

## Lesson Plan

Name of the Assistant/ Associate Professor -Mr.Hitesh yadav

Class and Section:.....B.Sc (non medical)4<sup>th</sup>sem

Subject:.....OrganicChemistry.....

Week	Date	Topics
1		
	Day -1	Unit no. 1 <sup>st</sup> -Molecular vibrations, Hooke's law
	Day-2	selection rules, intensity and position of IR bands,
		Sunday
2		
	Day-3	measurement of IR spectrum, fingerprint region,
	Day-4	characteristic absorptions of various functional groups.
		Sunday
3		
	Day-5	interpretation of IR spectra of simple organic compounds.
	Day-6	Applications of IR spectroscopy in structure elucidation of simple organic compounds.
		Sunday
4		Vasant Panchami
		Sir Chhotu Ram Jayanti
		Republic Day
	Day-7	Unit no.2 -Structure and nomenclature of amines,
		Sunday
5		

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Name of the Assistant/ Associate Professor -Mr.Hitesh yadav

Class and Section:.....B.Sc (non medical)4<sup>th</sup>sem

Subject:.....OrganicChemistry.....

Week	Date	Topics
1		
	Day-8	physical properties. Separation of a mixture of primary, secondary and tertiary amines.
	Day-9	Structural features affecting basicity of amines.
		Sunday
2		
	Day-10	Preparation of alkyl and aryl amines (reduction of nitro compounds, nitriles, reductive amination of aldehydic and ketonic compounds.
		Maharshi Dayanand Saraswati Jayanti
		Sunday
3		
		Maha Shivratri
	Day-11	Gabrielphthalimide reaction, Hofmann bromamide reaction.
	Day-12	electrophilic aromatic substitution in aryl amines, reactions of amines with nitrous acid.
		Sunday
4		
	Day-13	Unit no.3- Mechanism of diazotisation, structure of benzene diazonium chloride.
	Day-14	Replacement of diazo group by H, OH, F, Cl, Br, I, NO <sub>2</sub> and CN groups.
		Sunday

5		

### Lesson Plan

Name of the Assistant/ Associate Professor -Mr.Hitesh yadav yadv

Class and Section:.....B.Sc (non medical)4<sup>th</sup>sem

Subject:.....OrganicChemistry.....

Week	Date	Topics
1		Guru Ravidas Birthday
		Holi
	Day-15	reduction of diazonium salts to hyrazines,
		Sunday
2		
	Day-16	coupling reaction and its synthetic application.
	Day-17	Preparation of nitro alkanes and nitro arenes and their chemical reactions.
		Sunday
3		
	Day-18	Mechanism of electrophilic substitution reactions in nitro arenes and their reductions in acidic, neutral and alkaline medium.
	Day-19	Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones.
		Sunday
4		
		Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev

	Day-20	synthesis of aldehydes from acid chlorides, advantage of oxidation of alcohols with chromium trioxide (Sarett reagent) pyridinium chlorochromate (PCC) and pyridinium dichromate.
		Sunday/ Ram Navami
5		
		Mahavir Jayanti
	Day-21	Physical properties. Comparison of reactivities of aldehydes and ketones.
Day-22	Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condensations.	

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Class and Section:.....B.Sc (non medical)4<sup>th</sup>sem

Subject:.....OrganicChemistry.....

Week	Date	Topics
1		Sunday
	Day-23	Condensation with ammonia and its derivatives. Wittig reaction. Mannich reaction.
	Day-24	Oxidation of aldehydes, Baeyer–Villiger oxidation of ketones.
	Sunday	
2		
	Day-25	Cannizzaro reaction. MPV, Clemmensen reduction.
		Dr Ambedkar Jayanti / Vaisakhi
	Sunday	
3		

		Parashurama Jayanti
	Day-26	Wolff-Kishner, $\text{LiAlH}_4$ and $\text{NaBH}_4$ reductions.
	Day-27	Revision of section A, and B
		Sunday
4		
	Day-28	Revision of section c, and D
	Day-29	Test of complete syllabus

## Lesson Plan

Name of the Assistant/ Associate Professor -Mr.Hitesh yadav

Class and Section: **B.Sc. (Honours) Mathematics, Semester-2**

Subject:.....Chemistry.....

Week	Date	Topics
1		
	Day -1	Section –A <b>Periodic Properties</b> , Atomic and ionic radii,
	Day -2	ionization energy, electron affinity and electronegativity – definition, trends in periodic table (in s & p block elements).
	Day -3	<b>s -Block Elements</b> - Comparative study of the elements including, diagonal relationships
	Day-4	salient features of hydrides (methods of preparation excluded).
		Sunday
2		
	Day -5	<b>p-Block Elements</b> - Emphasis on comparative study of properties of p-block elements (including diagonal relationship and excluding methods of preparation).
	Day -6	<b>Boron family (13<sup>th</sup> gp)</b> : - Diborane – properties and structure
	Day-7	Borazene – chemical properties and structure.
	Day-8	<b>Carbon Family (14<sup>th</sup> group)</b> - Allotropy of carbon,
		Sunday
3		
	Day -9	Catenation, p $\pi$ - d $\pi$ bonding (an idea),
	Day -10	carbides, fluorocarbons– general methods of preparations, properties and uses
	Day-11	<b>Nitrogen Family (15<sup>th</sup> group)</b> Oxides – structures of oxides of N,P.
	Day-12	oxyacids – structure and relative acid strengths of oxyacids of Nitrogen and phosphorus..
		Sunday
4		Vasant Panchami
		Sir Chhotu Ram Jayanti
	Day -13	<b>Oxygen Family (16<sup>th</sup> group)</b> Oxyacids of sulphur – structures and acidic strength
		Republic Day
	Day-14	<b>Halogen Family (17<sup>th</sup> group)</b> Basic properties of halogen,
		Sunday
5		

	Day -15	hydro and oxyacids of chlorine – structure and comparison of acid strength.

### Lesson Plan

Name of the Assistant/ Associate Professor -Mr.Hitesh yadav

Class and Section: **B.Sc. (Honours) Mathematics, Semester-2**

Subject:.....Chemistry.....

Week	Date	Topics
1		Revision of section 1
	Day -16	
	Day-17	Introduction of section 2.
	Day-18	<b>Section-II Kinetics</b> - Rate of reaction, rate equation,
		Sunday
2		
	Day -19	factors influencing the rate of a reaction – concentration, temperature, pressure, solvent, light, catalyst.
	Day -20	Order of a reaction, integrated rate expression for zero order,
	Day-21	first order, Half life period of a reaction.
		Maharshi Dayanand Saraswati Jayanti
		Sunday
3		
		Maha Shivratri
	Day -22	Methods of determination of order of reaction,
	Day -23	effect of temperature on the rate of reaction – Arrhenius equation
	Day-24	<b>Electrochemistry</b> - Electrolytic conduction, factors affecting electrolytic conduction,
	Day-25	Specific conductance, molar conductance, equivalent conductance and relation among them, their variation with concentration.
		Sunday
4		
	Day -26	Arrhenius theory of ionization, Ostwald's Dilution Law.
	Day -27	Debye - Huckel – Onsager's equation for strong electrolytes (elementary treatment only), Kohlrausch's Law,

	Day-28	calculation of molar ionic conductance and effect of viscosity temperature & pressure on it . Application of Kohlrausch's Law in calculation of conductance of weak electrolytes at infinite dilution.
	Day-29	Applications of conductivity measurements : determination of degree of dissociation, determination of $K_a$ of acids
		Sunday
5		
	Day -30	determination of solubility product of sparingly soluble salts , conductometric titrations .

### Lesson Plan

Name of the Assistant/ Associate Professor -Mr.Hitesh yadav yadv

Class and Section : **B.Sc. (Honours) Mathematics, Semester-2**

Subject:.....Chemistry.....

Week	Date	Topics
1		Guru Ravidas Birthday
		Holi
	Day-31	Definition of pH and $pK_a$ , Buffer solution, Buffer action, (elementary idea only) .
		Sunday
2		
	Day -32	<b>Alkenes</b> Nomenclature of alkenes , ,
	Day -33	mechanisms of dehydration of alcohols.
	Day-34	dehydrohalogenation of alkyl halides ,
	Day-35	The Saytzeff rule,
		Sunday
3		
	Day -36	Chemical reactions of alkenes — mechanisms involved in hydrogenation,
	Day -37	electrophilic and free radical additions reaction of alkene ,
	Day-38	Markownikoff's rule,



	Day-39	. <b>Arenes and Aromaticity</b> -Nomenclature of benzene derivatives :
		Sunday
4		
	Day -40	Aromatic nucleus and side chain.
	Day -41	Aromaticity: the Huckel rule, ,
		Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev
	Day-42	<b>Dienes and Alkynes</b> -Nomenclature
	Sunday/ Ram Navami	
5		
	Day -43	classificat ion of dienes : isolated, conjugated and cumulated dienes . ,
		Mahavir Jayanti
	Day-44	Chemical reactions — 1,2 and 1,4 additions reaction.
	Day-45	Diel s -Alder reaction,

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Name of the Assistant/ Associate Professor -Mr.Hitesh yadav yadv

Class and Section: : **B.Sc. (Honours) Mathematics, Semester-2**

Subject:.....Chemistry.....

Week	Date	Topics
1		Sunday
	Day -46	Nomenclature, structure and of alkynes .
	Day -47	bonding in alkynes
	Day-48	acidity of alkynes .
	Day-49	Mechani sm of elect rophi l ic and nucleophi l ic addi t ion react ions ,
		Sunday
2		
	Day -50	<b>Alkyl and Aryl Halides</b> Nomenclature and clas ses of alkyl hal ides ,
	Day -51	Mechani sms and s tereochemi s t ry of nucleophi l ic subs t i tut ion react ions of alkyl hal ides ,
	Day-52	S <sub>N</sub> 2 and S <sub>N</sub> 1 react ions .

		Dr Ambedkar Jayanti / Vaisakhi
		Sunday
3		
		Parashurama Jayanti
	Day -53	The addition-elimination and the elimination addition mechanisms of nucleophilic aromatic substitution reactions of aryl halides .
	Day-54	Relative reactivities of alkyl halides vs allyl , vinyl and aryl halides ..
	Day-55	Revision of section 1,2 and 3.
		Sunday
4		
	Day -56	Test of section 1
	Day -57	Test of section 2
	Day-58	Test of section 3
	Day-59	Test of complete syllabus

## Lesson Plan

Name of the Assistant/ Associate Professor -Mr.Hitesh yadav

Class and Section: **B.Sc. (Honours) Mathematics, Semester-4**

Subject:.....Chemistry.....

Week	Date	Topics
1		
	Day -1	<b>Section1-Non-aqueous Solvents</b> -Physical properties of a solvent,
	Day -2	types of solvents and their general characteristics,
	Day -3	reactions in non-aqueous solvents with reference to liquid NH <sub>3</sub> and liquid SO <sub>2</sub>
	Day-4	<b>Acids and Bases, HSAB Concept</b> Arrhenius, Bronsted – Lowry, the Lux – Flood, Solvent system
		Sunday
2		
	Day -5	Lewis concepts of acids & bases, relative strength of acids & bases,
	Day -6	Concept of Hard and Soft Acids & Bases.
	Day-7	<b>Chemistry of f – block elements Lanthanides-</b> Occurrence, Electronic structure,
	Day-8	oxidation states and ionic radii and lanthanide contraction.
		Sunday
3		
	Day -9	complex formation of lanthanide compounds.
	Day -10	<b>Actinides</b> General features and chemistry of actinides,
	Day-11	Comparison of properties of Lanthanides and Actinides and with transition elements.
	Day-12	Elementary idea about the transuranic elements.
		Sunday
4		Vasant Panchami
		Sir Chhotu Ram Jayanti
	Day -13	
		Republic Day
	Day-14	<b>Section- I I</b> <b>Thermodynamics</b> Third law of thermodynamics : Nernst heat theorem.
		Sunday
5		

	Day -15	Thermodynamic functions G,H,E,A & S. Criteria for thermodynamic equilibrium

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Class and Section: **B.Sc. (Honours) Mathematics, Semester-4**

Subject:.....Chemistry.....

Week	Date	Topics
1	Day -16	spontaneity of a process in terms of thermodynamic functions .
	Day-17	<b>Chemical Equilibrium</b> Equilibrium constant and free energy, concept of chemical potential ,
	Day-18	Thermodynamic derivation of law of chemical equilibrium.
		Sunday
2		
	Day -19	. Clapeyron equation and Clausius – Clapeyron equation its applications .
	Day -20	, <b>Electrochemistry</b> Electrolytic and Galvanic cells – reversible & Irreversible cells ,
	Day-21	conventional representation of electrochemical cells .
		Maharshi Dayanand Saraswati Jayanti
	Sunday	
3		
		Maha Shivratri
	Day -22	EMF of cell and its measurement ,
	Day -23	Weston standard cell , activity and activity coefficients .
	Day-24	Calculation of thermodynamic quantities of cell reaction ( $\Delta G$ , $\Delta H$ & $\Delta K$ ) .
	Day-25	Nernst equation,
		Sunday
4		
	Day -26	prediction of single electrode potential and EMF of cell .
	Day -27	Reference electrodes ; standard hydrogen electrode & calomel electrode standard electrode potential ,
	Day-28	sign convention, electrochemical series and its applications .

	Day-29	<b>Section- III</b> <b>Infrared (IR) absorption spectroscopy--Molecular vibrations ,</b>
		Sunday
5		
	Day -30	Hooke's law, selection rules

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Name of the Assistant/ Associate Professor -Mr.Hitesh yadav yadv

Class and Section : **B.Sc. (Honours) Mathematics, Semester-4**

Subject:.....Chemistry.....

Week	Date	Topics
1		Guru Ravidas Birthday
		Holi
	Day-31	intensity and position of IR bands , .
		Sunday
2		
	Day -32	measurement of IR spectrum
	Day -33	fingerprint region,
	Day-34	characteristic absorptions of various functional groups .
	Day-35	<b>Amines</b> -Structure and nomenclature of amines ,
	Sunday	
3		
	Day -36	physical properties of amines.
	Day -37	Separation of a mixture of primary, secondary and tertiary amines .
	Day-38	Structural features affecting basicity of amines . .
	Day-39	Gabriel -phthalimide reaction,
	Sunday	
4		

	Day -40	Hofmann bromamide reaction.
	Day -41	electrophilic aromatic substitution in aryl amines ,
		Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev
	Day-42	reactions of amines with nitrous acid.
		Sunday/ Ram Navami
5		
	Day -43	<b>Diazonium Salts</b> Mechanism of diazotisation,
		Mahavir Jayanti
	Day-44	structure of benzene diazonium chloride,
	Day-45	Replacement of diazo group by H, OH, F, Cl , Br , I, NO <sub>2</sub> and CN groups .

