	Synthesis of amino acids
30.11.2013	28	Dr. Manisha Kapoor	III	Amino acids, peptides & proteins	Isoelectric point & electrophoresis
02.12.2013	36	Dr. Shalini Singh	IV	Gravimetric analysis	Various steps involve in gravimetric analysis
02.12.2013		Dr. Manisha Kapoor		Class Teaching	
03.12.2013	37	Dr. Shalini Singh	IV	Gravimetric analysis	Various steps involve in gravimetric analysis
03.12.2013	30	P.K. Verma	II	Coordination chemistry	Calculation of CFSE for d^1 to d^9 weak and strong field complexes
06.12.2013	29	Dr. Manisha Kapoor	III	Amino acids peptides & proteins	Synthesis of polypeptides
07.12.2013	30	Dr. Manisha Kapoor	III	Amino acids peptides & proteins	Determination of structure of polypeptides
09.12.2013	38	Dr. Shalini Singh	IV	Gravimetric analysis	 4
09.12.2013	31	P.K. Verma	II	Coordination chemistry	Magnetic properties on the basis of CFT
11.12.2013	30	Dr. Shalini Singh	I	Colligative property	Experimental methods
12.12.2013		Dr. Shalini Singh	I	Class Teaching	
13.12.2013	31	Dr. Manisha Kapoor	III	Amino acids, peptides & proteins	Classification of proteins
14.12.2013	32	Dr. Manisha Kapoor	III	Amino acids, peptides & proteins	Structure of proteins
16.12.2013	39	Dr. Shalini Singh	IV	Gravimetric analysis	Co-precipitation, post-precipitation
16.12.2013	32	P.K. Verma	II	Coordination chemistry	Types of electronic transition
17.12.2013	40	Dr. Shalini Singh	IV	Volumetric analysis	General terms used in volumetric analysis
17.12.2013	33	P.K. Verma	II	Coordination chemistry	Selection rule, charge transfer
18.12.2013	31	Dr. Shalini Singh	I	Colligative property	Vant Hoff factor
19.12.2013		Dr. Shalini Singh	I	Class Teaching	
20.12.2013	33	Dr. Manisha Kapoor	III	Amino acids, peptides & proteins	Protein denaturation & renaturation
21.12.2013	34	Dr. Manisha Kapoor	III	Elimination reaction	E1 reaction
23.12.2013	41	Dr. Shalini Singh	IV	Volumetric analysis	Principles of acid-base titration
23.12.2013	34	P.K. Verma	II	Coordination chemistry	Spectrochemical series
24.12.2013	42	Dr. Shalini Singh	IV	Volumetric analysis	Indicators
24.12.2013	35	P.K. Verma	II	Coordination chemistry	Electronic spectra of $[Ti(H_2O)_6]^{3+}$, $[Cu(H_2O)_6]^{2+}$
26.12.2013	32	Dr. Shalini Singh	I	Statistical thermodynamic	Introduction, partition function
27.12.2013		Dr. Manisha Kapoor	III	Evaluation	
28.12.2013	35	Dr. Manisha Kapoor	III	Elimination reaction	E1 reaction

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30.12.2013	43	Dr. Shalini Singh	IV	Volumetric analysis	Redox titration iodimetry
30.12.2013	36	P.K. Verma	II	Metal carbonyls	Introduction, ligand behaviour of CO
31.12.2013	44	Dr. Shalini Singh	IV	Volumetric analysis	Iodometry, complexometric titration
31.12.2013	37	P.K. Verma	II	Metal carbonyls	General methods of preparation
01.01.2014	33	Dr. Shalini Singh	I	Statistical thermodynamics	Translational partition function
02.01.2014	34	Dr. Shalini Singh	I	Statistical thermodynamics	Rotational partition function
03.01.2014		Dr. Manisha Kapoor	III	Class Teaching	
04.01.2014	36	Dr. Manisha Kapoor	III	Elimination reaction	E2 reaction
06.01.2014	46	Dr. Shalini Singh	IV	Volumetric analysis	Use of data for determination of Ca^{2+} & Mg^{2+}
06.01.2014	38	P.K. Verma	II	Metal carbonyls	Representation of structure of binary of V, Cr, Mn
07.01.2014	46	Dr. Shalini Singh	IV	Volumetric analysis	Hardness and total hardness of water
07.01.2014	39	P.K. Verma	II	Metal carbonyls	Structures of binary carbonyls of Fe, Co, Ni
08.01.2014	35	Dr. Shalini Singh	I	Statistical thermodynamics	Vibrational partition function
09.01.2014	36	Dr. Shalini Singh	I	Statistical thermodynamics	Relationship between partition function and thermodynamic property
10.01.2014		Dr. Manisha Kapoor	III	Class Teaching	
11.01.2014	37	Dr. Manisha Kapoor	III	Elimination reaction	E2 reaction
13.01.2014	47	Dr. Shalini Singh	IV	Biological membrane	General features
13.01.2014	40	P. K. Verma	II	Metal Nitrosyls	Ligand behaviour of NO (NO^+ , NO^- , Bridging NO)
16.01.2014	37	Dr. Shalini Singh	I	Statistical thermodynamics	Relationship between partition function and thermodynamic property
17.01.2014	38	Dr. Manisha Kapoor	III	Elimination reaction	E1CB reaction
18.01.2014	39	Dr. Manisha Kapoor	III	Elimination reaction	Distinction between E1, E2 & E1CB Mechanism
20.01.2014	48	Dr. Shalini Singh	IV	Biological membrane	Fluid mosaic model, diffusion, facilitated
20.01.2014		P. K. Verma		Class Teaching	
21.01.2014	49	Dr. Shalini Singh	IV	Biological membrane	Diffusion, active transport, donnan membrane equilibria
21.01.2014	41	P. K. Verma	II	Metal Nitrosyls	Preparation and structures of nitrosyls of Cr, Fe, Ru
22.01.2014	38	Dr. Shalini Singh	I	Quantum mechanics	Blackbody radiation, planck's radiation law, compton effect
23.01.2014	39	Dr. Shalini Singh	I	Quantum mechanics	Photoelectric effect, concept of wave motion de broglie hypothesis

