

MAHARANA PRATAP MAHAVIDYALAYA, JUNGLE DHUSAN, GORAKHPUR

Class: M. Sc. I Semester			LESSON PLAN : 2022-23		Subject: CHEMISTRY
DATE	LECTURE	TEACHER'S NAME	PAPER	CHAPTER	TOPIC
01/08/2022	1	Abhinav Tripathi	I	Molecular Symmetry	Symmetry Elements
	1	Dr. R. Sahay	II	Fundamental Concepts	Introduction , Operators
03/08/2022	2	Abhinav Tripathi	I	Molecular Symmetry	Symmetry Elements
	2	Dr. R. Sahay	II	Fundamental Concepts	Algebra of Operators , Commute, Linear and Vector operators
04/08/2022	3	Abhinav Tripathi	I	Molecular Symmetry	Symmetry operations
	3	Dr. R. Sahay	II	Fundamental Concepts	Laplacian and Hermitian operators
05/08/2022	1	Abhinav Tripathi	III	Stereochemistry of bonding in main group component	$d\pi$ - $p\pi$ bonds
	1	Priyanka Mishra	IV	Elimination Reactions	E1 reactions
06/08/2022	2	Abhinav Tripathi	III	Stereochemistry of bonding in main group component	Bent's rule
	2	Priyanka Mishra	IV	Elimination Reactions	E1 mechanism
08/08/2022	CT	Abhinav Tripathi	CT	Class Teaching	
	3	Priyanka Mishra	IV	Elimination Reactions	E2 reactions
10/08/2022	4	Abhinav Tripathi	I	Molecular Symmetry	Symmetry operation with special reference to water molecule
	4	Dr. R. Sahay	II	Fundamental Concepts	Laplacian operators
11/08/2022	5	Abhinav Tripathi	I	Molecular Symmetry	Symmetry operation with special reference to ethane molecules
	5	Dr. R. Sahay	II	Fundamental Concepts	Concept of normalisation and orthogonality
13/08/2022	6	Abhinav Tripathi	I	Molecular Symmetry	Classification of molecules / ion based on their symmetry property
	6	Dr. R. Sahay	II	Fundamental Concepts	Concept of normalisation and orthogonality
16/08/2022	3	Abhinav Tripathi	III	Stereochemistry of bonding in main group component	Energetics of Hybridisation
	4	Dr. S. K. Vernwal	IV	Substitution Reactions	Aromatic electrophilic substitution: General view, Energy profile diagram, Arenium ion mechanism (ArSE)
17/08/2022	4	Abhinav Tripathi	III	Stereochemistry of bonding in main group component	Energetics of Hybridisation
	5	Priyanka Mishra	IV	Elimination Reactions	E2 mechanism
19/08/2022	5	Abhinav Tripathi	III	Stereochemistry of bonding in main group component	Polyether complexes of alkali metals
	CT	Priyanka Mishra	CT	Class Teaching	
20/08/2022	7	Abhinav Tripathi	I	Molecular Symmetry	Classification of molecules / ion based on their symmetry properties
	7	Dr. R. Sahay	II	Fundamental Concepts	Postulate of quantum mechanics