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Name of the Assistant/ Associate Professor -Mr.Hitesh yadav yadv

Class and Section: : **B.Sc. (Honours) Mathematics, Semester-4**

Subject:.....Chemistry.....

Week	Date	Topics
1		Sunday
	Day -46	<b>Aldehydes and Ketones</b> -Nomenclature and structure of the carbonyl group.
	Day -47	Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides,
	Day-48	advantage of oxidation of alcohols with chromium trioxide (Sarett reagent) pyridinium chlorochromate (PCC) and pyridinium dichromate.,.
	Day-49	Comparison of reactivities of aldehydes and ketones.
		Sunday
2		
	Day -50	Mechanism of nucleophilic additions to carbonyl group with particular emphasis on Benzoin.
	Day -51	aldol, condensations.
	Day-52	Condensation with ammonia and its derivatives.
		Dr Ambedkar Jayanti / Vaisakhi
		Sunday
3		

		Parashurama Jayanti
	Day -53	Wittig reaction.
	Day-54	Mannich reaction.
	Day-55	Revision of section 1,2 and 3.
		Sunday
4		
	Day -56	Test of section 1
	Day -57	Test of section 2
	Day-58	Test of section 3
	Day-59	Test of complete syllabus

## Lesson Plan

Name of the Assistant/ Associate Professor. Ms. Renu Sharma

Class and Section: Hons Chemistry 2<sup>nd</sup> Sem

Subject: Organic Chemistry

Week	Date	Topics
1	1-Jan-18	Nomenclature of alkenes, methods of formation, mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halides
	2-Jan-18	Regioselectivity in alcohol dehydration. The Saytzeff rule, Hofmann elimination, physical properties and relative stabilities of alkenes.
	3-Jan-18	Mechanisms involved in—Chemical reactions of alkenes hydrogenation, electrophilic and free radical additions.
	4-Jan-18	Markownikoff's rule, hydroboration–oxidation, oxymercurationreduction Epoxidation, ozonolysis, hydration.
	5-Jan-18	
	6-Jan-18	
	7-Jan-18	Sunday
2	8-Jan-18	Hydroxylat ion and oxidation with KMnO <sub>4</sub> ,polymerization of alkenes.
	9-Jan-18	Substitution at the allylic and vinylic positions of alkenes.
	10-Jan-18	Industrial applications of ethylene and propene.
	11-Jan-18	Coal tar distillation and coal tar chemicals
	12-Jan-18	
	13-Jan-18	
	14-Jan-18	Sunday
3	15-Jan-18	Petroleum origin , fractionation cracking, reforming.
	16-Jan-18	Aromatisation, petrochemicals, synthetic fuels, octane and cetane numbers.
	17-Jan-18	Antiknock additives, (UNIT-1 Complete) Methods of formation of cycloalkenes.
	18-Jan-18	Conformation and chemical r eactions of cycloalkenes.
	19-Jan-18	
	20-Jan-18	
	21-Jan-18	Sunday
4	22-Jan-18	Vasant Panchami
	23-Jan-18	Nomenclature and classification of dienes: isolated, conjugated and cumulated dienes. Structure of allenes and butadiene.
	24-Jan-18	Sir Chhotu Ram Jayanti
	25-Jan-18	Methods of 1,2 and 1,4—formation, polymerization. Chemical reactions additions, Diels-Alder reaction.
	26-Jan-18	Republic Day
	27-Jan-18	
	28-Jan-18	Sunday
5	29-Jan-18	Nomenclature, structure and bonding in alkynes. Methods of formation. Chemical reactions of alkynes.
	30-Jan-18	Acidity of alkynes. Mechanism of electrophilic and nucleophilic addition reactions, hydroboration-oxidation.
	31-Jan-18	Metal-ammonia reductions, oxidation and polymerization, Haworth synthesis of naphthalene.



## Lesson Plan

Name of the Assistant/ Associate Professor. Ms. Renu Sharma

Class and Section: Hons Chemistry 2<sup>nd</sup> Sem

Subject: Organic Chemistry

Week	Date	Topics
1	1-Feb-18	Haworth synthesis of phenanthrene, pschorr synthesis of phenanthrene, synthesis of anthracene involving Friedal crafts acylation of benzene with phthalic anhydride.
	2-Feb-18	
	3-Feb-18	
	4-Feb-18	Sunday
2	5-Feb-18	Diels Alder reaction between 1,3-butadiene and 1,4- naphthaquinone, reaction of naphthalene, anthracene and phenanthrene, relative reactivities at different positions.
	6-Feb-18	Mechanism of electrophilic substitution reactions in naphthalene, anthracene and phenanthrene
	7-Feb-18	Mechanism of electrophilic substitution reactions in anthracene.
	8-Feb-18	Mechanism of electrophilic substitution reactions in anthracene and phenanthrene. (UNIT-2 Complete)
	9-Feb-18	
	10-Feb-18	Maharshi Dayanand Saraswati Jayanti
	11-Feb-18	Sunday
3	12-Feb-18	Nomenclature of benzene derivatives. The aryl group. Aromatic nucleus and side chain.
	13-Feb-18	Maha Shivratri
	14-Feb-18	Structure of benzene: molecular formula 18 and Kekule structure. Stability and carbon - carbon bond lengths of benzene, resonance structure, MO picture.
	15-Feb-18	Aromaticity: the Huckel rule, aromatic ions, annulenes up to 10 carbon atoms.
	16-Feb-18	
	17-Feb-18	
	18-Feb-18	Sunday
4	19-Feb-18	Aromatic, anti - aromatic and non - aromatic compounds.
	20-Feb-18	General pattern of the—Aromatic electrophilic substitution - complexes $\pi$ - and $\sigma$ mechanism, role of sigma and pi complex.
	21-Feb-18	Mechanism of nitration, halogenation, sulphonation, mercuration and Friedel-Crafts reaction. Energy profile diagrams.
	22-Feb-18	Activating and deactivating substituents, orientation and ortho/para ratio.
	23-Feb-18	
	24-Feb-18	
5	25-Feb-18	Sunday
	26-Feb-18	Side chain reactions of benzene derivatives, Birch reduction.
	27-Feb-18	Methods of formation and chemical reactions of alkylbenzenes
	28-Feb-18	Methods of formation and chemical reactions of alkynylbenzenes and biphenyl. (UNIT-3 Complete)

## Lesson Plan

Name of the Assistant/ Associate Professor. Ms. Renu Sharma

Class and Section: Hons Chemistry 2<sup>nd</sup> Sem

Subject: Organic Chemistry

Week	Date	Topics
1	1-Mar-18	Guru Ravidas Birthday
	2-Mar-18	Holi
	3-Mar-18	
	4-Mar-18	Sunday
2	5-Mar-18	Nomenclature and classes of alkyl halides, methods of formation, chemical reactions.
	6-Mar-18	Mechanisms and stereochemistry of nucleophilic substitution reactions of alkyl halides.
	7-Mar-18	S <sub>N</sub> 2 and S <sub>N</sub> 1 reactions with energy profile diagrams.
	8-Mar-18	Study of elimination reactions in alkyl halides, E1 and E2 mechanism.
	9-Mar-18	
	10-Mar-18	
	11-Mar-18	Sunday
3	12-Mar-18	Substitution vs. elimination, factors affecting substitution/elimination
	13-Mar-18	Polyhalogen compounds: chloroform, carbon tetrachloride.
	14-Mar-18	Methods of formation of aryl halides, nuclear and side chain reactions.
	15-Mar-18	The addition-elimination and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions.
	16-Mar-18	
	17-Mar-18	
	18-Mar-18	Sunday
4	19-Mar-18	Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides.
	20-Mar-18	Synthesis and uses of DDT.
	21-Mar-18	Synthesis and uses of BHC.
	22-Mar-18	General Reactions of chloroform, carbon tetrachloride.
	23-Mar-18	Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev (UNIT-4 Complete)
	24-Mar-18	
	25-Mar-18	Sunday/ Ram Navami
5	26-Mar-18	Revision Classes.
	27-Mar-18	
	28-Mar-18	
	29-Mar-18	Mahavir Jayanti
	30-Mar-18	
	31-Mar-18	

Lesson Plan

Name of the Assistant/ Associate Professor.....

Class and Section:.....

Subject:.....

Week	Date	Topics
1	1-Apr-18	Sunday
	2-Apr-18	
	3-Apr-18	
	4-Apr-18	
	5-Apr-18	
	6-Apr-18	
	7-Apr-18	
	8-Apr-18	Sunday
2	9-Apr-18	
	10-Apr-18	
	11-Apr-18	
	12-Apr-18	
	13-Apr-18	
	14-Apr-18	Dr Ambedkar Jayanti / Vaisakhi
	15-Apr-18	Sunday
3	16-Apr-18	
	17-Apr-18	
	18-Apr-18	Parashurama Jayanti
	19-Apr-18	
	20-Apr-18	
	21-Apr-18	
	22-Apr-18	Sunday
	4	23-Apr-18
24-Apr-18		
25-Apr-18		
26-Apr-18		
27-Apr-18		
28-Apr-18		

Name of the Assistant/ Associate professor: Dr. Ritambhara Sharma

Class and Section:

**B.Sc (H) 4<sup>th</sup> semester**

Subject:

**(Inorganic Chemistry-I)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>1</b>	Day 1	Introduction of Inorganic Chemistry
	Day 2	Introduction of periodic table
	Day 3	Introduction of acid and base
	Day 4	Introduction of metallurgy
	Day 5	Introduction of Lanthanides and Actinides
		<b>Sunday</b>
<b>2</b>	Day 6	Introduction of second and third transition series
	Day 7	Second and Third Transition Series
	Day 8	General characteristics
	Day 9	Comparative treatment with their 3d-analogues in respect of ionic radii
	Day 10	Comparative treatment with their 3d-analogues in respect of oxidation states
		<b>Sunday</b>
<b>3</b>	Day 11	Magnetic behavior
	Day 12	Spectral properties
	Day 13	Stereochemistry
	Day 14	Chemistry of Mo and W
	Day 15	Chemistry of Mo and W in different oxidation states
		<b>Sunday</b>
<b>4</b>		<b>Vasant Panchami</b>
	Day 16	Revision of section A
		<b>Sir Chhotu Ram Jayanti</b>
	Day 17	<b>Assignment Preparation-Completion of I<sup>st</sup> unit</b>
		<b>Republic day</b>
	Day 18	Revision
	<b>Sunday</b>	
<b>5</b>	Day 19	Isopolyacids of Mo and W
	Day 20	Aqueous chemistry of Mo and W(VI)
	Day 21	Isopoly molybdates and isopolytungstates

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Ritambhara Sharma

Class and Section:

**B.Sc (H) 4<sup>th</sup> semester**

Subject:

**(Inorganic Chemistry-I)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	Day 22	Introduction of acids and bases
	Day 23	Arrhenius theory
		<b>Sunday</b>
<b>7</b>	Day 24	Bronsted theory
	Day 25	Lowry theory
	Day 26	The Lux- Flood theory
	Day 27	Solvent system
	Day 28	Lewis concepts of acids and bases
		<b>Maharshi Dayanand Saraswati Jayanti</b>
	<b>Sunday</b>	
<b>8</b>	Day 29	Relative strength of acids and bases
		<b>Maha Shivratri</b>
	Day 30	The levelling effect
	Day 31	Seminar presentation
	Day 32	Seminar presentation
	<b>Sunday</b>	
<b>9</b>	Day 33	Revision
	Day 34	<b>Assignment Preparation-Section B</b>
	Day 35	Introduction General Principles of Metallurgy
	Day 36	General principles of metallurgy
	Day 37	Occurrence of metals with special emphasis on mineral wealth of India
	<b>Sunday</b>	
<b>10</b>	Day 38	<b>Class test of Section I and II.</b>
	Day 39	Calcination roasting,
	Day 40	Smelting,

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Ritambhara Sharma

Class and Section: B.Sc (H) 4<sup>th</sup> semester

Subject: (Inorganic Chemistry-I)

Week	Date	Topics
11		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
		<b>Sunday</b>
12	Day 41	Bessimerization,
	Day 42	Various methods of concentration
	Day 43	Purification and refining
	Day 44	Parting process
	Day 45	Zone refining
		<b>Sunday</b>
13	Day 46	Oxidation refining
	Day 47	Electrolytic refining and solvent extraction
	Day 48	Metallurgy of important metals like Ag, Au, Zn, Cu, Ni.
	Day 49	Revision
	Day 50	<b>Assignment Preparation- Completion of III<sup>rd</sup> unit</b>
		<b>Sunday</b>
14	Day 51	<b>Chemistry of Lanthanide Elements</b>
	Day 52	Electronic structure
	Day 53	Oxidation states
	Day 54	Ionic radii
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
		<b>Sunday/ Ramnavami</b>
15	Day 55	Lanthanide contraction
	Day 56	Complex formation
	Day 57	Occurrence
		<b>Mahavir Jayanti</b>
	Day 58	Isolation

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Ritambhara Sharma

Class and Section: **B.Sc (H) 4<sup>th</sup> semester**

Subject: **(Inorganic Chemistry-I)**

Week	Date	Topics
<b>16</b>		<b>Sunday</b>
	Day 59	lanthanide compounds
	Day 60	Chemistry of Actinides
	Day 61	General features
	Day 62	Chemistry of actinides
	Day 63	Chemistry of separation of Np, Pu and Am from U
		<b>Sunday</b>
<b>17</b>	Day 64	Similarities between the later actinides and the later lanthanides.
	Day 65	Applications
	Day 66	Revision of section IV
	Day 67	<b>Assignment Preparation- Completion of III<sup>rd</sup> unit</b>
	Day 68	Assignment Preparation
		<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>
<b>18</b>	Day 69	Assignment Preparation
	Day 70	Assignment Preparation
		<b>Parashurama Jayanti</b>
	Day 71	Seminar Presentation
	Day 72	Seminar Presentation
		<b>Sunday</b>
<b>19</b>	Day 73	Seminar Presentation
	Day 74	<b>Unit revision-I (Important topics)</b>
	Day 75	<b>Unit revision-II (Important topics)</b>
	Day 76	<b>Unit revision-III (Important topics)</b>
	Day 77	<b>Unit revision-1V (Important topics)</b>

Lesson Plan

Name of the Assistant/ Associate Professor: Navita Yadav

Class and Section: HC (Chem.) IV Sem.

