RPS Degree College, Balana (Mahendergarh)

Class and Section: M.Sc Organic
Subject- Organic II
Name of the Faculty : Dr. K.C. Rout

Week	Lecture	Date	Topics
1	1	20-Jan-20	Introduction of syllabus.
	2	21-Jan-20	Terpenoids classification
2	3	27-Jan-20	structure elucidation of citral and farnesol
3	4	28-Jan-20	zinziberene
	5	03-Feb-20	santonin
4	6	04-Feb-20	cadenine
	7	10-Feb-20	camphor
5	8	11-Feb-20	abetic acid
	9	17-Feb-20	biogenetic patway
6	**10.**	**18-Feb-20**	1st Class Test
7	11	24-Feb-20	alkaloids introduction
	12	25-Feb-20	morphine
8	13	02-Mar-20	papaverine
	14	03-Mar-20	nicotene
9	15	09-Mar-20	reserpine
	16	10-Mar-20	Holiday.
10	**17.**	**16-Mar-20**	2nd Class Test
11	18	17-Mar-20	steroids and hormones
	19	23-Mar-20	cholesterol
12	20	24-Mar-20	bile acid
	21	30-Mar-20	testosterone
13	22	31-Mar-20	progesterone and non steroidal hormones,
	23	06-Apr-20	antibioticsand peg
14			revisin of syllabus.
15			
16			Final Sessional Test
17			