22/08/2022	8	Abhinav Tripathi	I	Molecular Symmetry	Classification of molecules / ion based on their symmetry properties
	8	Dr. R. Sahay	II	Fundamental Concepts	Schrodinger wave equation
23/08/2022	9	Abhinav Tripathi	I	Molecular Symmetry	Derivation of Matrices for rotation reflection,
	9	Dr. R. Sahay	II	Fundamental Concepts	Particle in one dimensional box
24/08/2022	6	Abhinav Tripathi	III	Preparation , structure and bonding	Polyether complexes of alkali metals
	6	Priyanka Mishra	IV	Elimination Reactions	E1CB reaction
25/08/2022	7	Abhinav Tripathi	III	Preparation , structure and bonding	Polyether complexes of alkali metals
	7	Priyanka Mishra	IV	Elimination Reactions	E1CB mechanism
26/08/2022	8	AbhinavTripathi	III	Preparation , structure and bonding	Polyether complexes of alkaline metals
	ME	Priyanka Mishra	ME	Monthly Evaluation	
27/08/2022	10	Abhinav Tripathi	I	Molecular Symmetry	Derivation of Matrices for rotation reflection and inversion operations
	10	Dr. R. Sahay	II	Fundamental Concepts	Particle in one dimensional box
01/09/2022	11	Abhinav Tripathi	I	Molecular Symmetry	Symmetry point group applied to all type of molecules Cnh , Dnh ,Cnv
	11	Dr. R. Sahay	II	Fundamental Concepts	Particle in one dimensional box
02/09/2022	12	Abhinav Tripathi	I	Molecular Symmetry	Symmetry point group applied to all type of molecules Cnh , Dnh ,Cnv
	12	Dr. R. Sahay	II	Quantum Mechanical treatment	One dimensional harmonic oscillator
03/09/2022	9	Abhinav Tripathi	III	Preparation , structure and bonding	Polyether complexes of alkaline metals
	8	Dr. S. K. Vernwal	IV	Substitution Reactions	Mechanism of Nitration and Sulphonation
05/09/2022	10	Abhinav Tripathi	III	Preparation , structure and bonding	Polyether complexes of alkaline metals
	9	Dr. S. K. Vernwal	IV	Substitution Reactions	Mechanism of Halogenation
06/09/2022	11	Abhinav Tripathi	III	Preparation , structure and bonding	Polyphosphazene
	CT	Priyanka Mishra	CT	Class Teaching	
07/09/2022	13	Abhinav Tripathi	I	Molecular Symmetry	Symmetry point group applied to all type of molecules Td, Oh, and Ih
	13	Dr. R. Sahay	II	Quantum Mechanical treatment	Classical quantum mechanics
10/09/2022	14	Abhinav Tripathi	I	Molecular Symmetry	Symmetry point group applied to all type of molecules Td, Oh, and Ih
	14	Dr. R. Sahay	II	Quantum Mechanical treatment	Energy level of harmonic and anharmonic oscillator
12/09/2022	15	Dr. R. Sahay	I	Molecular Symmetry	Group multiplication basis , Matrices representation character of an operation
	15	Dr. R. Sahay	II	Quantum Mechanical treatment	Rigid rotor model of a diatomic molecules

13/09/2022	12	Abhinav Tripathi	III	Preparation , structure and bonding	Polyphosphazene
	10	Dr. S. K. Vernwal	IV	Substitution Reactions	Mechanism of Friedel-Craft reaction
15/09/2022	13	Abhinav Tripathi	III	Preparation , structure and bonding	Thiazyl and its polymers
	11	Dr. S. K. Vernwal	IV	Substitution Reactions	Orientation
16/09/2022	14	Abhinav Tripathi	III	Preparation , structure and bonding	S ₄ N ₂
	CT	Dr. S. K. Vernwal	CT	Class Teaching	
19/09/2022	16	Dr. R. Sahay	I	Molecular Symmetry	Orthogonality , Character table
	16	Dr. R. Sahay	II	Quantum Mechanical treatment	Energy level of a rigid rotor
20/09/2022	17	Dr. R. Sahay	I	Molecular Symmetry	Character tables
	17	Dr. R. Sahay	II	Quantum Mechanical treatment	Rigid rotor , Selection rule
21/09/2022	18	Dr. R. Sahay	I	Molecular Symmetry	Reducible representation and Irreducible representation
	18	Dr. R. Sahay	II	Quantum Mechanical treatment	A non rigid rotor
22/09/2022	15	Abhinav Tripathi	III	Preparation , structure and bonding	Bonding in borane anion
	12	Priyanka Mishra	IV	Elimination Reactions	E1CB and E2 reactions
23/09/2022	16	Abhinav Tripathi	III	Structure and bonding of borane anions	Structure of borane anions
	13	Dr. S. K. Vernwal	IV	Substitution Reactions	Ipso substitution, Ortho-para ratio
24/09/2022	CT	Abhinav Tripathi	CT	Class Teaching	
	14	Dr. S. K. Vernwal	IV	Substitution Reactions	Aromatic nucleophilic substitution (ArSN)
26/09/2022	19	Dr. R. Sahay	I	Molecular Symmetry	Reducible representation and Irreducible representation
	19	Dr. R. Sahay	II	Schrodinger equation for H-atom	Transformation of coordinates
27/09/2022	20	Dr. R. Sahay	I	Molecular Symmetry	Groups , subgroup and classes
	20	Dr. R. Sahay	II	Schrodinger equation for H-atom	Separation of Variables
28/09/2022	21	Dr. R. Sahay	I	Molecular Symmetry	Groups , subgroup and classes
	21	Dr. R. Sahay	II	Schrodinger equation for H-atom	Separation of Variables
29/09/2022	17	Abhinav Tripathi	III	Structure and bonding of borane anions	Structure of borane anions
	15	Dr. S. K. Vernwal	IV	Substitution Reactions	Addition- elimination mechanism
30/09/2022	18	Abhinav Tripathi	III	Classification of structure of silicates	Silicates
	16	Dr. S. K. Vernwal	IV	Substitution Reactions	Elimination–addition (benzyne) mechanism
01/10/2022	19	Abhinav Tripathi	III	Classification of structure of silicates	Classification of silicates