Subject: Organic Chemistry

Week		Topics
1	Day 1	Introduction of IR spectroscopy.
	Day 2	Molecular vibrations, Hooke's law, selection rule
	Day 3	Intensity and position of IR bands, measurement of IR spectrum
	Day 4	Fingerprint region, characteristic absorption of various functional group
	Day 5	Interpretation of IR spectra of hydrocarbon
	Day 6	Interpretation of IR spectra of hydroxy compounds, aldehyde, Ketone, ester
		Sunday
2	Day 7	IR spectra of anhydrides, amide, amines and nitrocompound
	Day 8	Application of V.v. and IR spectroscopy in structure elucidation
	Day 9	Problem regarding IR spectroscopy question
	Day 10	Introduction of nitrogen compound and nomenclature
	Day 11	Preparation of nitroalkanes and nitrorenes
	Day 12	Chemical reaction of nitroalkanes
		Sunday
3	Day 13	Test of IR spectroscopy
	Day 14	Chemical reaction of nitroalkanes continue
	Day 15	Nucleophilic substitution in nitroarenes and mechanism
	Day 16	Reduction of nitroarene in acidic, neutral and alkaline media
	Day 17	Halonitroarenes reactivity order
	Day 18	Problem regarding nitroalkane and nitroarene
		Sunday
4		<u>VasantPanchami</u>
	Day 19	Structure and nomenclature of amines
		<u>Sir Chhotu Ram Jayanti</u>
	Day 20	Physical properties and stereochemistry of amines
		<u>Republic Day</u>
	Day 21	Separation of primary, secondary and tertiary amines
		Sunday
5	Day 22	Amine salt as phase transfer catalyst, Preparation of alkyl and aryl amine
	Day 23	Gabriel phthalimide reaction and homann bromamide
	Day 24	Reduction of nitro compound, nitriles, reductive amination of aldehydic and ketonic compounds.



1-Feb	Day 25	Reaction of amines
	Day 26	EAS in aryl amine
	Day 27	Reaction of amines with nitrous acid
		Sunday
2	Day 28	Problem regarding amines reaction
	Day 29	Problem regarding basicity of amine
	Day 30	Test of conversion of nitrogen reactions
	Day 31	Diazotisation and its mechanism
	Day 32	Structure and reaction of diazo group
		<u>MaharshiDayanandSaraswatiJayanti</u>
		Sunday
3	Day 33	Reaction of diazo group continue
		<u>MahaShivratri</u>
	Day 34	Coupling reaction and its synthetic application
	Day 35	Preparation of CN, NC and their reaction
	Day 36	Test of IR and nitrogen compound
	Day 37	Preparation of Urea, diazomethane
		Sunday
4	Day 38	Problem regarding diazonium salt
	Day 39	Nomenclature and structure of carbonyl group
	Day 40	Synthesis of aldehyde and ketone reaction
	Day 41	Synthesis of aldehyde and ketone continue
	Day 42	Gattermann aldehyde and Koch reaction
	Day 43	Synthesis of Ketone from nitriles and carboxylic
		Sunday
5	Day 44	Text of diazonium salt
	Day 45	Oxidation reaction of aldehyde and Ketone
	Day 46	Role of PCC, Pyridium dichromate, saret reagent

1-Mar		<u>Guru Ravidas Birthday</u>
		<u>Holi</u>
	Day 47	Text of Aldehyde and Ketone Synthesis
		Sunday
2	Day 48	Physical properties of aldehyde and ketone
	Day 49	comparision of reactivity, nuclephylic additon reactuon of carbonyne
	Day 50	Aldal reaction, Benzoin condensation
	Day 51	Perkin and knoevenagel condensation
	Day 52	Condensation with ammania and its derivatives
	Day 53	Condensation reaction continoue
		Sunday
3	Day 54	Test of reaction of Aldehyde and Ketone
	Day 55	Witting reaction and Mannich reaction
	Day 56	Michal reaction and its example
	Day 57	Problem of students regarding aldehyde reaction
	Day 58	Problem regarding Ketone reaction
	Day 59	Use of actual as protecting group
		Sunday
4	Day 60	Protecting group use and its benefit in other
	Day 61	Oxidation of aldehyde reaction
	Day 62	Cannizzaro reaction and its example
	Day 63	Bayer-Villiger oxidation of Ketone
		<u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u>
	Day 64	MPV, Clemmensen reaction
		<u>Sunday/ Ram Navami</u>
5	Day 65	Walk - Kishher reaction and Mechanism
	Day 66	Reduction using LIAIH <sub>4</sub> and NaBH <sub>4</sub>
	Day 67	Reduction reaction continouue
		<u>MahavirJayanti</u>
	Day 68	Problem regarding Aldehyde/Ketone reactions
	Day 69	Questions of important reaction for pratice

1-Apr		Sunday
	Day 70	Halogenation reactions
	Day 71	Halogenation of enolizable Ketone
	Day 72	Alpha - Beeta unsaturated aldehyde and Ketone
	Day 73	Reaction of alpha - Beeta unsaturated aldehyde and Ketone
	Day 74	Importante reactions question practice
	Day 75	Practice of Aldehyde and Ketone reactions
		Sunday
2	Day 76	Test of name reactions
	Day 77	Promblem os students regfarding aldehyde and Ketone
	Day 78	Test of complete aldehyde and Ketones
	Day 79	Duiscussion about test questions
	Day 80	Problem regarding any topic from all chapters.
		<a href="#">Dr AmbedkarJayanti / Vaisakhi</a>
		Sunday
3	Day 81	Practice of previous questions of IR spectroscopy
	Day 82	Practice of previous questions of nitrogen compound
		<a href="#">ParashuramaJayanti</a>
	Day 83	Previous questions of nitrogen compunds continuoue
	Day 84	Previous question of Diazonium salt
	Day 85	Previous question of Aldehyde and Ketone
		Sunday
4	Day 86	Revision of IR spectroscopy
	Day 87	Revision of Nitrogen compound
	Day 88	Revision of Diazonium salt
	Day 89	Revision of aldehyde and Ketone
	Day 90	Complete syllabus test
	Day 91	Discussion about test

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....4<sup>th</sup> semester .....

Subject:.....Physical Chemistry.....

Week	Date	Topics
1	Day 1	Second law of thermodynamics.
	Day 2	Need for the law, different statements of the law.
		Sunday
2	Day 3	Carnot's cycles and its efficiency, Carnot's Theorem.
	Day 4	Thermodynamics scale of temperature. Concept of entropy.
		Sunday
3	Day 5	Entropy as a state function, entropy as a function of V & T, entropy as a function of P & T.
	Day 6	Entropy change in physical change, entropy as a criteria of spontaneity and equilibrium.
		Sunday
4	Day 7	Vasant Panchami
	Day 8	Entropy change in ideal gases and mixing of gases.
		Sir Chhotu Ram Jayanti
		Republic Day
		Sunday
5	Day 9	Third law of thermodynamics.
	Day 10	Nernst heat theorem, statement of concept of residual entropy.

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 4<sup>th</sup> semester.....

Subject:.....Physical chemistry .....

Week	Date	Topics
1		
	4-Feb-18	Sunday
2	Day 11	Evaluation of absolute entropy from heat capacity data.
	Day 12	Gibbs and Helmholtz functions; Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities
		Maharshi Dayanand Saraswati Jayanti
		Sunday
3	Day 13	A & G as criteria for thermodynamic equilibrium and spontaneity, their advantage over entropy change. Variation of G and A with P, V and T.
	Day 14	Maha Shivratri
		Sunday
4	Day 15	Electrolytic and Galvanic cells – reversible & Irreversible cells , Electrode Reactions.
	Day 16	Conventional representation of electrochemical cells. EMF of cell and its measurement.
		Sunday
5	Day 17	Weston standard cell, activity and activity coefficients . Calculation of thermodynamic quantities of cell reaction ( $\Delta G$ , $\Delta H$ & K).
	Day 18	Types of reversible electrodes – metal- metal ion gas electrode, metal –insoluble salt- anion and redox electrodes.

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 4<sup>th</sup> semester .....

Subject:.....Physical chemistry.....

Week	Date	Topics
1		Guru Ravidas Birthday
		Holi
		Sunday
2	Day 19	Nernst equations, derivation of cell EMF and single electrode potential.
	Day 20	Standard Hydrogen electrode, reference Electrodes.
		Sunday
3	Day 21	Standard electrodes potential, sign conventions, electrochemical series and its applications.
	Day 22	Class test
		Sunday
4	Day 23	Concentration cells with and without transference.
	Day 24	Liquid junction Potential.
		Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev
		Sunday/ Ram Navami
5	Day 25	Application of EMF measurement i.e. valency of ions, solubility product activity coefficient.
	Day 26	Potentiometric titration (acid- base and redox).
		Mahavir Jayanti


### Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 4<sup>th</sup> semester .....

Subject:.....Physical chemistry.....

Week	Date	Topics
1		Sunday
	Day 27	Determination of pH using Hydrogen Electrode.
	Da 28	Quinhydrone electrode by potentiometric methods.
		Sunday
2	Day 29	Glass electrode by potentiometric methods.
	Day 30	
		Dr Ambedkar Jayanti / Vaisakhi
		Sunday
3	Day 31	
	Day 32	
		Parashurama Jayanti
		Sunday
4	Day 33	Class Test




## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan  
Class and Section: B.Sc (H) 6<sup>th</sup> semester  
Subject: (Inorganic Chemistry-II)

Week	Date	Topics
1	Day 1	Introduction to different types of pollution
	Day 2	Air pollution
	Day 3	Primary pollutant
	Day 4	Secondary pollutant
	Day 5	Sources of primary and secondary pollutant
2	Day 6	Effects of Pollution of gaseous hydrocarbons
	Day 7	Control measurement of pollution due to gaseous hydrocarbons
	Day 8	Effects of Pollution of carbon monoxide
	Day 9	Control measurement of pollution due to carbon monoxide
	Day 10	Effects of Pollution of carbon dioxide
3	Day 11	Control measurement of pollution due to carbon dioxide
	Day 12	Effects of Pollution of hydrogen sulphide
	Day 13	Control measurement of pollution due to hydrogen sulphide
	Day 14	Effects of Pollution of oxides of sulphur
	Day 15	Control measurement of pollution due to oxides of sulphur
4		<b>Vasant Panchami</b>
	Day 16	Effects of Pollution of oxides of nitrogen
		<b>Sir Chhotu Ram Jayanti</b>
	Day 17	Control measurement of pollution due to oxides of nitrogen
		<b>Republic day</b>
	Day 18	Photochemical smog and its mechanism
		<b>Sunday</b>
5	Day 19	Air purification by microorganism
	Day 20	Acid rain
	Day 21	<b>Assignment Preparation-Completion of I<sup>st</sup> unit</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan  
Class and Section: B.Sc (H) 6<sup>th</sup> semester  
Subject: (Inorganic Chemistry-II)

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	Day 22	Water pollution and its types
	Day 23	Sources of water pollution
		<b>Sunday</b>
<b>7</b>	Day 24	Prevention and control of water pollution
	Day 25	Discussion about industrial wastes
	Day 26	Characteristics of industrial wastes
	Day 27	Types of industrial wastes
	Day 28	Principle of industrial waste treatment
		<b>Maharshi Dayanand Saraswati Jayanti</b>
		<b>Sunday</b>
<b>8</b>	Day 29	Disposal of industrial wastes
		<b>Maha Shivratri</b>
	Day 30	<b>Assignment Preparation-Completion of II<sup>nd</sup> unit</b>
	Day 31	Seminar presentation
	Day 32	Seminar presentation
		<b>Sunday</b>
<b>9</b>	Day 33	Introduction to nuclear chemistry
	Day 34	Composition of nuclei
	Day 35	Structure of nucleus
	Day 36	Forces operating within nucleus
	Day 37	Nuclear stability
		<b>Sunday</b>
<b>10</b>	Day 38	Mass-energy equivalence
	Day 39	Binding energy
	Day 40	Nuclear reactions

## Lesson Plan

Name of the Assistant/ Associate professor: **Dr. Shri Bhagwan**  
Class and Section: **B.Sc (H) 6<sup>th</sup> semester**  
Subject: **(Inorganic Chemistry-II)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>11</b>		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
		<b>Sunday</b>
<b>12</b>	Day 41	Types of nuclear reactions
	Day 42	Thermonuclear reactions
	Day 43	Photonuclear reactions
	Day 44	Nuclear Fusion
	Day 45	Nuclear fission
		<b>Sunday</b>
<b>13</b>	Day 46	Theories of nuclear fission
	Day 47	Compound nucleus theory
	Day 48	Radiation detection
	Day 49	Measurement of radioactivity
	Day 50	Gaseous ion collection methods
		<b>Sunday</b>
<b>14</b>	Day 51	Geiger'muller counter
	Day 52	Ionization counter
	Day 53	Proportional counter
	Day 54	Scintillation counter
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
		<b>Sunday/ Ramnavami</b>
<b>15</b>	Day 55	Semiconductor detectors
	Day 56	<b>Assignment Preparation- Completion of III<sup>rd</sup> unit</b>
	Day 57	Tracer in chemistry
		<b>Mahavir Jayanti</b>
	Day 58	Activation analysis

## Lesson Plan

Name of the Assistant/ Associate professor: **Dr. Shri Bhagwan**  
Class and Section: **B.Sc (H) 6<sup>th</sup> semester**  
Subject: **(Inorganic Chemistry-II)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>16</b>		<b>Sunday</b>
	Day 59	Isotopic dilution analysis
	Day 60	Radiometric titrations
	Day 61	Structures of various binary compounds
	Day 62	Zinc Blende
	Day 63	Wurtzite & NiAs
		<b>Sunday</b>
<b>17</b>	Day 64	CsCl
	Day 65	CaF <sub>2</sub> & Mn <sub>2</sub> O <sub>3</sub>
	Day 66	Rutile & Corundum
	Day 67	Beta-Crystobalite & ReO <sub>3</sub>
	Day 68	CdI <sub>2</sub> & BiI <sub>3</sub>
		<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>
<b>18</b>	Day 69	Factors affecting crystal structure
	Day 70	Assignment Preparation
		<b>Parashurama Jayanti</b>
	Day 71	Seminar Presentation
	Day 72	Seminar Presentation
		<b>Sunday</b>
<b>19</b>	Day 73	Seminar Presentation
	Day 74	<b>Unit revision-1 (Important topics)</b>
	Day 75	<b>Unit revision-II (Important topics)</b>
	Day 76	<b>Unit revision-III (Important topics)</b>
	Day 77	<b>Unit revision-IV (Important topics)</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Parmod Kumar

Class and Section: B.Sc (H) 6<sup>th</sup> semester

Subject: (Physical Chemistry-I)

Week	Date	Topics
1	Day 1	Infrared spectrum:
	Day 2	energy levels of simple harmonic oscillator.
	Day 3	Selection rule.
	Day 4	Pure vibration spectrum.
	Day 5	Intensity determination of force constant
		<b>Sunday</b>
2	Day 6	qualitative relation of force constant
	Day 7	qualitative relation of bond energies
	Day 8	effect of anharmonicity on vibrational spectrum
	Day 9	Effect of isotope on vibrational spectrum
	Day 10	Numericals
		<b>Sunday</b>
3	Day 11	Idea of vibrational frequencies of different functional groups
	Day 12	Rotational – vibration spectrum.
	Day 13	Calculation of energy of levels of vibrational spectrum
	Day 14	Selection rule.
	Day 15	Revision of Unit-I
		<b>Sunday</b>
4		<b>Vasant Panchami</b>
	Day 16	Seminar
		<b>Sir Chhotu Ram Jayanti</b>
	Day 17	Sessional Exam
		<b>Republic day</b>
	Day 18	Introduction to Raman Spectroscopy
	<b>Sunday</b>	
5	Day 19	Quantum theory of Raman effect.
	Day 20	Classical theory of Raman effect.
	Day 21	Pure rotational Raman spectra.