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24.01.2014	40	Dr. Manisha Kapoor	III	Reaction intermediates	Carbenes
25.01.2014	41	Dr. Manisha Kapoor	III	Reaction intermediates	Nitrenes
27.01.2014	40	Dr. Shalini Singh	I	Quantum mechanics	Heisenberg's uncertainty principle, difference between
27.01.2014	42	P. K. Verma	II	Metal nitrosyls	Carbonyl nitrosyls and cyano nitrosyls
28.01.2014	41	Dr. Shalini Singh	I	Quantum mechanics	Hamiltonian operator, schrodinger wave equation and its importance
28.01.2014		P. K. Verma		Evaluation	
29.01.2014	42	Dr. Manisha Kapoor	I	Quantum mechanics	Physical significance of wave function
30.01.2014	43	Dr. Manisha Kapoor	I	Quantum mechanics	Schrodinger wave equation for H-atom and its separation into three variable
31.01.2014	42	Dr. S. K. Verwal	III	Reaction intermediates	Benzynes
01.02.2014	43	Dr. S. K. Verwal	III	Reaction intermediates	Free radicals
03.02.2014	44	Dr. shalini Singh	I	Quantum mechanics	Quantum numbers, their importance radial wave functions
03.02.2014	45	Dr. Shalini Singh	I	Quantum mechanics	Angular wave function
04.02.2014	46	Dr. Shalini Singh	I	Quantum mechanics	Molecular orbital theory, criteria for forming mo. from A.O. & eyclo
04.02.2014	47	Dr. Shalini Singh	I	Quantum mechanics	ion, calculation of energy levels from wave function
05.02.2014	48	Dr. Shalini Singh	I	Quantum mechanics	Physical picture of bonding and antibonding wave function
06.02.2014	49	Dr. Shalini Singh	I	Quantum mechanics	Concept of σ , σ^* , π , π^* orbitals and their characteristics, H ₂ model by vbt comparison between mo and vb
07.02.2014	44	Dr. Manisha Kapoor	III	Reaction intermediates	Carbanions
08.02.2014	45	Dr. Manisha Kapoor	III	Reaction intermediates	Carbocations
10.02.2014	50	Dr. Shalini Singh	I	Spectroscopy	Introduction, electromagnetic radiation, regions of spectrum
10.02.2014	51	Dr. Shalini Singh	I	Spectroscopy	Basic difference between spectrometers, born oppenheimer imation approx degree of freedom
11.02.2014	52	Dr. Shalini Singh	I	Spectroscopy	Rotational spectrum

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11.02.2014	53	Dr. Shalini Singh	I	Spectroscopy	Maxwell-boltzmann population distribution, determination of bond length
12.02.2014	54	Dr. Shalini Singh	I	Spectroscopy	Qualitative description of non-rigid : rotor isotopic effect
13.02.2014	55	Dr. Shalini Singh	I	Spectroscopy	Vibrational spectrum-energy level of S.H.O., selection rules
14.02.2014	46	Dr. Manisha Kapoor	III	Reaction intermediates	Classical & nonclassical carbocations
15.02.2014	47	Dr. Manisha Kapoor	III	Reaction intermediates	Classical & nonclassical carbocations
*	56	Dr. Shalini Singh	I	Spectroscopy	Pure vibrational spectrum, intensity determination of force constant
*	57	Dr. Shalini Singh	I	Spectroscopy	Relation between bond energy and force constant,
*					anharmonic motion effect of isotopes
*	58	Dr. Shalini Singh	I	Spectroscopy	Vibrational frequencies of different groups
*	59	Dr. Shalini Singh	I	Spectroscopy	Raman spectrum concept of polarizability,
					condition for active raman vibrations
*	60	Dr. Shalini Singh	I	Spectroscopy	Pure vibrational and pure rotational raman spectrum
*	61	Dr. Shalini Singh	I	Spectroscopy	Electronic spectra-concept of potential energy curve, selection rule
*	62	Dr. Shalini Singh	I	Spectroscopy	Frank-condon principles qualitative description of Fx & M.O. their energy levels and their respective transition