RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2019-20 (Even Semester)

Class and Section: M.Sc Chemistry previous

Subject: Organic Chemistry

Name of the Faculty : Narender Saini

Week	Lecture	Date	Topics
1	1	16-Jan-20	Introduction of polymers. And classify them
	2	17-Jan-20	Classification of polymers by morphological and elastomeric properties
2	3	20-Jan-20	Classification of polymers by thermoplastic and thermosetting properties
	4	21-Jan-20	Classification of polymers by emulsion and suspension
	5	23-Jan-20	Structure of aliphatic hydrocarbon polymers
	6	24-Jan-20	Structure of aromatic hydrocarbon polymers
3	7	27-Jan-20	Structure and applications of polysaccharides polymers
	8	28-Jan-20	Structure and applications of polyamides
	9	30-Jan-20	Structure and applications of phenol formaldehyde resin
	10	31-Jan-20	Structure and applications of polyester and polyurethane
4	11	3-Feb-20	Structure and applications of silicon and glass resin
	12	4-Feb-20	Structure and applications of polyphosphazenes
	13	6-Feb-20	Applications of polymers on the basis of adhesive and elastomeric nature
	14	7-Feb-20	Application of polymers on the basis of membrane,
5	15	10-Feb-20	Application on agriculture and mulch film
	16	11-Feb-20	Introduction to polymer structure
	17	13-Feb-20	Synthesis of different class of polymer eg condensation polymer
	18	14-Feb-20	Free radical polymer, coordination polymers
6			1st Class Test
7	19	24-Feb-20	Mechanisms of polymerization by cationic and anionic method
	20	25-Feb-20	Free radical and coordination catalysis
	21	27-Feb-20	Synthesis of polymers by radical, emulsion
	22	28-Feb-20	Synthesis of polymers by suspension and ionic mechanism
8	23	2-Mar-20	Copolymer functionalisation of synthetic hydroboration by chemical method
	24	3-Mar-20	Natural polymer (cellulose, lignin) functionalisation
	25	5-Mar-20	Cross linking of polymers
	26	6-Mar-20	Stereochemistry of polymers
9	27	9-Mar-20	Cis trans rubber structures and applications
	28	12-Mar-20	Polymethylene methacrylate polymer structure and applications
	29	13-Mar-20	Revision of unit 1,2
10			2nd Class Test
11	30	23-Mar-20	Natural polymer cellulose. Starch
	31	24-Mar-20	Glactomannans, structure and applications
	32	26-Mar-20	Xanthan gum, structure and applications
	33	27-Mar-20	Alginic acid structure and applications
12	34	30-Mar-20	Lignin structure and applications
	35	31-Mar-20	Biodegradable polymers
	36	3-Apr-20	Polyvinyl alcohol application and structure
13	37	6-Apr-20	Poly lactic acid structure and applications
	38	7-Apr-20	Cellulose ester structure and applications
	39	9-Apr-20	Applications of biodegradable polymers
	40	10-Apr-20	Revision of unit 1
14	41	13-Apr-20	Revision of unit 2
	42	14-Apr-20	Revision of unit 3
	43	16-Apr-20	Revision of unit 4
	44	17-Apr-20	Problem session
16			Final Sessional Test
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RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2019-20(Even Semester)

Class and Section: (MSc.Chem.) - 2nd Sem.

SUBJECT:Communication skills and Personality Development

Name of the Faculty : Mr. Sushil Kumar

	Lecture	Date	Topics
	1	22-Jan-20	Introduction to syllabus and scheme of examination
	2	29-Jan-20	Unit 1 half complete
	3	05-Feb-20	Unit 1 complete
	4	12-Feb-20	Doubt session Unit 2 Introduction
	5	19-Feb-20	**UT1**
	6	26-Feb-20	Unit 2 half complete
	7	04-Mar-20	Unit 2 complete
	8	11-Mar-20	Doubt session and Unit 3 introduction
	9	18-Mar-20	Unit 3 half complete
	10	25-Mar-20	**UT2**
	11	01-Apr-20	Unit 3 complete
	12	08-Apr-20	Unit 4 complete
	13	15-Apr-20	Revision
	20th - 24th April 20		Final Sessional Test

RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2019-20 (Even Semester)