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Parmod Kumar

Class and Section: B.Sc (H) 6<sup>th</sup> semester

Subject: (Physical Chemistry-I)

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	Day 22	Raman activity of vibration.
	Day 23	Vibration Raman spectra.
		<b>Sunday</b>
<b>7</b>	Day 24	Rotation - vibration Raman spectrum.
	Day 25	Polarisation of light
	Day 26	Raman effect.
	Day 27	Experimental technique.
	Day 28	Experimental technique.
		<b>Maharshi Dayanand Saraswati Jayanti</b>
	<b>Sunday</b>	
<b>8</b>	Day 29	Application of Raman effect
		<b>Maha Shivratri</b>
	Day 30	Elementary idea of nuclear magnetic resonance
	Day 31	Elementary idea of nuclear magnetic resonance
	Day 32	Coupling constant.
		<b>Sunday</b>
<b>9</b>	Day 33	Chemical shift.
	Day 34	Revision of Unit-II
	Day 35	Seminar
	Day 36	Seminar
	Day 37	Sessional Exam
		<b>Sunday</b>
<b>10</b>	Day 38	Introduction to Electronic Spectra
	Day 39	Concepts of potential energy curves for bonding and antibonding molecular orbitals
	Day 40	Qualitative description of selection rule

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Parmod Kumar

Class and Section: B.Sc (H) 6<sup>th</sup> semester

Subject: (Physical Chemistry-I)

Week	Date	Topics
11		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
		<b>Sunday</b>
12	Day 41	Franck-condon principle.
	Day 42	Qualitative description of $\sigma$ , $\pi$ and $\delta$ orbitals
	Day 43	energy level and their respective transition.
	Day 44	Elementary idea of electron spin resonance spectroscopy
	Day 45	Elementary idea of electron spin resonance spectroscopy
		<b>Sunday</b>
13	Day 46	Application ESR spectroscopy
	Day 47	Revision of Unit-III
	Day 48	Seminar
	Day 49	Seminar
	Day 50	Seminar
		<b>Sunday</b>
14	Day 51	Sessional Exam
	Day 52	Introduction to Quantum mechanics
	Day 53	Dual nature of matter and light
	Day 54	Photoelectric effect
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
		<b>Sunday/ Ramnavami</b>
15	Day 55	De-Broglie equation
	Day 56	Heisenberg's uncertainty principle
	Day 57	Schrodinger wave equation and its significance
		<b>Mahavir Jayanti</b>
	Day 58	Schrodinger wave equation and its significance

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Parmod Kumar

Class and Section: B.Sc (H) 6<sup>th</sup> semester

Subject: (Physical Chemistry-I)

Week	Date	Topics	
<b>16</b>		<b>Sunday</b>	
	Day 59	Physical interpretation of the wave function	
	Day 60	Physical interpretation of the wave function	
	Day 61	Postulates of quantum mechanics	
	Day 62	Postulates of quantum mechanics	
	Day 63	Particle in one dimensional box	
		<b>Sunday</b>	
<b>17</b>	Day 64	Particle in one dimensional box	
	Day 65	Particle in three dimensional box	
	Day 66	Concept of Degeneracy	
	Day 67	Physical Significance of Particle in a box	
	Day 68	Revision	
			<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>	
<b>18</b>	Day 69	Seminar	
	Day 70	Seminar	
			<b>Parashurama Jayanti</b>
	Day 71	Sessional Exam	
	Day 72	<b>Unit revision-1 (Important topics)</b>	
		<b>Sunday</b>	
<b>19</b>	Day 73	<b>Unit revision-1 (Important topics)</b>	
	Day 74	<b>Unit revision-1I (Important topics)</b>	
	Day 75	<b>Unit revision-1II (Important topics)</b>	
	Day 76	<b>Unit revision-1III (Important topics)</b>	
	Day 77	<b>Unit revision-1IV (Important topics)</b>	



## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan

Class and Section: B.Sc 6<sup>th</sup> semester

Subject: (Inorganic Chemistry)

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>1</b>	Day 1	Definition and nomenclature of organometallic compounds
	Day 2	Classification of organometallic compounds
		<b>Sunday</b>
<b>2</b>	Day 3	Preparation of organometallic compounds
	Day 4	Properties of organometallic compounds
		<b>Sunday</b>
<b>3</b>	Day 5	Bonding of alkyls of Li and Al organometallic compounds
	Day 6	Bonding of alkyls of Hg and Sn organometallic compounds
		<b>Sunday</b>
<b>4</b>		<b>Vasant Panchami</b>
	Day 7	Discussion on metal-ethylenic complexes
		<b>Sir Chhotu Ram Jayanti</b>
		<b>Republic day</b>
		<b>Sunday</b>
<b>5</b>	Day 8	Introduction to mononuclear carbonyls
	Day 9	Bonding in metal carbonyls. <b>Completion of 1<sup>st</sup> unit</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan  
Class and Section: B.Sc 6<sup>th</sup> semester  
Subject: (Inorganic Chemistry)

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>		
		<b>Sunday</b>
<b>7</b>	Day 10	Arrhenius and Bronsted- Lowry concept of acids and bases
	Day 11	Lux-Flood and Solvent system concept of acids and bases
		<b>Maharshi Dayanand Saraswati Jayanti</b>
		<b>Sunday</b>
<b>8</b>	Day 12	Lewis's concept of acids and bases
		<b>Maha Shivratri</b>
		<b>Sunday</b>
<b>9</b>	Day 13	Relative strength of acids and bases
	Day 14	Concept of hard and soft acids & bases
		<b>Sunday</b>
<b>10</b>	Day 15	Symbiosis concept of hardness of acids & bases
	Day 16	Electronegativity concept of acids & bases
		<b>Completion of II<sup>nd</sup> unit</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan

Class and Section: B.Sc 6<sup>th</sup> semester

Subject: (Inorganic Chemistry)

Week	Date	Topics
11		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
		<b>Sunday</b>
12	Day 17	Essential and trace elements in biological process
	Day 18	Metalloporphyrin-Haemoglobin
		<b>Sunday</b>
13	Day 19	Metalloporphyrin-Myoglobin
	Day 20	Biological role of alkali metals
		<b>Sunday</b>
14	Day 21	Biological role of alkaline earth metals with special reference to Ca <sup>2+</sup> ion
	Day 22	Nitrogen fixation <b>Completion of III<sup>rd</sup> unit</b>
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
		<b>Sunday/ Ramnavami</b>
15	Day 23	Seminar Presentation
	Day 24	Introduction to silicon and phosphazenes
		<b>Mahavir Jayanti</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan

Class and Section: B.Sc 6<sup>th</sup> semester

Subject: (Inorganic Chemistry)

Week	Date	Topics
16		<b>Sunday</b>
	Day 25	Preparation of silicones
	Day 26	Nature of bonding of silicones
		<b>Sunday</b>
17	Day 27	Properties of silicones
	Day 28	Preparation of phosphazenes
		<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>
18	Day 29	Nature of bonding of phosphazenes
	Day 30	Properties of phosphazenes
		<b>Parashurama Jayanti</b>
		<b>Sunday</b>
19	Day 31	Uses of silicones and phosphazenes- <b>Completion of IV<sup>th</sup> unit</b>
	Day 32	Assignment preparation

Lesson Plan

Name of the Assistant/ Associate Professor..... Mr Muhammad Mustafa  
 Class and Section:..... B. Sc Pass (Organic Chemistry VI th Sem)  
 Subject:..... Chemistry

Week		Topics
1	Day 1	introduction
	Day 2	Molecular orbital picture and aromatic characteristics of pyrrole
	Day 3	Classical peptide synthesis, solid-phase peptide synthesis.
	Day 4	
	Day 5	
	Day 6	
		Sunday
2	Day 7	Molecular orbital picture and aromatic characteristics of furan
	Day 8	Molecular orbital picture and aromatic characteristics of thiophene
	Day 9	Structures of peptides and proteins:
	Day 10	
	Day 11	
	Day 12	
3	Day 13	Molecular orbital picture and aromatic characteristics of pyridine
	Day 14	Methods of synthesis and chemical reactions
	Day 15	Primary & Secondary
	Day 16	structure.
	Day 17	
	Day 18	
		Sunday
4		<u>VasantPanchami</u>
	Day 19	mechanism of electrophilic substitution
		<u>Sir Chhotu Ram Jayanti</u>
	Day 20	Mechanism of nucleophilic substitution reactions in pyridine derivatives
	Day 21	
		Sunday
5	Day 22	Comparison of basicity of pyridine,
	Day 23	piperidine and pyrrole
	Day 24	

1-Feb	Day 25	Introduction to condensed five and six- membered heterocycles
	Day 26	Preparation and reactions of indole
	Day 27	
		Sunday
2	Day 28	quinoline
	Day 29	class test
	Day 30	
	Day 31	
	Day 32	
		<u>MaharshiDayanandSaraswatiJayanti</u>
		Sunday
3	Day 33	isoquinoline
		<u>MahaShivratri</u>
	Day 34	Fisher indole synthesis
	Day 35	
	Day 36	
	Day 37	
		Sunday
4	Day 38	Skraup synthesis
	Day 39	Bischler-Napieralski synthesis
	Day 40	
	Day 41	
	Day 42	
	Day 43	
		Sunday
5	Day 44	Mechanism of electrophilic substitution reactions of quinoline
	Day 45	isoquinoline
	Day 46	
1-Mar		<u>Guru Ravidas Birthday</u>
	Day 47	

2	Day 48	Nomenclature of organosulphur
	Day 49	structural features
	Day 50	class test
	Day 51	
	Day 52	
	Day 53	
		Sunday
3	Day 54	Methods of formation and chemical
	Day 55	reactions of thiols, thioethers, sulphonic acids
	Day 56	
	Day 57	
	Day 58	
	Day 59	
		Sunday
4	Day 60	sulphonamides and
	Day 61	sulphaguanidine.
	Day 62	
	Day 63	
	Day 64	
		Sunday/ Ram Navami
5	Day 65	Synthetic detergents alkyl and aryl sulphonates
	Day 66	
	Day 67	
		<u>MahavirJayanti</u>
	Day 68	
	Day 69	

1-Apr		Sunday
	Day 70	Acidity of $\alpha$ -hydrogens,
	Day 71	alkylation of diethyl malonate and ethyl acetoacetate
	Day 72	Classification of proteins. Peptide structure determination, end
	Day 73	group analysis
	Day 74	
	Day 75	
		Sunday
2	Day 76	Synthesis of ethyl acetoacetate:
	Day 77	the Claisen condensation. Keto-enol tautomerism of
	Day 78	ethyl acetoacetate
	Day 79	selective hydrolysis of peptides
	Day 80	
		<a href="#">Dr AmbedkarJayanti / Vaisakhi</a>
		Sunday
3	Day 81	Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic
	Day 82	vinyl polymerization
		<a href="#">ParashuramaJayanti</a>
	Day 83	Ziegler-Natta polymerization and vinyl polymers.
	Day 84	Condensation or step growth polymerization
	Day 85	Polyesters, polyamides, phenol
		formaldehyde resins
4	Day 86	urea formaldehyde resins, epoxy resins and polyurethanes.
	Day 87	Natural and synthetic rubbers.
	Day 88	Classification, of amino acids. Acid-base behavior, isoelectric point and
	Day 89	electrophoresis
	Day 90	Preparation of $\alpha$ -amino acids. Structure and nomenclature of
	Day 91	peptides and proteins.
		Final test



Lesson Plan

Name of the Assistant/ Ms Navita

Class and Section:..... Bsc 6th

Subject:..... Organic chemistry

Week	Topics	
1	Day 1	Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine
	Day 2	chemical reactions with particular emphasis on the mechanism of electrophilic substitution
	Day 3	
	Day 4	
	Day 5	
	Day 6	
		Sunday
2	Day 7	Mechanism of nucleophilic substitution reactions in pyridine derivatives
	Day 8	Comparison of basicity of pyridine, piperidine and pyrrole
	Day 9	
	Day 10	
	Day 11	
	Day 12	
		Sunday
3	Day 13	problem of student
	Day 14	Introduction to condensed five and six- membered heterocycles
	Day 15	
	Day 16	
	Day 17	
	Day 18	
		Sunday
4		<u>VasantPanchami</u>
	Day 19	Preparation and reactions of indole, quinoline and isoquinoline
		<u>Sir Chhotu Ram Javanti</u>
	Day 20	
		<u>Republic Day</u>
	Day 21	
		Sunday
5	Day 22	Fisher indole synthesis, Skraup synthesis and Bischler-Napieralski synthesis.
	Day 23	Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline
	Day 24	

1-Feb	Day 25	
	Day 26	
	Day 27	
		Sunday
2	Day 28	problem of heterocycle
	Day 29	test of heterocycle
	Day 30	
	Day 31	
	Day 32	
		MaharshiDayanandSaraswatiJayanti
		Sunday
3	Day 33	Nomenclature, structural features, Methods of formation and chemical reactions of thiols MahaShivratri
	Day 34	
	Day 35	
	Day 36	
	Day 37	
		Sunday
4	Day 38	thioethers, sulphonic acids, sulphonamides
	Day 39	sulphaguanidine. Synthetic detergents alkyl and aryl sulphonates.
	Day 40	
	Day 41	
	Day 42	
	Day 43	
		Sunday
5	Day 44	problem of organosulphur compound
	Day 45	test of organosulphur compound
	Day 46	

1-Mar		Guru Ravidas Birthday
		Holi
	Day 47	Sunday
2	Day 48	Acidity of D-hydrogens, alkylation of diethyl malonate and ethyl acetoacetate.
	Day 49	Synthesis of ethyl acetoacetate:
	Day 50	
	Day 51	
	Day 52	
	Day 53	
		Sunday
3	Day 54	the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate
	Day 55	problem of enolates
	Day 56	
	Day 57	
	Day 58	
	Day 59	
	Sunday	
4	Day 60	test of enolates
	Day 61	Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization,
	Day 62	
	Day 63	
		<u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u>
	Day 64	<u>Sunday/ Ram Navami</u>
5	Day 65	Ziegler-Natta polymerization and vinyl polymers. Condensation or step growth polymerization
	Day 66	Polyesters, polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy resins and polyurethanes.
	Day 67	
		<u>MahavirJayanti</u>
	Day 68	
Day 69		

1-Apr		Sunday
	Day 70	Natural and synthetic rubbers.
	Day 71	Classification, of amino acids. Acid-base behavior, isoelectric point and electrophoresis. Preparation of D-amino acids.
	Day 72	
	Day 73	
	Day 74	
	Day 75	
2		Sunday
	Day 76	Structure and nomenclature of peptides and proteins. Classification of proteins. Peptide structure determination, end group analysis, selective hydrolysis of peptides.
	Day 77	Classical peptide synthesis, solid-phase peptide synthesis
	Day 78	
	Day 79	
	Day 80	
		<a href="#">Dr. Ambedkar Jayanti / Vaisakhi</a>
3		Sunday
	Day 81	Structures of peptides and proteins: Primary & Secondary structure
	Day 82	problem regarding polymer and protein
		<a href="#">Parashurama Jayanti</a>
	Day 83	
	Day 84	
4	Day 85	
		Sunday
	Day 86	test of polymer and protein
	Day 87	
	Day 88	
	Day 89	
	Day 90	
Day 91		

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....6<sup>th</sup> semester .....