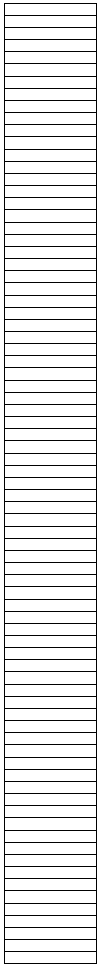
Lesson Plan

Name of the Assistant/ Associate Professor……. Mr Muhammad Mustafa

Class and Section:……………………………… M.Sc (F) Organic specialization paper3

Subject:………………………………………… Chemistry

Week		Topics
1	Day 1	introduction
	Day 2	preparation of N-Butyllithium
	Day 3	properties of Butyllithium
	Day 4	applications of Butyllithium
	Day 5	preparation of Grignard reagent
	Day 6	properties of Grignard reagent
		Sunday
2	Day 7	applications of Grignard reagent
	Day 8	preparation of organochromium compounds
	Day 9	properties of organochromium compounds
	Day 10	applications of organochromium compounds
	Day 11	preparation of Dialkyl copper lithium
	Day 12	properties of Dialkyl copper lithium
		Sunday
3	Day 13	applications of Dialkyl copper lithium
	Day 14	preparation of Pentacarbonyl iron
	Day 15	properties of Pentacarbonyl iron
	Day 16	applications of Pentacarbonyl iron
	Day 17	preparation of Tetra carbonyl nickel
	Day 18	properties of Tetra carbonyl nickel
		Sunday
4		VasantPanchami
	Day 19	applications of tetra carbonyl nickel
		Sir Chhotu Ram Jayanti
	Day 20	preparation of octacarbonyl dicobalt
		Republic Day
	Day 21	properties of octacarbonyl dicobalt
		Sunday
5	Day 22	applications of octacarbonyl dicobalt
	Day 23	preparation of alkene palladium complexes
	Day 24	properties of alkene palladium complexes
1-Feb	Day 25	applications of alkene palladium complexes
	Day 26	preparation, properties, application of Wilkinsons catalyst
	Day 27	class test
		Sunday
2	Day 28	preparation, properties, applications of Methyl triisopropoxy titanium
	Day 29	preparation, properties, applicaions of Tri-n-butyl tin hydride
	Day 30	preparation, properties, applications of Trimethyl silyl iodide
	Day 31	preparation, properties, applications of Diborane
	Day 32	preparation and applications of DCC
		preparation and applications of 1,3- Dithianes
		Sunday
3	Day 33	preparation and applications of polyphosphoric acid and diazomethane
		MahaShivratri
	Day 34	preparation and applications of ethyl diaazoacetate and Boron Trifluoride
	Day 35	preparation and applications of Trifluoro acetic acid
	Day 36	preparation and applications of cuprous chloride
	Day 37	preparation and applications of N-bromosuccinamide
		Sunday
4	Day 38	Mont-K-10 and KSF (clays), Phase Transfer catalysis
	Day 39	preparation and applications of Leadtetraacetlate acetate
	Day 40	preparation and applications of Osmium tetraoxide
	Day 41	preparation and applications of Selenium dioxide and potassium permaganate
	Day 42	preparation and applications of Fenton's reagent and ozone
	Day 43	preparation and applications of periodic acid and chromium oxide
		Sunday
5	Day 44	preparation and applications of thallium nitrate
	Day 45	reduction by catalytic hydrogenation and lithium aluminium hydride
	Day 46	reduction by sodium boron hydride and sodamide
1-Mar		Guru Ravidas Birthday
		Holi
	Day 47	reduction by zinc dust
		Sunday
2	Day 48	reduction by sodium liquid liquid ammonia
	Day 49	introduction of General mechanism of name reactions
	Day 50	nature of migration and migratory aptitude
	Day 51	pinacol-pinaclone rearrangement
	Day 52	wagner-Merrwein rearrangement
	Day 53	Demjanov rearrangement
		Sunday
3	Day 54	Benzil-Benzilic acid rearrangement
	Day 55	Favorskii reaction
	Day 56	Amdt-Eistert synthesis
	Day 57	Neber reaction
	Day 58	Beckmann rearrangement
	Day 59	Hofman rearrangment
		Sunday
4	Day 60	Curtius rearrangment
	Day 61	Schmidt reaction
	Day 62	Baeyer-Villiger reaction
	Day 63	Shapiro reaction
		ShaheediDiwas of Bhagat Singh, Rajguru & Sukhdev
	Day 64	revision
		Sunday/ Ram Navami
5	Day 65	revision
	Day 66	revision
	Day 67	revision
		MahavirJayanti
	Day 68	revision
	Day 69	revision
1-Apr		Sunday
	Day 70	revision
	Day 71	revison
	Day 72	revison
	Day 73	revision
	Day 74	revision
	Day 75	revision
		Sunday
2	Day 76	Final test



RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2019-20 (Even Semester)