	ME	Priyanka Mishra	ME	Monthly Evaluation	
07/10/2022	22	Dr. R. Sahay	I	Molecular Vibrations	Symmetry of normal vibration
	22	Dr. R. Sahay	II	Schrodinger equation for H-atom	Separation of Variables
08/10/2022	23	Dr. R. Sahay	I	Molecular Vibrations	Determination of normal mode by Internal and Cartesian coordinate methods
	23	Dr. R. Sahay	II	Schrodinger equation for H-atom	Separation of Variables
10/10/2022	24	Dr. R. Sahay	I	Molecular Vibrations	Determination of normal mode by Internal and Cartesian coordinate methods
	24	Dr. R. Sahay	II	Schrodinger equation for H-atom	Separation of R, Theta, Phi
11/10/2022	20	Abhinav Tripathi	III	Classification of structure of silicates	Structure of silicates
	17	Dr. S. K. Vernwal	IV	Substitution Reactions	Effect of structure of substrate, nucleophile and leaving group on ArSN reaction
12/10/2022	21	Abhinav Tripathi	III	Classification of structure of silicates	3D silicates
	18	Dr. S. K. Vernwal	IV	Substitution Reactions	Aliphatic nucleophilic substitution reactions, Mechanism and stereochemistry of SN1 reactions
13/10/2022	CT	Abhinav Tripathi	CT	Class Teaching	
	19	Dr. S. K. Vernwal	IV	Substitution Reactions	Mechanism and stereochemistry of SN2 reactions, SN ⁺ and SN ⁱ reaction
14/10/2022	25	Dr. R. Sahay	I	Molecular Vibrations	Determination of normal mode by Internal and Cartesian coordinate methods
	25	Dr. R. Sahay	II	Schrodinger equation for H-atom	Separation of R, THEETA, FAI
15/10/2022	26	Dr. R. Sahay	I	Molecular Vibrations	Mixing of Internal coordinate in normal mode
	26	Dr. R. Sahay	II	Schrodinger equation for H-atom	Spherical harmonics, electron spin
17/10/2022	27	Dr. R. Sahay	I	Molecular Vibrations	Mixing of Internal coordinate in normal mode
	27	Dr. R. Sahay	II	Many electron atoms	Anti symmetry
18/10/2022	22	Abhinav Tripathi	III	Synthesis and structure of	Polyions of Sn
	20	Dr. S. K. Vernwal	IV	Substitution Reactions	Role of substrate structure, nucleophiles, leaving group and solvent on SN reactions
19/10/2022	23	Abhinav Tripathi	III	Synthesis and structure of	Polyions of Pb
	21	Priyanka Mishra	IV	Addition reaction	Mechanism and stereochemistry of addition of halogen
20/10/2022	24	Abhinav Tripathi	III	Synthesis and structure of	Poly ions of Sb
	ME	Dr. S. K. Vernwal	ME	Monthly Evaluation	
28/10/2022	28	Dr. R. Sahay	I	Molecular Vibrations	Mixing of Internal coordinate in in normal mode
	28	Dr. R. Sahay	II	Many electron atoms	Many electron atoms
29/10/2022	29	Abhinav Tripathi	I	Molecular Vibrations	Selection rule for IR and Raman spectroscopy