Subject:.....Physical Chemistry.....

Week	Date	Topics
1	Day 1	Concept of potential energy curves
	Day 2	Potential curves for bonding and antibonding molecular orbitals
		Sunday
2	Day 3	Qualitative description of selection rules .
	Day 4	Franck- Condon principle.
		Sunday
3	Day 5	Qualitative description of sigma molecular orbital
	Day 6	Qualitative description of pie and n molecular orbital (MO)
		Sunday
4	Day 7	Vasant Panchami
	Day 8	Energy levels for sigma, pie and n molecular orbital.
		Sir Chhotu Ram Jayanti
		Republic Day
		Sunday
5	Day 9	Respective transitions for sigma, pie and n molecular orbitals.
	Day 10	Interaction of radiation with matter.

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 6<sup>th</sup> semester.....

Subject:.....Physical chemistry .....

Week	Date	Topics
1		
	4-Feb-18	Sunday
2	Day 11	Class test.
	Day 12	Thermal and photochemical processes.
		Maharshi Dayanand Saraswati Jayanti
		Sunday
3	Day 13	Laws of photochemistry: Grotthus-Draper law, Stark-Einstein law (law of photochemical equivalence)
	Day 14	Maha Shivratri
		Sunday
4	Day 15	Jablonski diagram depicting various processes occurring in the excited state.
	Day 16	Qualitative description of Fluorescence.
		Sunday
5	Day 17	Qualitative description of phosphorescence, non-radiative processes (internal conversion, intersystem crossing),
	Day 18	Quantum yield, photosensitized reactions-energy transfer processes (simple examples).

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 6<sup>th</sup> semester .....

Subject:.....Physical chemistry.....

Week	Date	Topics
1		Guru Ravidas Birthday
		Holi
		Sunday
2	Day 19	Ideal and non-ideal solutions, methods of expressing concentrations of solutions
	Day 20	Activity and activity coefficient.
		Sunday
3	Day 21	Dilute solution, Colligative properties, Raoult's law.
	Day 22	Relative lowering of vapour pressure, molecular weight determination.
		Sunday
4	Day 23	Osmosis law of osmotic pressure and its measurement, determination of molecular weight from osmotic pressure.
	Day 24	Elevation of boiling point and depression of freezing point.
		Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev
		Sunday/ Ram Navami
5	Day 25	Thermodynamic derivation of relation between molecular weight and elevation in boiling point and depression in freezing point.
	Day 26	Experimental methods for determining various colligative properties.
		Mahavir Jayanti

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**Lesson Plan**

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 6<sup>th</sup> semester .....

Subject:.....Physical chemistry.....

Week	Date	Topics
1		Sunday
	Day 27	Abnormal molar mass, Degree of dissociation and association of solutes.
	Da 28	Statement and meaning of the terms – phase component and degree of freedom.
		Sunday
2	Day 29	Thermodynamic derivation of Gibbs phase rule, phase equilibria of one component system
	Day 30	Water and Sulphur systems.
		Dr Ambedkar Jayanti / Vaisakhi
		Sunday
3	Day 31	Phase equilibria of two component systems solid-liquid equilibria, simple eutectic
	Day 32	Example Pb-Ag system, desilverisation of lead
		Parashurama Jayanti
		Sunday
4	Day 33	Class Test




Lesson Plan

Name of the Assistant/ Ms Manisha

Class and Section:..... 2 nd sem (HC)

Subject:..... Inorganic Chemistry

Week		Topics
1	Day 1	s-block elements- comparative study, diagonal relationship
	Day 2	salient features of hydrides
	Day 3	solvation tendencies including their function in biosystems
	Day 4	complexation tendencies including their functions in biosystems
	Day 5	
	Day 6	
		Sunday
2	Day 7	introduction to alkyls and aryls
	Day 8	unit 1 completed(revision)
	Day 9	chemistry of analysis of various groups of radicals
	Day 10	analysis of acid and basic radicals
	Day 11	
	Day 12	
		Sunday
3	Day 13	chemistry of identification of acid radicals in combinations
	Day 14	chemistry of identification of basic radicals in combinations
	Day 15	chemistry of interferences of acid radicals including their removal
	Day 16	chemistry of removal of acid radicals in the analysis of basic radicals
	Day 17	
	Day 18	
		Sunday
4		<u>VasantPanchami</u>
	Day 19	theory of precipitation
		<u>Sir Chhotu Ram Jayanti</u>
	Day 20	theory of co-precipitation
		<u>Republic Day</u>
	Day 21	post-precipitation
		Sunday
5	Day 22	purification of precipitates
	Day 23	unit II completed(revision)
	Day 24	p-block elements-I comparative study of 13-17 group

1-Feb	Day 25	study of their diagonal relationships
	Day 26	
	Day 27	
		Sunday
2	Day 28	study of their compounds
	Day 29	study of hydrides of group 13-16
	Day 30	hydrides
	Day 31	oxides
	Day 32	
		<u>MaharshiDayanandSaraswatiJayanti</u>
		Sunday
3	Day 33	oxyacids
		<u>MahaShivratri</u>
	Day 34	oxyacids
	Day 35	halides of group 13-16
	Day 36	
	Day 37	
		Sunday
4	Day 38	hydrides of boron
	Day 39	diboranes
	Day 40	higher boranes
	Day 41	borazine
	Day 42	
	Day 43	
		Sunday
5	Day 44	borohydrides
	Day 45	unit III completed(revision)
	Day 46	p-block elements-II comparative study

1-Mar		<u>Guru Ravidas Birthday</u>
		<u>Holi</u>
	Day 47	
		Sunday
2	Day 48	chemistry of fullerenes
	Day 49	carbides
	Day 50	fluorocarbons
	Day 51	silicates
	Day 52	
	Day 53	
		Sunday
3	Day 54	structural principal of silicates
	Day 55	tetrasulphur tetranitride
	Day 56	basic properties of halogens
	Day 57	interhalogens
	Day 58	
	Day 59	
		Sunday
4	Day 60	polyhalides
	Day 61	comparision of all properties
	Day 62	diagonal relationship of all the group elements
	Day 63	unit IV completed(revision)
		<u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u>
	Day 64	
		<u>Sunday/ Ram Navami</u>
5	Day 65	chemistry of nobel gases-properties
	Day 66	chemical properties of noble gases
	Day 67	chemistry of xenon
		<u>MahavirJayanti</u>
	Day 68	
	Day 69	

1-Apr		Sunday
	Day 70	structure of xenon compounds
	Day 71	bonding of xenon compound
	Day 72	structure and bonding in xenon compounds
	Day 73	unit V completed(revision)
	Day 74	
	Day 75	
		Sunday
2	Day 76	REVISION OF UNIT I
	Day 77	problems of unit I
	Day 78	ASSIGNMENT
	Day 79	
	Day 80	
		<a href="#">Dr AmbedkarJayanti / Vaisakhi</a>
		Sunday
3	Day 81	REVISION OF UNIT II
	Day 82	PROBLEMS OF UNIT II
		<a href="#">ParashuramaJayanti</a>
	Day 83	ASSIGNMENT
	Day 84	
	Day 85	
		Sunday
4	Day 86	REVISION OF UNIT III AND IV
	Day 87	PROBLEMS OF UNIT III AND IV
	Day 88	ASSIGNMENT
	Day 89	Pre semester exams
	Day 90	
	Day 91	

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. chemistry hons...2<sup>nd</sup> semester .....

Subject:.....Physical Chemistry.....

Week	Day	Topics
1	Day 1	Chemical kinetics and its scope.
	Day 2	Rate of reaction.
	Day 3	Factors influencing the rate of reaction.
	Day 4	Concentration, temperature, pressure, solvent, light, catalyst, concentration dependence of rates.
		Sunday
2	Day 5	Mathematical characteristics of simple chemical reactions.
	Day 6	Molecularity and order of reaction.
	Day 7	Zero order ,1st order ,second order, third order reactions.
	Day 8	Their mathematical derivations for their rate constants.
		Sunday
3	Day 9	Differential Method, Method of integration.
	Day 10	Method of half life period and isolation method.
	Day 11	Half life period, average life period,
	Day 12	Determination of order reaction. Pseudo unimolecular reactions.
		Sunday
4	Day 13	Vasant Panchami
	Day 14	Electrical transport conduction in metal.
	Day 15	Sir Chhotu Ram Jayanti
	Day 16	Electrical transport conduction in electrolyte solutions.
		Republic Day
		Sunday
5	Day 17	Specific conductance.
	Day 18	Equivalent conductance.
	Day 19	Measurement of equivalent conductance.

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 2<sup>nd</sup> semester.....chemistry hons.

Subject:.....Physical chemistry .....

Week	Date	Topics
1	Day 20	Variation of equivalent conductance with dilution.
	4-Feb-18	Sunday
2	Day 21	Variation of specific conductance with dilution, migration of ions.
	Day 22	Kohlrausch's law,
	Day 23	Arrhenius theory of electrolyte dissolution.
	Day 24	Limitations of Arrhenius theory.
		Maharshi Dayanand Saraswati Jayanti
		Sunday
3	Day 25	Weak and strong electrolytes.
	Day 26	Maha Shivratri
	Day 27	Ostwald's dilution law.
	Day 28	Uses and limitation of Ostwald's law.
		Sunday
4	Day 29	Debye-Huckel onsager equation for strong electrolytes (elementary treatment only).
	Day 30	Transport number.
	Day 31	Determination by Hittorf and moving boundary method.
	Day 32	Application of conductivity measurements.
		Sunday
5	Day 33	Determination of solubility product of sparingly soluble salts.
	Day 34	Determination of degree of dissolution, $K_a$ for weak acids.

## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 2<sup>nd</sup> semester.....chemistry..hons .....

Subject:.....Physical chemistry.....

Week	Date	Topics
1	Day 34	Guru Ravidas Birthday
	Day 35	Holi
		Sunday
2	Day 36	Class test.
	Day 37	Introduction to thermochemistry.
	Day 38	Definition of important terms used in thermochemistry.
	Day 39	Energy changes during chemical reactions.
		Sunday
3	Day 40	Derivation of 1 <sup>st</sup> law of thermodynamics
	Day 41	Heat of reaction.
	Day 42	Class test
	Day 43	Enthalpy and Enthalpy change.
		Sunday
4	Day 44	Enthalpy of formation.
	Day 45	Enthalpy of Combustion.
	Day 46	Enthalpy of neutralisation.
	Day 47	Enthalpy of solution.
		Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev
		Sunday/ Ram Navami
5	Day 48	Enthalpy of vaporisation.
	Day 49	Enthalpy of sublimation.
	Day 50	Enthalpy of Hydration.
	Day 51	Mahavir Jayanti



## Lesson Plan

Name of the Assistant/ Associate Professor.....Gajal.....

Class and Section:.....B.Sc. 6<sup>th</sup> semester .....

Subject:.....Physical chemistry.....

Week	Date	Topics
1		Sunday
	Day 52	Enthalpy of fusion.
	Day 53	Calorific value of foods.
	Day 54	Bond energy and its calculation.
	Day 55	Hess's law of heat summation.
		Sunday
2	Day 56	Application for the calculation of various enthalpies of reaction.
	Day 57	Kirchhoff's equation.
	Day 58	Spontaneous processes.
	Day 59	Criteria of spontaneity.
		Dr Ambedkar Jayanti / Vaisakhi
		Sunday
3	Day 60	Entropy.
	Day 61	Free energy.
	Day 62	Parashurama Jayanti
	Day 63	Why crisis of energy if conserved in nature.
		Sunday
4	Day 64	Class Test



## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Ritambhara Sharma

Class and Section: **B.Sc (H) 6<sup>th</sup> semester**

Subject: **(Inorganic Chemistry-I)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>1</b>	Day 1	Introduction of Organic Reagents in Inorganic Analysis
	Day 2	Introduction of analytical chemistry
	Day 3	Introduction of polymers
	Day 4	Introduction of separation technique
	Day 5	Introduction of chromatography
<b>2</b>	Day 6	Basic of Organic Reagents in Inorganic Analysis
	Day 7	Use of reagents in inorganic analysis
	Day 8	Use of DMG reagent in inorganic analysis
	Day 9	Use of cupferron reagent in inorganic analysis
	Day 10	Use of 8-hydroxyquinoline reagent in inorganic analysis
<b>3</b>	Day 11	Use of Nitroso $\beta$ - naphthol reagent in inorganic analysis
	Day 12	Use of EDTA reagent in inorganic analysis
	Day 13	Use of Acetylacetone reagent in inorganic analysis
	Day 14	Use of dithiozone reagent in inorganic analysis
	Day 15	Use of dithiocarbamate reagent in inorganic analysis
<b>4</b>		<b>Vasant Panchami</b>
	Day 16	Advantages of organic reagents in inorganic analysis
		<b>Sir Chhotu Ram Jayanti</b>
	Day 17	<b>Revision of section A</b>
		<b>Republic day</b>
	Day 18	<b>Assignment Preparation-Completion of I<sup>st</sup> unit</b>
		<b>Sunday</b>
<b>5</b>	Day 19	Basic of Analytical Chemistry
	Day 20	Sources of errors in chemical analysis
	Day 21	Classification of errors