Class and Section: M.Sc.(F) organic

Subject: pericyclic and photochemistry

Name of the Faculty : Narender Saini

Week	Lecture	Date	Topics
1	1	16-Jan-20	Photochemistry introduction
	2	17-Jan-20	**Photochemical Reactions:** Interaction of electromagnetic radiation with matter,
	3	17-Jan-20	types of excitations, fate of excited molecule,
2	4	21-Jan-20	quantum yield, transfer of excitation energy,
	5	21-Jan-20	actinometry.
	6	22-Jan-20	**Photochemistry of Alkenes:** Intramolecular reactions of the olefinic bond
	7	23-Jan-20	geometrical isomerism,
	8	23-Jan-20	, cyclisation reactions,
	9	24-Jan-20	, rearrangement of 1,4 and 1,5 – dienes
	10	24-Jan-20	**Photochemistry of Carbonyl Compounds**
3	11	28-Jan-20	Intramolecular reactions of carbonyl compounds,
	12	28-Jan-20	saturated, cyclic, acyclic, compounds
	13	29-Jan-20	and α, β unsaturated compounds.
	14	30-Jan-20	Cyclohexadienones.compounds
	15	30-Jan-20	Intermolecular cycloaddition reactions
	16	31-Jan-20	dimerisations and oxetane formation
	17	31-Jan-20	**Photochemistry of Aromatic Compounds**
4	18	4-Feb-20	Isomerisations, additions and substitutions
	19	4-Feb-20	**Miscellaneous Photochemical Reactions**
	20	5-Feb-20	Photo-Fries reactions of anilides
	21	6-Feb-20	Photo-Fries rearrangement
	22	6-Feb-20	Barton reaction
	23	7-Feb-20	. Singlet molecular oxygen reactions
	24	7-Feb-20	Photodegradation of polymers
5	25	11-Feb-20	**Free Radicals:** Free radicals stability
	26	11-Feb-20	generation and detection
	27	12-Feb-20	Types of free radical reactions
	28	13-Feb-20	free radicals substitution at an aromatic substrate
	29	13-Feb-20	revision of photochemistry and problems
	30	14-Feb-20	**Pericyclic Reactions:**
	31	14-Feb-20	**. Frontier orbitals of ethylene**
6			1st Class Test
7	32	25-Feb-20	1,3-butadiene system
	33	25-Feb-20	1,3,5-hexatriene and allyl system
	34	26-Feb-20	**Classification of pericyclic reactions**
	35	27-Feb-20	Woodward – Hoffmann correlation diagrams
	36	27-Feb-20	FMO Approach
	37	28-Feb-20	PMO approach.
	38	28-Feb-20	Electrocyclic reactions
8	39	3-Mar-20	conrotatory and disrotatory motions
	40	3-Mar-20	, 4n, 4n+2 and allyl systems
	41	4-Mar-20	Cycloadditions reactions
	42	5-Mar-20	antarafacial addition
	43	5-Mar-20	suprafacial additions
	44	6-Mar-20	, 4n pi systems
	45	6-Mar-20	4n+2 pi systems
9	46	11-Mar-20	Sigmatropic rearrangements
	47	12-Mar-20	suprafacial and antarafacial shifts of H
	48	12-Mar-20	sigmatropic shifts involving carbon moieties
	49	13-Mar-20	sigmatropic shifts involving carbon moieties
	50	13-Mar-20	3,3-sigmatropic rearrangements
10			2nd Class Test
11	51	24-Mar-20	3,3-sigmatropic rearrangements
	52	24-Mar-20	**5,5-sigmatropic rearrangements**
	53	25-Mar-20	5,5-sigmatropic rearrangements
	54	26-Mar-20	Claisen rearrangements
	55	26-Mar-20	Cope rearrangements
	56	27-Mar-20	Stereochemistry introduction
	57	27-Mar-20	effect of conformation on reactivity of acycliccompounds.
12	58	31-Mar-20	Barrier to ring inversion
	59	31-Mar-20	Stereochemistry of nitrogen containing compounds
	60	1-Apr-20	strain and their consequences in small ring
	61	3-Mar-20	heterocycles stereochemistry
	62	3-Apr-20	conformation of six membered heterocyles
13	63	7-Apr-20	Conformational analysis of large membered rings
	64	7-Apr-20	Conformational analysis of large membered rings
	65	8-Apr-20	Conformational analysis of medium membered rings
	66	9-Apr-20	Conformational analysis of medium membered rings
	64	9-Apr-20	trans annular reactions,
	67	10-Apr-20	conformational analysis of cyclohexanone
	68	10-Apr-20	conformational analysis of cyclohexanone
14	69	14-Apr-20	
	70	14-Apr-20	pyramidal inversion
	71	15-Apr-20	1,3-diaxial interactions
	72	16-Apr-20	revision section 1
	73	16-Apr-20	revision section 2
	74	17-Apr-20	revision section 3
	75	17-Apr-20	revision section 4
16			Final Sessional Test
17			

e, Balana (Mahendergarh)

Class and Section: MSc (F) Inorganic Chemistry electroanalytical techniques
Subject- Inorganic Chemistry
Name of the Faculty : Dr. Prashant Kumar