	29	Dr. R. Sahay	II	Many electron atoms	Anti symmetry and Slater determination
01/11/2022	30	Abhinav Tripathi	I	Molecular Vibrations	Normal coordinate analysis of water molecules and its IR and Raman activity
	29	Dr. R. Sahay	II	Many electron atoms	Slater determination for the wave function
02/11/2022	25	Abhinav Tripathi	III	Synthesis and structure of	Polyions of Mg
	22	Priyanka Mishra	IV	Addition reaction	Addition of halogen acids
03/11/2022	26	Abhinav Tripathi	III	Synthesis and structure of	Definition and classification of organometallic compounds
	23	Dr. S. K. Vernwal	IV	Substitution Reactions	Nucleophilic substitution at bridged head carbon atom
05/11/2022	CT	Abhinav Tripathi	CT		
	24	Priyanka Mishra	IV	Addition Reactions	Addition of halogen acids
07/11/2022	31	Abhinav Tripathi	I	Molecular Vibrations	Normal coordinate analysis of water molecules and its IR and Raman activity
	30	Dr. R. Sahay	II	Many electron atoms	Wave function of ground state of multi electron atoms
09/11/2022	32	Abhinav Tripathi	I	Molecular Vibrations	Normal coordinate analysis of water molecules and its IR and Raman activity
	31	Dr. R. Sahay	II	Many electron atoms	Wave function of ground state of multi electron atoms
10/11/2022	33	Abhinav Tripathi	I	Molecular Vibrations	Normal coordinate analysis of Ammonia molecules and its IR and Raman activity
	32	Dr. R. Sahay	II	Many electron atoms	Self constant , Approximation (Hartree's theory)
11/11/2022	27	Abhinav Tripathi	III	Organometallic Compounds	Organometallic compounds, metal carbonyls bond
	25	Priyanka Mishra	IV	Addition Reactions	1,2 –Hydroxylation , epoxidation
12/11/2022	28	Abhinav Tripathi	III	Organometallic Compounds	Organometallic compounds, metal carbonyls bond
	26	Dr. S. K. Vernwal	IV	Substitution Reactions	Neighbouring group participation (NGP)
14/11/2022	29	Abhinav Tripathi	III	Alkyl and aryls	Organolithium compounds
	CT	Priyanka Mishra	CT	Class Teaching	
15/11/2022	34	Abhinav Tripathi	I	Molecular Vibrations	Normal coordinate analysis of Ammonia molecules and its IR and Raman activity
	33	Dr. R. Sahay	II	Many electron atoms	Self-constant , Approximation (Hartree's theory)
*Extra	*35	Abhinav Tripathi	I	Molecular Vibrations	Normal coordinate analysis of Ammonia molecules and its IR and Raman activity
	*34	Dr. R. Sahay	II	Many electron atoms	Self-constant , Approximation (Hartree's theory)
	*36	Abhinav Tripathi	I	Molecular Vibrations	Normal coordinate analysis of Ammonia molecules and its IR and Raman activity
	*35	Dr. R. Sahay	II	Approximation methods	Variation method
	*30	Abhinav Tripathi	III	Alkyl and aryls	Organoberyllium compound

	*27	Dr. S. K. Vernwal	IV	Substitution Reactions	Participation of sigma, pi-bonds, halogen, N-atom and phenyl ring as NGP.
	*28	Dr. S. K. Vernwal	IV	Substitution Reactions	Participation of sigma, pi-bonds, halogen, N-atom and phenyl ring as NGP.
	*29	Priyanka Mishra	IV	Addition Reactions	Hydroboration of alkene
	*31	Abhinav Tripathi	III	Alkyl and aryls	Organo -aluminium compounds, Organo- tin compounds
	*30	Priyanka Mishra	IV	Addition Reactions	Mechanism of addition of Grignard reagent
	*31	Priyanka Mishra	IV	Addition Reactions	Organo -Zn and organo- Li saturated and unsaturated compound
	*37	Abhinav Tripathi	I	Molecular Vibrations	Normal coordinate analysis of Ammonia molecules and its IR and Raman activity
	*36	Dr. R. Sahay	II	Approximation methods	Variation method
	*38	Abhinav Tripathi	I	Molecular Vibrations	Numerical problems
	*37	Dr. R. Sahay	II	Approximation methods	Variation method
	*39	Abhinav Tripathi	I	Molecular Vibrations	Numerical problems
	*38	Dr. R. Sahay	II	Approximation methods	Numerical problems & Solutions
	*32	Abhinav Tripathi	III	Alkyl and aryls	Organo- tin compounds
	*32	Priyanka Mishra	IV	Addition Reactions	Organo- Li saturated and unsaturated nitriles
	*33	AbhinavTripathi	III	Alkyl and aryls	Problems & Solutions
	*39	Dr. R. Sahay	II	Approximation methods	Numerical problems & Solutions