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Ritambhara Sharma

Class and Section: **B.Sc (H) 6<sup>th</sup> semester**

Subject: **(Inorganic Chemistry-I)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	Day 22	Precision
	Day 23	Accuracy
		<b>Sunday</b>
<b>7</b>	Day 24	Statistical evaluation
	Day 25	Interpretation of results in analytical chemistry
	Day 26	Revision of section B-I
	Day 27	Introduction of Inorganic Polymers
	Day 28	Classification of Inorganic Polymers
		<b>Maharshi Dayanand Saraswati Jayanti</b>
		<b>Sunday</b>
<b>8</b>	Day 29	<b>Assignment Preparation-Section B-I unit</b>
		<b>Maha Shivratri</b>
	Day 30	PON polymer
	Day 31	Seminar presentation
	Day 32	Seminar presentation
		<b>Sunday</b>
<b>9</b>	Day 33	Synthetic inorganic fibre
	Day 34	Co-ordination polymers
	Day 35	Revision of section B-II unit
	Day 36	Revision of Unit I
	Day 37	<b>Assignment Preparation-Section B-II unit</b>
		<b>Sunday</b>
<b>10</b>	Day 38	<b>Class test of Section I and II.</b>
	Day 39	Introduction of separation technique
	Day 40	Introduction of solvent extraction

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Ritambhara Sharma

Class and Section: **B.Sc (H) 6<sup>th</sup> semester**

Subject: **(Inorganic Chemistry-I)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>11</b>		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
		<b>Sunday</b>
<b>12</b>	Day 41	Basic principles of solvent extraction
	Day 42	Classification of solvent extraction
	Day 43	Mechanism of extraction
	Day 44	Extraction equilibria
	Day 45	Techniques of extraction
		<b>Sunday</b>
<b>13</b>	Day 46	Applications in analytical chemistry
	Day 47	Revision
	Day 48	Introduction of Ion-Exchange
	Day 49	Characteristics of ion-exchangers
	Day 50	Mechanism of ion-exchange
		<b>Sunday</b>
<b>14</b>	Day 51	Ion-exchange equilibria
	Day 52	Plate theory for ion-exchange
	Day 53	Techniques of ion-exchange
	Day 54	Applications of ion exchange for separations
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
		<b>Sunday/ Ramnavami</b>
<b>15</b>	Day 55	Revision
	Day 56	<b>Assignment Preparation- Completion of III<sup>rd</sup> unit</b>
	Day 57	Introduction of Chromatography
		<b>Mahavir Jayanti</b>
	Day 58	Classification of chromatographic methods

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Ritambhara Sharma

Class and Section: **B.Sc (H) 6<sup>th</sup> semester**

Subject: **(Inorganic Chemistry-I)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>16</b>		<b>Sunday</b>
	Day 59	Chromatographic terminology
	Day 60	Rf value
	Day 61	Partition co-efficient
	Day 62	Dynamics of chromatography
	Day 63	Basic principle of adsorption
		<b>Sunday</b>
<b>17</b>	Day 64	Basic principle of partition chromatography
	Day 65	Applications
	Day 66	Revision of section IV
	Day 67	<b>Assignment Preparation- Completion of III<sup>rd</sup> unit</b>
	Day 68	Assignment Preparation
		<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>
<b>18</b>	Day 69	
	Day 70	Assignment Preparation
		<b>Parashurama Jayanti</b>
	Day 71	Seminar Presentation
	Day 72	Seminar Presentation
		<b>Sunday</b>
<b>19</b>	Day 73	Seminar Presentation
	Day 74	<b>Unit revision-1 (Important topics)</b>
	Day 75	<b>Unit revision-II (Important topics)</b>
	Day 76	<b>Unit revision-III (Important topics)</b>
	Day 77	<b>Unit revision-IV (Important topics)</b>

Lesson Plan

Name of the Assistant/ Associate Professor.....		Dr. Kanhu Charan Rout
Class and Section:.....		B. Sc (Honours Chemistry VI th Sem) Organic Chemistry -II
Subject:.....		Chemistry
Week		Topics
1	Day 1	introduction
	Day 2	Classification of Terpinoids
	Day 3	Nomenclature and occurrence
	Day 4	Methods for structure determination
	Day 5	Isoprene rule
	Day 6	
		Sunday
2	Day 7	structure determination and stereochemistry of citral
	Day 8	synthesis of citral
	Day 9	Structure determination of geraniol
	Day 10	Synthesis of geraniol
	Day 11	essential oils
	Day 12	
3	Day 13	Introduction of Alkaloids
	Day 14	Classification
	Day 15	extraction
	Day 16	Physiological action of alkaloids
	Day 17	general characteristics
	Day 18	
		Sunday
4		<u>VasantPanchami</u>
	Day 19	general methods of structure determination
		<u>Sir Chhotu Ram Jayanti</u>
	Day 20	Hofman's exhaustive methylation
		<u>Republic Day</u>
	Day 21	isolation
		Sunday
5	Day 22	structure elucidation of nicotine
	Day 23	synthesis of nicotine
	Day 24	synthesis of nicotine

1-Feb	Day 25	structure elucidation of cocaine
	Day 26	synthesis of cocaine
	Day 27	
		Sunday
2	Day 28	synthesis of piperine
	Day 29	class test
	Day 30	classification of pesticides
	Day 31	Natural pesticides
	Day 32	Nicotinides synthesis
		<u>MaharshiDayanandSaraswatiJayanti</u>
		Sunday
3	Day 33	pyrethroids synthesis
		<u>MahaShivratri</u>
	Day 34	Rotenoids synthesis
	Day 35	Sabodilia synthesis
	Day 36	Ryania synthesis
	Day 37	
	Sunday	
4	Day 38	Synthetic pesticides
	Day 39	nitrophenol
	Day 40	Halogens derivative of aromatic hydrocarbons
	Day 41	alicyclic hydrocarbons
	Day 42	Organophosphorus pesticides
	Day 43	
		Sunday
5	Day 44	DDT preparation
	Day 45	reaction and uses of DDT
	Day 46	BHC preparation



1-Mar		<u>Guru Ravidas Birthday</u>
		<u>reaction and uses of BHC</u>
	Day 47	Malathion preparation
		reaction and uses of malathion
2	Day 48	Parathion preparation
	Day 49	reaction and uses of parathion
	Day 50	class test
	Day 51	introduction of vitamins
	Day 52	classification
	Day 53	
		Sunday
3	Day 54	pro vitamins
	Day 55	occurrence
	Day 56	structure of vitamin A
	Day 57	Deficiency diseases of Vitamin A
	Day 58	Structure of Vitamin B
	Day 59	
		Sunday
4	Day 60	Deficiency diseases of Vitamin B1
	Day 61	structure of Vitamin B2
	Day 62	Deficiency diseases of Vitamin B2
	Day 63	Vitamin B6
		<u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u>
	Day 64	Deficiency diseases of Vitamin B6
		<u>Sunday/ Ram Navami</u>
5	Day 65	Vitamin B12
	Day 66	Deficiency diseases of Vitamin B12
	Day 67	Vitamin C
		<u>MahavirJayanti</u>
	Day 68	Vitamin D
	Day 69	

1-Apr		Sunday
	Day 70	Vitamin E
	Day 71	Vitamin H
	Day 72	Vitamin K
	Day 73	Introduction of Harmones
	Day 74	Functions of harmones
	Day 75	
		Sunday
2	Day 76	Difference between harmones and vitamins
	Day 77	Classification and study of Thyroxine
	Day 78	Adrenalin
	Day 79	Insulin
	Day 80	Testosterone
		<a href="#">Dr AmbedkarJayanti / Vaisakhi</a>
		Sunday
3	Day 81	Progesterone
	Day 82	Estrogens
		<a href="#">ParashuramaJayanti</a>
	Day 83	Cortison
	Day 84	structure of secreting gland
	Day 85	functions of secreting glands
		Sunday
4	Day 86	Revision
	Day 87	
	Day 88	
	Day 89	
	Day 90	final class test
	Day 91	

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Dittan

Class and Section: M.Sc (P) 2<sup>nd</sup> semester

Subject: (Inorganic Chemistry-II)

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>1</b>	Day 1	Introduction to valence bond theory
	Day 2	Valence bond theory
	Day 3	Valence bond theory
	Day 4	Limitations of Valence bond theory
	Day 5	Postulates of Crystal field theory
		<b>Sunday</b>
<b>2</b>	Day 6	Crystal field theory (CFT)
	Day 7	Splitting of d-orbitals in cubic through CFT
	Day 8	Splitting of d-orbitals in octahedral through CFT
	Day 9	Splitting of d-orbitals in tetrahedral through CFT
	Day 10	Splitting of d-orbitals in tetragonal through CFT
		<b>Sunday</b>
<b>3</b>	Day 11	Splitting of d-orbitals in square planar through CFT
	Day 12	Factor affecting CFSE
	Day 13	Limitations of CFT
	Day 14	Molecular orbital theory (MOT)
	Day 15	Postulates of MOT
		<b>Sunday</b>
<b>4</b>		<b>Vasant Panchami</b>
	Day 16	Molecular orbital diagram of octahedral complexes
		<b>Sir Chhotu Ram Jayanti</b>
	Day 17	Molecular orbital diagram of tetrahedral complexes
		<b>Republic day</b>
		<b>Sunday</b>
<b>5</b>	Day 18	Molecular orbital diagram of square planar complexes
	Day 19	<b>Assignment Preparation-Completion of I<sup>st</sup> unit</b>
	Day 20	Introduction to electronic spectra of transition metal complexes

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Dittan

Class and Section: M.Sc (P) 2<sup>nd</sup> semester

Subject: (Inorganic Chemistry-II)

Week	Date	Topics
6	Day 21	Spectroscopic ground states
	Day 22	Spin-orbital coupling in free ions of first transition series metals
		<b>Sunday</b>
7	Day 23	Orgel diagram for transition metal complexes
	Day 24	Orgel diagram for d <sup>1</sup> and d <sup>6</sup> electronic configuration
	Day 25	Orgel diagram for d <sup>4</sup> and d <sup>9</sup> electronic configuration
	Day 26	Orgel diagram for d <sup>3</sup> and d <sup>8</sup> electronic configuration
	Day 27	Orgel diagram for d <sup>2</sup> and d <sup>7</sup> electronic configuration
		<b>Maharshi Dayanand Saraswati Jayanti</b>
	<b>Sunday</b>	
8	Day 28	Limitations of Orgel diagram and Orgel diagram for d <sup>5</sup> electronic configuration
		<b>Maha Shivratri</b>
	Day 29	Tanabe-Sugano diagrams for transition metal complexes
	Day 30	Calculation of Dq, B and β parameters
	Day 31	Effect of distortion on the d-orbitals energy level
		<b>Sunday</b>
9	Day 32	Structural evidence from electronic spectrum
	Day 33	Jahn-Teller distortion
	Day 34	Types of Jahn-Teller effect
	Day 35	Consequences of Jahn-Teller distortion
	Day 36	Spectrochemical Series and Nephelauxetic series
		<b>Sunday</b>
10	Day 37	Charge transfer spectra
	Day 38	Types of Charge transfer spectra
	Day 39	Electronic spectra of molecular addition compounds- <b>Assignment Preparation- Completion of II<sup>nd</sup> unit</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Dittan

Class and Section: M.Sc (P) 2<sup>nd</sup> semester

Subject: (Inorganic Chemistry-II)

Week	Date	Topics
11		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
		<b>Sunday</b>
12	Day 40	Magnetic properties of transition metal complexes
	Day 41	Gouy's method for determination of magnetic susceptibility
	Day 42	Calculation of magnetic moment
	Day 43	Magnetic properties of free ions
	Day 44	Orbital contribution to magnetic moment
		<b>Sunday</b>
13	Day 45	Effect of ligand field on orbital motion of electron
	Day 46	Application of magneto-chemistry in structural determination
	Day 47	Magnetic exchange coupling and spin state cross-over
	Day 48	Introduction to metal-cluster
	Day 49	Structure and bonding in higher boranes
		<b>Sunday</b>
14	Day 50	Wade's rule
	Day 51	Metal-carbonyl cluster
	Day 52	Types of metal-carbonyl cluster
	Day 53	Low nuclearity carbonyl cluster
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
		<b>Sunday/ Ramnavami</b>
15	Day 54	High nuclearity carbonyl cluster
	Day 55	TEC (total electron count)- <b>Assignment Preparation- Completion of III<sup>rd</sup> unit</b>
	Day 56	Introduction to metal- $\pi$ complexes
		<b>Mahavir Jayanti</b>
	Day 57	Structure and bonding in metal-carbonyls

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Dittan

Class and Section: M.Sc (P) 2<sup>nd</sup> semester

Subject: (Inorganic Chemistry-II)

Week	Date	Topics	
16		<b>Sunday</b>	
	Day 58	Vibration spectra of metal carbonyls for bonding	
	Day 59	Structural elucidation of metal carbonyls	
	Day 60	Important reactions of metal carbonyls	
	Day 61	Preparation and bonding of metal nitrosyls	
	Day 62	Important reactions of metal nitrosyls	
		<b>Sunday</b>	
17	Day 63	Metal-Dinitrogen complexes	
	Day 64	Structure and bonding in metal dinitrogen complexes	
	Day 65	Important reactions of metal dinitrogen complexes	
	Day 66	Preparation of metal dinitrogen complexes	
	Day 67	Introduction to Tertiary phosphine as ligands	
			<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>	
18	Day 68	Assignment Preparation	
	Day 69	Assignment Preparation	
			<b>Parashurama Jayanti</b>
	Day 70	Seminar Presentation	
	Day 71	Seminar Presentation	
		<b>Sunday</b>	
19	Day 72	Seminar Presentation	
	Day 73	<b>Unit revision-1 (Important topics)</b>	
	Day 74	<b>Unit revision-II (Important topics)</b>	
	Day 75	<b>Unit revision-III (Important topics)</b>	
	Day 76	<b>Unit revision-IV (Important topics)</b>	

Lesson Plan

Name of the Assistant/ **Dr Jitender**

Class and Section:..... **HC 6th**

Subject:..... Physical Special III

Week		Topics
1	Day 1	Vibrational Spectroscopy
	Day 2	Infrared spectrum:
	Day 3	energy levels of simple harmonic oscillator.
	Day 4	Selection rule
	Day 5	Pure vibration spectrum
	Day 6	Intensity determination of force constant
		Sunday
2	Day 7	qualitative relation of force constant
	Day 8	bond energies
	Day 9	effect of anharmonicity motions
	Day 10	isotope on the spectrum
	Day 11	Idea of vibrational frequencies of different functional gp
	Day 12	Idea of vibrational frequencies of different functional gp
		Sunday
3	Day 13	rotational - vibration spectrum
	Day 14	Calculation of energy of levels
	Day 15	selection rule
	Day 16	Problem discussion of unit I
	Day 17	Problem discussion of unit I
	Day 18	Class test of unit I
		Sunday
4		<u>VasantPanchami</u>
	Day 19	Raman Spectroscopy
	Day 20	Quantum theory of Raman effect.
		<u>Republic Day</u>
	Day 21	Classical theory of Raman effect.
		Sunday
	Day 22	Pure rotational Raman spectra
5	Day 23	Raman activity of vibration.
	Day 24	Vibration Raman spectra.
	Day 25	Rotation - vibration Raman spectrum