Week	Lecture	Date	Topics
1	1	20-Jan-20	Introduction of syllabus.
	2	21-Jan-20	Electrochemical and chemical reaction basic principal, residual current, limiting current, saturated calomel electrode, dropping mercury electrode
2	3	27-Jan-20	Ilkovic equation, koutecky equation for diffusion current
3	4	28-Jan-20	Polarography waves, half wave potential
	5	03-Feb-20	Oxygen interference,maxima, function of supporting electrolyte
4	6	04-Feb-20	Determination of stability constants of complex
	7	10-Feb-20	D. C. polarography, catalytic hydrogen wave
5	8	11-Feb-20	Principles of amperometric titration
	9	17-Feb-20	Revision
6	**18-Feb-20**		1st Class Test
7	11	24-Feb-20	Types of titration curves, apparatus and techniques
	12	25-Feb-20	Hanging mercury drop electrode
8	13	02-Mar-20	Rotating dropping mercury electrode
	14	03-Mar-20	Platinum electrode, gold electrode, carbon paste electrode
9	15	09-Mar-20	Glaasy carbon electrode and graphite electrode
	16	10-Mar-20	Holiday.
10	**16-Mar-20**		2nd Class Test
11	18	17-Mar-20	AC polarography, voltametry, square wave polarography
	19	23-Mar-20	Normal and differential pulse polarography, chronopotentiometry and coulometry
12	20	24-Mar-20	Theory of anodic stripping voltametry
	21	30-Mar-20	Concentration process, rest period, stripping processes
13	22	31-Mar-20	Cathodic stripping voltametry, anodic deposition, Cathodic redissolution,
	23	06-Apr-20	Theories of ion selective electrodes
14			revision of syllabus.
15			
16			Final Sessional Test

RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2019-20 (Even Semester)

Class and Section: M.Sc. (F) ,Physical specialization

Subject: Physical special-4

Teacher Name: Ms. Vandana

Week	Lecture	Date	Topics
1	1	16-Jan-20	Introduction of syllabus
	2	17-Jan-20	classification of polymer and polymerization
	3	20-Jan-20	condensation and addition polymer
	4	21-Jan-20	Kinetics of condensation polymerization
	5	22-Jan-20	size distribution in linear condensation polymers
	6	23-Jan-20	molecular size control and degree of polymerization
	7	24-Jan-20	mechanism of Vinyl radical polymerization
2	8	27-Jan-20	molecular weight and its determination
	9	28-Jan-20	effect of temperature and pressure on chain polymerization
	10	29-Jan-20	stereochemistry of polymer chain
	11	30-Jan-20	stereoregular polymerization
	12	31-Jan-20	ionic polymerization
3	13	03-Feb-20	Kinetics of cationic polymerization
	14	04-Feb-20	Kinetics of anionic polymerization
	15	05-Feb-20	Kinetics of copolymerization
	16	06-Feb-20	criteria for polymer solubility
	17	07-Feb-20	mass number and mass average molecular weight
4	18	10-Feb-20	determination of molecular weight of polymer by osmo metry
	19	11-Feb-20	by viscometry
	20	12-Feb-20	by light scattering
	21	13-Feb-20	by sedimentation method
	22	14-Feb-20	chain configuration of polymer chains
5	23	17-Feb-20	statistical distribution of end-to-end dimensions
	24	18-Feb-20	statistical distribution of end-to-end dimensions
	25	19-Feb-20	influence of bond angle restriction
	26	20-Feb-20	radius of gyration
6	**21/02/2020**		1st Class Test
7	27	24-Feb-20	thermodynamics of biopolymer solutions
	28	25-Feb-20	thermodynamics of biopolymer solution
	29	26-Feb-20	free volume theory
	30	27-Feb-20	heat and free energy of mixing
	31	28-Feb-20	heat and free energy of mixing
	32	02-Mar-20	general principles of polarography
	33	03-Mar-20	limiting current diffusion current
	34	04-Mar-30	derivation of ilkovic equation
	35	05-Mar-20	consequences of alcove equation
	36	06-Mar-30	Koutecky equation for diffusion current
8	37	09-Mar-20	half wave potential and equation for reversible cathodic waves
	38	10-Mar-20	equation for reversible anodic and cathode anode waves
	39	11-Mar-20	analysis of reversible polarographic waves and factors affecting half wave potential
	40	12-Mar-20	reversible processes controlled by diffusion of complex ions
	41	13-Mar-20	reversible reduction of organic substances
9	42	16-Mar-20	an approximate treatment office Lo electrode process and rigorous treatment of a slow electrode processes
	43	17-Mar-20	reversible reduction of complexes
	44	18-Mar-20	polarography of organic substances
	45	19-Mar-20	polarography coulometry at constant potential
	46	20-Mar-20	determination of number of electrons analysis of the decrease in the limiting current
10	**23/03/2020**		2nd Class Test