Class and Section: M.Sc.(P) 2nd Sem

Subject: Inorganic Chemistry

Name of the Faculty : Rao Shamsher

Week	Lecture	Date	Topics
1	1	16-Jan-20	Introduction to syllabus, Scheme of exam and Learning
	2	17-Jan-20	Historical background of Organometallic Chemistry
2	3	20-Jan-20	Valence electron count (16/18 electron rules), Total electron
	4	21-Jan-20	Compliance and violation of the 18 electron rule
	5	23-Jan-20	Metal Carbonyls – Structure, bonding and infrared
	6	24-Jan-20	Metal Carbonyls – Structure, bonding and infrared
3	7	27-Jan-20	bonding modes of CO, symmetry of metal carbonyls
	8	28-Jan-20	synthesis-and reactivity of metal carbonyls
	9	30-Jan-20	substituted metal carbonyls and related compounds
	10	31-Jan-20	Synthesis, bonding, structure and important reactions of
4	11	3-Feb-20	dinitrogen complexes and tertiary phosphine and N-
	12	4-Feb-20	synthesis and important reactions of carbonyl hydrides
	13	6-Feb-20	Unit-2 Types of M-C bonds: Alkenes and Alkynes as ligands-
	14	7-Feb-20	bonding and important reactions of metal bound alkenes and
5	15	10-Feb-20	concept of Umploung
	16	11-Feb-20	Complexes with M-C double and triple bonds- synthesis
	17	13-Feb-20	bonding and important reactions of carbenes and carbynes
	18	14-Feb-20	Synthesis and reactivity of σ bonded metal-alkyls and η1-aryl
6			1st Class Test
7	23	24-Feb-20	Unit-IIICharacteristic reactions of organometallic complexes:
	24	25-Feb-20	**1st Assignment/** Characteristic reactions of organometallic
	25	27-Feb-20	Catalytic Hydrogenation of alkenes, Hydrocyanation
	26	28-Feb-20	Hydrosilylation, Hydroformylation, Methanol Carbonylation
8	27	2-Mar-20	Olefin Oxidation- Monsanto process, Cativa and Wacker
	28	3-Mar-20	Olefin polymerization, Metallocene based and Post-
	29	5-Mar-20	Olefin polymerization, Metallocene based and Post-
	30	6-Mar-20	Halide clusters [Re2X8]2-, Re3X9 and Carboxylate clusters-
9	31	9-Mar-20	Low nuclearity metal carbonyl clusters
	32	12-Mar-20	High nuclearity carbonyl clusters
	33	13-Mar-20	capping rule, Mingo's rule
10			2nd Class Test
11	38	23-Mar-20	Carbide clusters,
	39	24-Mar-20	Isolobal analogy
	40	26-Mar-20	Main Group Clusters- Structure and bonding in the closo,
	41	27-Mar-20	**2nd Assignment** / styx notation
12	42	30-Mar-20	Wade-Mingos and Jemmis electron counting rule
	43	31-Mar-20	Clusters having interstitial main group elements
	44	3-Apr-20	cubane clusters and naked or Zintl clusters
13	45	6-Apr-20	cubane clusters and naked or Zintl clusters
	46	7-Apr-20	Isolobal relationships between main-group and transition
	47	9-Apr-20	Isolobal relationships between main-group and transition
	48	10-Apr-20	Revision of Section A
14	49	13-Apr-20	Revision of Section B
	50	14-Apr-20	Revision of Section C
	51	16-Apr-20	Revision of Section C
	52	17-Apr-20	Revision of Section D
15			Final Sessional Test
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RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2019-20 (Even Semester)

M.sc. prev

Subject: physical chemistry

Name of the Faculty : Gajal

Week	Date	lecture	Topics
1	20/01/2020		introduction of syllabus
	21/01/2020		statistical mechanics introduction different terms which are used in statistical mechanics
	22/01/2020		Maxwell Boltzmann distribution law
	24/01/2020		calculation of Alpha Beta constants
2	27/01/2020		partition function definition and its types
	28/01/2020		Bose Einstein statistics
	29/01/2020		derivation of Bose Einstein statistics
	31/01/2020		fermi dirac statistics
3	03/02/2020		derivation of fermi dirac statistics
	04/02/2020		comparison of three statistics
	05/02/2020		concept of microstate, microstate, thermodynamics probability , most probable distribution
	07/02/2020		concept of partition function and its significance
4	10/02/2020		molar and atomic partition function
	11/02/2020		third law of thermodynamics, Nernst heat theorem
	12/02/2020		concept of phase , component and degree of freedom
	14/02/2020		Gibbs phase rule, clausius claperyon equation
5	17/02/2020		applications of clausius claperyon equation
	18/02/2020		derivation of phase rule
	19/02/2020		rotational, vibrational. translation partition function
	21/02/2020		derivation of partition functions
6			1st Class Test
7	02/03/2020		phase diagram explanation of H2O system
	03/03/2020		sulphur system
	04/03/2020		carbon dioxide system
	06/03/2020		phase diagram of two component system
8	09/03/2020		eutectic systems and calculations of eutectic point
	10/03/2020		congruent and incongruent melting points
	11/03/2020		description of different types of systems
	13/03/2020		brief introduction of chemical dynamics
9	16/03/2020		debye smouluchowski reaction
	17/03/2020		influence of pressure , ionic strength
	18/03/2020		influence of solvent on a reaction rate
	20/03/2020		salt effect
10			2nd Class Test
11	30/03/2020		kinetics of catalytic reactions
	31/03/2020		acid base catalysis
	01/04/2020		engyme catalysis
	03/04/2020		Michaelis menton treatment
12	06/04/2020		evaluation of Michael's constant
	07/04/2020		competitive and noncompetitive inhibition
	08/04/2020		heterogeneous catalysis
	10/04/2020		brief introduction of quantum mechanics
13	13/04/2020		angular momentum introduction
	14/04/2020		schrodinger wave equation of simple harmonic oscillator
	15/04/2020		schrodinger wave equation of rigid rotor
	17/04/2020		commutation relation and its applications
14			3rd class test
15	27/04/2020		
	28/04/2020		
	29/04/2020		
	30/04/2020		
16			final sessional
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