1-Feb	Day 26	Polarisation of light
	Day 27	Polarisation of light and Raman effect.
		Sunday
	Day 28	Experimental technique
2	Day 29	Application of Raman effect.
	Day 30	Elementary idea of nuclear magnetic resonance
	Day 31	Coupling constant.
	Day 32	Chemical shift.
		<u>MaharshiDayanandSaraswatiJayanti</u>
		Sunday
	Day 33	Problem discussion of unit II
3		<u>MahaShivratri</u>
	Day 34	Class test of unit II
	Day 35	Electronic Spectra
	Day 36	Concepts of potential energy curves
	Day 37	Concepts of potential energy curves for bonding molecular orbitals.
		Sunday
	Day 38	Concepts of potential energy curves for antibonding molecular orbitals
4	Day 39	Qualitative description of selection rule
	Day 40	Franck-condon principle
	Day 41	Qualitative description of $\pi$ orbital
	Day 42	Qualitative description of $\delta$ orbital
	Day 43	energy level of $\pi$ orbital & $\delta$ orbital
		Sunday
	Day 44	respective transition
5	Day 45	Elementary idea of electron spin resonance spectroscopy.
	Day 46	Elementary idea of electron spin resonance spectroscopy.
		<u>Guru Ravidas Birthday</u>



1-Jan		<u>Holi</u>
	Day 47	Application ESR spectroscopy
		Sunday
	Day 48	Application ESR spectroscopy
2	Day 49	Problem discussion of unit III
	Day 50	Class test of unit III
	Day 51	Quantum Mechanics
	Day 52	Dual nature of matter and light
	Day 53	Photoelectric effect
		Sunday
	Day 54	De-Broglie equation.
3	Day 55	Heisenberg's uncertainty principle
	Day 56	Schrodinger wave equation
	Day 57	Schrodinger wave equation and its significance.
	Day 58	Physical interpretation of the wave function
	Day 59	Physical interpretation of the wave function
		Sunday
	Day 60	Postulates of quantum mechanics.
4	Day 61	Postulates of quantum mechanics.
	Day 62	Particle in one dimensional box.
	Day 63	Particle in one dimensional box.
		<u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u>
	Day 64	Particle in three dimensional box.
		<u>Sunday/ Ram Navami</u>
	Day 65	Particle in three dimensional box.
5	Day 66	Problem discussion of unit IV
	Day 67	Class test of unit IV
		<u>MahavirJayanti</u>
	Day 68	Revision of Unit I
	Day 69	Revision of Unit I
		Sunday

1-Apr	Day 70	Revision of Unit I
	Day 71	Revision of Unit I
	Day 72	Revision of Unit I
	Day 73	Revision of Unit I
	Day 74	Revision of Unit II
	Day 75	Revision of Unit II
		Sunday
	Day 76	Revision of Unit II
2	Day 77	Revision of Unit II
	Day 78	Revision of Unit II
	Day 79	Revision of Unit II
	Day 80	Revision of Unit III
		<a href="#">Dr AmbedkarJayanti / Vaisakhi</a>
		Sunday
	Day 81	Revision of Unit III
3	Day 82	Revision of Unit III
		<a href="#">ParashuramaJayanti</a>
	Day 83	Revision of Unit III
	Day 84	Revision of Unit III
	Day 85	Revision of Unit IV
		Sunday
	Day 86	Revision of Unit IV
4	Day 87	Revision of Unit IV
	Day 88	Revision of Unit IV
	Day 89	Sessional examination
	Day 90	Sessional examination
	Day 91	Sessional examination

## Lesson Plan

Name of the Assistant Prof.. Dr. Vijender Singh

Class and Section: M.Sc Chemistry 2<sup>nd</sup> Sem

Subject: Physical Chemistry

Week	Date	Topics
1	1-Jan-18	Schrodinger wave equation for a particle in a three dimensional box
	2-Jan-18	Concept of degeneracy among energy levels for a particle in three dimensional box
	3-Jan-18	Schrodinger wave equation for a linear harmonic oscillator
	4-Jan-18	Solution by polynomial method
	5-Jan-18	Zero point energy of a particle possessing harmonic motion and its consequence
	6-Jan-18	Schrodinger wave equation for three dimensional Rigid rotator, energy of rigid rotator, space quantization
	7-Jan-18	Sunday
2	8-Jan-18	Schrodinger wave equation for hydrogen atom
	9-Jan-18	Separation of variable in polar spherical coordinates and its solution
	10-Jan-18	principle, azimuthal and magnetic quantum numbers and the magnitude of their values
	11-Jan-18	Probability distribution function, radial distribution function and shape of atomic orbitals (s,p &d)
	12-Jan-18	Classius – Clayperon equation
	13-Jan-18	law of mass action and its thermodynamic derivation
	14-Jan-18	Sunday
3	15-Jan-18	Third law of thermodynamics (Nernst heat theorem, determination of absolute entropy, unattainability of absolute zero) and its limitation.
	16-Jan-18	Third law of thermodynamics (Nernst heat theorem, determination of absolute entropy, unattainability of absolute zero) and its limitation.
	17-Jan-18	Phase diagram for two completely miscible components systems.
	18-Jan-18	Eutectic systems
	19-Jan-18	Calculation of eutectic point, systems forming solid compounds $A_x B_y$ with congruent and incongruent melting points
	20-Jan-18	Diagram and thermodynamic treatment of solid solutions
	21-Jan-18	Sunday
4	22-Jan-18	Vasant Panchami
	23-Jan-18	Chain reactions: hydrogen - bromine reaction
	24-Jan-18	Pyrolysis of acetaldehyde,
	25-Jan-18	Decomposition of ethane.
	26-Jan-18	Republic Day
	27-Jan-18	Photochemical reactions (hydrogen – bromine)
	28-Jan-18	Sunday
5	29-Jan-18	hydrogen –chlorine reactions

	30-Jan-18	General treatment of chain reactions
	31-Jan-18	(ortho -para hydrogen conversion and hydrogen - bromine reactions)

Week	Date	Topics
1	1-Feb-18	Apparent activation energy of chain reactions
	2-Feb-18	Rice- Herzfeld mechanism of organic molecules decomposition(acetaldehyde)
	3-Feb-18	Branching chain reactions
	4-Feb-18	Sunday
2	5-Feb-18	Explosions ( H <sub>2</sub> - O <sub>2</sub> reaction)
	6-Feb-18	Kinetics of (one intermediate) enzymatic reaction
	7-Feb-18	Michaelis -Menton treatment
	8-Feb-18	Evaluation of Michaelis 's constant for enzyme
	9-Feb-18	Lineweaver - Burk plot and Eadie- Hofstae methods
	10-Feb-18	Maharshi Dayanand Saraswati Jayanti
	11-Feb-18	Sunday
3	12-Feb-18	. Lineweaver - Burk plot and Eadie- Hofstae methods
	13-Feb-18	Maha Shivratri
	14-Feb-18	Lineweaver - Burk plot and Eadie- Hofstae methods.
	15-Feb-18	Competitive and non-competitive inhibition.
	16-Feb-18	Competitive and non-competitive inhibition.
	17-Feb-18	<b>Ion Transport in solutions:</b> Ionic movement under the influence of an electric field
	18-Feb-18	Sunday
4	19-Feb-18	<b>Ion Transport in solutions:</b> Ionic movement under the influence of an electric field
	20-Feb-18	mobility of ions, ionic drift velocity
	21-Feb-18	current density
	22-Feb-18	Einstein relation between the absolute mobility and diffusion coefficient
	23-Feb-18	Stokes- Einstein relation
	24-Feb-18	Nernst –Einstein equation
	25-Feb-18	Sunday
5	26-Feb-18	Waldens rule
	27-Feb-18	Rate- Process approach to ionic migration
	28-Feb-18	Rate process equation for equivalent conductivity,

Week	Date	Topics
1	1-Mar-18	Guru Ravidas Birthday
	2-Mar-18	Holi
	3-Mar-18	driving force for ionic transport
	4-Mar-18	Sunday
2	5-Mar-18	Nernst - Planck Flux equation,
	6-Mar-18	Ionic drift and diffusion potential
	7-Mar-18	Onsager phenomenological equations.
	8-Mar-18	The basic equation for the diffusion,
	9-Mar-18	Planck- Henderson equation for the diffusion potential
	10-Mar-18	Schrodinger wave equation for a particle in a three dimensional box.
	11-Mar-18	Sunday
3	12-Mar-18	Revision
	13-Mar-18	
	14-Mar-18	
	15-Mar-18	
	16-Mar-18	
	17-Mar-18	
	18-Mar-18	Sunday
4	19-Mar-18	
	20-Mar-18	
	21-Mar-18	
	22-Mar-18	
	23-Mar-18	Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev (UNIT-4 Complete)
	24-Mar-18	
	25-Mar-18	Sunday/ Ram Navami
5	26-Mar-18	Revision Classes.
	27-Mar-18	
	28-Mar-18	
	29-Mar-18	Mahavir Jayanti
	30-Mar-18	
	31-Mar-18	

Lesson Plan

Name of the Assistant/ Associate Professor.....

Class and Section:.....

Subject:.....

Week	Date	Topics
1	1-Apr-18	Sunday
	2-Apr-18	
	3-Apr-18	
	4-Apr-18	
	5-Apr-18	
	6-Apr-18	
	7-Apr-18	
	8-Apr-18	Sunday
2	9-Apr-18	
	10-Apr-18	
	11-Apr-18	
	12-Apr-18	
	13-Apr-18	
	14-Apr-18	Dr Ambedkar Jayanti / Vaisakhi
	15-Apr-18	Sunday
	3	16-Apr-18
17-Apr-18		
18-Apr-18		Parashurama Jayanti
19-Apr-18		
20-Apr-18		
21-Apr-18		
22-Apr-18		Sunday
4		23-Apr-18
	24-Apr-18	
	25-Apr-18	
	26-Apr-18	
	27-Apr-18	
	28-Apr-18	

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		<u>VasantPanchami</u>
	Day 19	applications of tetra carbonyl nickel
		<u>Sir Chhotu Ram Jayanti</u>
	Day 20	preparation of octacarbonyl dicobalt
		<u>Republic Day</u>
	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
		<u>MahaShivratri</u>
	Day 34	preparation and applications of ethyl diazoacetate 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 Leadtetraacetate 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 rearrangement
		Sunday
4	Day 60	Curtius rearrangement
	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	revision
	Day 73	revision
	Day 74	revision
	Day 75	revision
		Sunday
2	Day 76	Final test
	Day 77	
	Day 78	
	Day 79	
	Day 80	
3	Day 81	
	Day 82	
	Day 83	
	Day 84	
	Day 85	
4	Day 86	
	Day 87	
	Day 88	
	Day 89	
	Day 90	
	Day 91	

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Dittan

Class and Section: M.Sc (F) 4<sup>th</sup> semester (Inorganic Special-IV)

Subject: Organotransition metal Chemistry

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>1</b>	Day 1	Introduction of organometallic compounds
	Day 2	Classification of organometallic compounds
	Day 3	Organometallic compounds by covalent bond types
	Day 4	Organometallic compounds by ionic bond types
	Day 5	Organometallic compounds by coordinate bond types
	Day 6	Organometallic compounds by electron deficient bond types
		<b>Sunday</b>
<b>2</b>	Day 7	Cluster compounds
	Day 8	Alkyls Transition Metals compounds
	Day 9	Aryls Transition Metals compounds
	Day 10	Routes of synthesis of Alkyls Transition Metals compounds
	Day 11	Routes of synthesis of Aryls Transition Metals compounds
	Day 12	Stability of Alkyls Transition Metals compounds
		<b>Sunday</b>
<b>3</b>	Day 13	Stability of Aryls Transition Metals compounds
	Day 14	Decomposition pathways Alkyls Transition Metals compounds
	Day 15	Decomposition pathways Aryls Transition Metals compounds
	Day 16	Organocopper
	Day 17	Organocopper in organic synthesis
	Day 18	Application of organocopper <b>Unit-1<sup>st</sup> complete</b>
		<b>Sunday</b>
<b>4</b>		<b>Vasant Panchami</b>
	Day 19	Discussion of Transition Metal $\pi$ -Complexes
		<b>Sir Chhotu Ram Jayanti</b>
	Day 20	Transition metal $\pi$ -complexes with alkene
		<b>Republic day</b>
	Day 21	Preparation of metal-alkene complexes
	<b>Sunday</b>	
<b>5</b>	Day 22	Properties of metal-alkene complexes
	Day 23	Bonding of metal-alkene complexes
	Day 24	Structural features of metal-alkene complexes

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Dittan

Class and Section: M.Sc (F) 4<sup>th</sup> semester (Inorganic Special-IV)

Subject: Organotransition metal Chemistry

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	Day 25	Transition metal $\pi$ -complexes with alkynes
	Day 26	Preparation of metal-alkynes complexes
	Day 27	Properties of metal-alkynes complexes
		<b>Sunday</b>
<b>7</b>	Day 28	Bonding of metal- alkynes complexes
	Day 29	Structural features of metal-alkynes complexes
	Day 30	Transition metal $\pi$ -complexes with allyl ligands
	Day 31	Preparation of metal-allyl complexes
	Day 32	Properties of metal-allyl complexes
		<b>Maharshi Dayanand Saraswati Jayanti</b>
		<b>Sunday</b>
<b>8</b>	Day 33	Properties of metal-allyl complexes
		<b>Maha Shivratri</b>
	Day 34	Bonding of metal- allyl complexes
	Day 35	Structural features of metal-allyl complexes
	Day 36	Transition metal $\pi$ -complexes with dienyl
	Day 37	Preparation of metal-dienyl complexes
		<b>Sunday</b>
<b>9</b>	Day 38	Properties of metal- dienyl complexes
	Day 39	Bonding of metal- dienyl complexes
	Day 40	Structural features of metal-dienyl complexes
	Day 41	Nucleophilic attacks on ligands
	Day 42	Electrophilic attacks on ligands
	Day 43	Nucleophilic reactions to organic synthesis
		<b>Sunday</b>
<b>10</b>	Day 44	Electrophilic reactions to organic synthesis
	Day 45	Reductive elimination to organic synthesis
	Day 46	<b>Unit Revision-Completion of II<sup>nd</sup> unit</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Dittan

Class and Section: M.Sc (F) 4<sup>th</sup> semester (Inorganic Special-IV)