11	48	25-Mar-20	maximum intrinsic efficiency
	49	26-Mar-20	actual efficiency and current potential relation In an electrochemical energy converter
	50	27-Mar-20	factors influencing the electrochemical energy conversion
	51	30-Mar-20	power output of an electrochemical energy converter
	52	31-Mar-20	fuel cells
	53	01-Apr-20	hydrogen oxygen fuel cell
	54	02-Apr-20	hydrocarbon air and natural gas fuel cell
	55	03-Apr-20	electricity storage density and energy density and power
12	56	06-Apr-40	desirable conditions for an ideal storer
	57	07-Apr-20	stories of electricity using lead acid battery
	58	08-Apr-20	dry cell
	59	09-Apr-20	silver zinc cell
	60	10-Apr-20	sodium sulphur cell
13	61	13-Apr-20	amperometric titrations
	62	14-Apr-20	determination of activation energy for an Irreversible electrode process
	63	15-Apr-20	determination of activation energy for an Irreversible electrode process
	64	16-Apr-20	revision
	65	17-Apr-20	revision
14			
16			Final Sessional Test
17			

RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2019-20 (Even Semester)

M.sc. final physical special paper V

Subject: physical chemistry

Name of the Faculty : Gajal

Week	date	lecture	Topics
1	20/01/2020		brief introduction of syllabus
	21/01/2020		introduction of quantum mechanics
	22/01/2020		angular momentum and angular momentum operators in cartesian coordinates
	23/01/2020		eigen functions and eigen values
	24/01/2020		commutation relation between angular momentum operators
2	27/01/2020		total orbital angular momentum
	28/01/2020		spin angular momentum
	29/01/2020		ladder operator
	30/01/2020		commutation relation between ladder operator and angular momentum operators
	31/01/2020		application of ladder operator
3	03/02/2020		introduction of statistical mechanics
	04/02/2020		free energy functions and partition function
	05/02/2020		calculations of equilibrium constant using partition functions
	06/02/2020		Bose einstein statistics
	07/02/2020		statistics of photon gas
4	10/02/2020		extreme gas degeneracy
	11/02/2020		fermi dirac statistics
	12/02/2020		specific heat of electron gas
	13/02/2020		energy of bosons and fermions
	14/02/2020		thermionic emission
5	17/02/2020		comparison of three statistics
	18/02/2020		differences between the three statistics
	19/02/2020		Maxwell boltzmann statistics
	20/02/2020		derivation of different partition functions
	21/02/2020		role of partition function in calculating equilibrium constant
6			1st Class Test
7	02/03/2020		huckel molecular orbital theory
	03/03/2020		linear and conjugated system
	04/03/2020		explanation of different applications of huckel molecular orbital theory
	05/03/2020		huckel determinant equation
	06/03/2020		calculation of resonance energy
8	09/03/2020		wave function of molecular orbital
	10/03/2020		molecular diagram of ethene molecule
	11/03/2020		allyl system
	12/03/2020		bitadiene
	13/03/2020		cyclobutadiene
9	16/03/2020		cyclopropenyl system
	17/03/2020		revision of systems
	18/03/2020		introduction of equilibrium
	19/03/2020		general theory of non equilibrium processes
	20/03/2020		entropy concept
10			2nd Class Test
11	30/03/2020		entropy production and entropy flow
	31/03/2020		thermodynamic criteria for non equilibrium states
	01/04/2020		entropy production in heat flow
	02/04/2020		energy production in mass flow , electric current
	03/04/2020		saxens relation
12	06/04/2020		onsagers reciprocity relation
	07/04/2020		electro kinetic phenomenon
	08/04/2020		theory of fluctuations
	09/04/2020		energy fluctuations in canonical ensemble
	10/04/2020		distribution function and fluctuations
13	13/04/2020		fluctuations of density and energy
	14/04/2020		revision
	15/04/2020		previous year's question paper discussion
	16/04/2020		discussion of question papers
	17/04/2020		
14			
15			
16			Final Sessional Test
17			