Subject: Organotransition metal Chemistry

Week	Date	Topics
11		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
	Day 47	Disussion of transition metal carbon multiple bonds
		<b>Sunday</b>
12	Day 48	Transition metal carbene complexes
	Day 49	Types of carbene complexes
	Day 50	Fischer type carbene complexes
	Day 51	Synthesis of Fischer type carbene complexes
	Day 52	Reaction of Fischer type carbene complexes
	Day 53	Structure and bonding in Fischer type carbene complexes
		<b>Sunday</b>
13	Day 54	Schrock type carbene complexes
	Day 55	Synthesis of Schrock type carbene complexes
	Day 56	Reaction of Schrock type carbene complexes
	Day 57	Structure and bonding in Schrock type carbene complexes
	Day 58	Difference between Schrock and Fischer type carbene complexes
	Day 59	Transition metal carbyne complexes
		<b>Sunday</b>
14	Day 60	Types of Transition metal carbyne complexes
	Day 61	Synthesis of Transition metal carbyne complexes
	Day 62	Reactions of Transition metal carbyne complexes
	Day 63	Structure and bonding of Transition metal carbyne complexes
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
	Day 64	Difference between Schrock and Fischer type carbyne complexes
		<b>Sunday/ Ramnavami</b>
15	Day 65	<b>Assignment Preparation- Completion of III<sup>rd</sup> unit</b>
	Day 66	Fluxional organometallic compounds
	Day 67	Fluxionality in acyclic alkenes
		<b>Mahavir Jayanti</b>
	Day 68	Sigma-bonded cyclic alkenes
	Day 69	Pi-bonded cyclic alkenes

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Dittan

Class and Section: M.Sc (F) 4<sup>th</sup> semester (Inorganic Special-IV)

Subject: Organotransition metal Chemistry

Week	Date	Topics
<b>16</b>		<b>Sunday</b>
	Day 70	Rotation og ligands on metal
	Day 71	Ligands scrambling on metals
	Day 72	Introduction to catalysis
	Day 73	Transition metal organometallic compounds as catalyst
	Day 74	Zeigler-Natta Catalyst
	Day 75	Homogeneous catalytic hydrogenation
		<b>Sunday</b>
<b>17</b>	Day 76	Alkene hydrogenation by Wilkinson's catalyst
	Day 77	Oxidation of olefins through Wacker Process
	Day 78	Structural Features of Wacker's Process
	Day 79	Hydroformylation of olefins
	Day 80	Oxo's Process
		<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>
<b>18</b>	Day 81	Comparative Study of Wacker's and Oxo's Process
	Day 82	Assignment Preparation
		<b>Parashurama Jayanti</b>
	Day 83	Seminar Presentation
	Day 84	Seminar Presentation
	Day 85	Seminar Presentation
		<b>Sunday</b>
<b>19</b>	Day 86	Seminar Presentation
	Day 87	<b>Unit revision-1 (Important topics)</b>
	Day 88	<b>Unit revision-II (Important topics)</b>
	Day 89	<b>Unit revision-III (Important topics)</b>
	Day 90	<b>Unit revision-IV (Important topics)</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan

Class and Section: M.Sc (F) 4<sup>th</sup> semester (Inorganic Special-VI)

Subject: Medicinal Aspects of Inorganic Chemistry

Week	Date	Topics
1	Day 1	Introduction to syllabus Medicinal aspects of inorganic chemistry.
	Day 2	Biochemical bases of essential and deficient diseases.
	Day 3	Iron deficient diseases and their therapies.
	Day 4	Copper deficient diseases and their therapies.
	Day 5	Zinc deficient diseases and their therapies.
	Day 6	Zinc in tumor growth.
2	Day 7	Zinc in tumor inhibition.
	Day 8	Carcinogenic and carcinostatic ligands.
	Day 9	Introduction of anticancer activity of platinum complexes.
	Day 10	Mechanism of anticancer activity of platinum complexes.
	Day 11	Anticancer activity of rhodium complexes.
	Day 12	Anticancer activity of gold complexes.
3	Day 13	Description of anticancer activities of various metal complexes.
	Day 14	Anticancer activity of copper complexes.
	Day 15	Anticancer activity of Selenium complexes.
	Day 16	Antibacterial properties of metal complexes.
	Day 17	Antiviral activities of metal complexes.
	Day 18	Discussion of chelating drugs
4		<b>Vasant Panchami</b>
	Day 19	Polyamino carboxylic acids as chelating drugs.
		<b>Sir Chhotu Ram Jayanti</b>
	Day 20	Polyethylene amines as chelating drugs.
		<b>Republic Day</b>
	Day 21	Mechanism of anticancer activity of carboxylic acids and Polyethylene amines as chelating drugs.
5	Day 22	Discussion of metal in medicines
	Day 23	Tumor growth and inhibition.
	Day 24	<b>Unit Revision-Completion of I<sup>st</sup> unit</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan

Class and Section: M.Sc (F) 4<sup>th</sup> semester

Subject: Medicinal Aspects of Inorganic Chemistry

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	Day 25	Discussion of Heavy metals in Biological systems
	Day 26	Toxicity of heavy metals
	Day 27	Heavy metals and their detoxification
		<b>Sunday</b>
<b>7</b>	Day 28	Role of Selenium in Biological systems
	Day 29	Selenium essentiality
	Day 30	Toxicity
	Day 31	Selenium toxicity
	Day 32	Metal ion induced toxicity
		<b>Maharshi Dayanand Saraswati Jayanti</b>
		<b>Sunday</b>
<b>8</b>	Day 33	Mechanism of metal ion induced toxicity
		<b>Maha Shivratri</b>
	Day 34	Drugs
	Day 35	Orally administered drugs
	Day 36	Interaction between orally administered drugs
	Day 37	Introduction of metal ions
		<b>Sunday</b>
<b>9</b>	Day 38	Metal ions in gut.
	Day 39	Drugs in hypo activity of thyroids
	Day 40	Drugs in hyper activity of thyroids
	Day 41	Inorganic drugs in dental carries
	Day 42	Clinical disorders of alkali earth metals and their remedies
	Day 43	Clinical disorders of alkaline earth metals and their remedies
		<b>Sunday</b>
<b>10</b>	Day 44	Psychiatry
	Day 45	Lithium drugs in psychiatry
	Day 46	<b>Unit Revision-Completion of II<sup>nd</sup> unit</b>



## Lesson Plan

Name of the Assistant/ Associate professor: **Dr. Shri Bhagwan**

Class and Section: **M.Sc (F) 4<sup>th</sup> semester**

Subject: **Medicinal Aspects of Inorganic Chemistry**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>11</b>		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
	Day 47	Discussion of ligand therapy
		<b>Sunday</b>
<b>12</b>	Day 48	Ligand induced toxicity
	Day 49	Interference with hemoglobin in oxygen transport system
	Day 50	Interference with myoglobin in oxygen transport system
	Day 51	Interference with metallo-enzymes in oxygen transport system
	Day 52	Ligand chelation
	Day 53	Beneficial effects of ligand chelation
		<b>Sunday</b>
<b>13</b>	Day 54	Carcinogenic ligands
	Day 55	Carcinostatic ligands,
	Day 56	Anticancer drugs
	Day 57	Alkylating agents
	Day 58	Alkylating agents as anticancer drugs
	Day 59	Thiosemicarbazones as anticancer drugs
		<b>Sunday</b>
<b>14</b>	Day 60	Macrocyclic antibiotic ligands
	Day 61	Probable mechanism of antibiotic ligands as drug
	Day 62	Chelating agents
	Day 63	Antiviral activity of chelating agents
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
	Day 64	Aspirin chelation
		<b>Sunday/ Ramnavami</b>
<b>15</b>	Day 65	Drugs where chelation and therapeutic activity are unrelated. <b>Completion of III<sup>rd</sup> unit</b>
	Day 66	Vitamins
	Day 67	General functions of vitamins
		<b>Mahavir Jayanti</b>
	Day 68	Dietary allowances
	Day 69	Recommended dietary allowances

## Lesson Plan

Name of the Assistant/ Associate professor: Dr. Shri Bhagwan

Class and Section: M.Sc (F) 4<sup>th</sup> semester

Subject: Medicinal Aspects of Inorganic Chemistry

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>16</b>		<b>Sunday</b>
	Day 70	Efficiencies and supplementations
	Day 71	Dietary minerals
	Day 72	Calcium and vitamin D as dietary minerals
	Day 73	Antioxidants
	Day 74	Health effects of antioxidants
	Day 75	Biominalisation
		<b>Sunday</b>
<b>17</b>	Day 76	Radio pharmacology
	Day 77	Nuclear medicines
	Day 78	Radioisotopes as nuclear medicines
	Day 79	Radioiodine -131
	Day 80	Application of radioiodine -131
		<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>
<b>18</b>	Day 81	Technetium –99m
	Day 82	Application of technetium –99m
		<b>Parashurama Jayanti</b>
	Day 83	Gallium scan
	Day 84	Indium scan
	Day 85	<b>Completion of 4<sup>th</sup> unit</b>
		<b>Sunday</b>
<b>19</b>	Day 86	<b>Unit revision-1 (Important topics)</b>
	Day 87	<b>Unit revision-II (Important topics)</b>
	Day 88	<b>Unit revision-III(Important topics)</b>
	Day 89	<b>Unit revision-IV(Important topics)</b>
	Day 90	<b>Assignment Preparation</b>
	Day 91	<b>Assignment Preparation</b>

Lesson Plan

Name of the Assistant/ Associate Professor..... Dr. Kanhu Charan Rout  
 Class and Section:..... M.Sc (F) Organic specialization  
 Subject:..... Chemistry

Week		Topics
1	Day 1	introduction
	Day 2	Classification of Terpenoids
	Day 3	Nomenclature and occurrence
	Day 4	Methods for structure determination
	Day 5	Isoprene rule
	Day 6	stereochemistry
		Sunday
2	Day 7	structure determination and stereochemistry of citral
	Day 8	synthesis of citral
	Day 9	Structure determination of Zingibrene
	Day 10	Structure determination of Zingibrene
	Day 11	stereochemistry of Zingibrene
	Day 12	Synthesis of Zingibrene
		Sunday
3	Day 13	Structure determination of Santonin
	Day 14	Structure determination of Santonin
	Day 15	synthesis of Santonin
	Day 16	Structure determination of alpha-Cardinene
	Day 17	Synthesis of alpha-Cardinene
	Day 18	Structure determination of Camphor
		Sunday
4		<u>VasantPanchami</u>
	Day 19	Synthesis of Camphor
		<u>Sir Chhotu Ram Jayanti</u>
	Day 20	Structure determination of Fernsol
		<u>Republic Day</u>
	Day 21	Synthesis of Fernsol
		Sunday
5	Day 22	Structure determination of Abietic Acid
	Day 23	Synthesis of Abietic Acid
	Day 24	Biogenetic pathway

1-Feb	Day 25	Biosynthesis of Terpenoids
	Day 26	Biosynthesis of Terpenoids
	Day 27	class test
		Sunday
2	Day 28	Introduction of Alkaloids
	Day 29	Classification and occurrence
	Day 30	General methods of isolation
	Day 31	structure elucidation
	Day 32	Structure of papaverine
		<u>MaharshiDayanandSaraswatiJayanti</u>
		Sunday
3	Day 33	Synthesis of Papaverin
		<u>MahaShivratri</u>
	Day 34	structure of nicotine
	Day 35	synthesis of nicotine
	Day 36	synthesis of nicotine
	Day 37	structure of quinine
		Sunday
4	Day 38	synthesis of quinine
	Day 39	synthesis of quinine
	Day 40	structure of morphine
	Day 41	synthesis of morphine
	Day 42	synthesis of morphine
	Day 43	Structure of lysergic acid
		Sunday
5	Day 44	synthesis of lysergic acid
	Day 45	synthesis of lysergic acid
	Day 46	structure of reserpine

1-Mar		Guru Ravidas Birthday
		Holi
	Day 47	synthesis of reserpine
		Sunday
2	Day 48	class test
	Day 49	introduction of steroids and hormones
	Day 50	occurrence and general methods of isolation
	Day 51	Diels Hydrocarbon
	Day 52	structure elucidation of Cholesterol
	Day 53	synthesis of Cholesterol
		Sunday
3	Day 54	synthesis of Cholesterol
	Day 55	Structure elucidation of Bile acids
	Day 56	Structure elucidation of Bile acids
	Day 57	Synthesis of bile acids
	Day 58	Structure elucidation of Testosterone
	Day 59	Synthesis of testosterone
		Sunday
4	Day 60	Synthesis of testosterone
	Day 61	structure of progesterone
	Day 62	synthesis of progesterone
	Day 63	structure of estrone
		Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev
	Day 64	synthesis of estrone
		Sunday/ Ram Navami
5	Day 65	synthetic non-steroidal estrogens
	Day 66	oestrogens synthesis
	Day 67	structure elucidation of oestrogens
		Mahavir Jayanti
	Day 68	Structure elucidation of Adrenaline
	Day 69	synthesis of Adrenaline

1-Apr		Sunday
	Day 70	structure elucidation of Thyroxine
	Day 71	Synthesis of Thyroxine
	Day 72	Synthesis of Thyroxine
	Day 73	Introduction of Antibiotics
	Day 74	structure elucidation of Pencillin
	Day 75	structure of chloramphenicol
		Sunday
2	Day 76	structure of Streptomycin
	Day 77	structure of tetracyclins
	Day 78	Classification of Postgladius
	Day 79	Physiological effects of of PGE2
	Day 80	Synthesis of PGE2
		<a href="#">Dr AmbedkarJayanti / Vaisakhi</a>
		Sunday
3	Day 81	Physiological effects of of PGE2 alpha
	Day 82	Synthesis of PGE2 alpha
		<a href="#">ParashuramaJayanti</a>
	Day 83	Revision of first chapter
	Day 84	Revision of second chapter
	Day 85	Revision of 3rd chapter
		Sunday
4	Day 86	Revision of 4 th chapetr
	Day 87	Final Test
	Day 88	
	Day 89	
	Day 90	
	Day 91	

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Parmod Kumar

Class and Section: M.Sc (F) 4<sup>th</sup> semester

Subject: Physical Special-V

Week	Date	Topics
<b>1</b>	Day 1	Introduction to Statistical Thermodynamics
	Day 2	Free energy functions
	Day 3	the partition functions
	Day 4	calculation of equilibrium constant using partition function
	Day 5	Bose - Einstein statistics
	Day 6	Bose - Einstein statistics
		<b>Sunday</b>
<b>2</b>	Day 7	statistics of photon gas
	Day 8	statistics of photon gas
	Day 9	gas degeneration
	Day 10	Fermi-Dirac statistics
	Day 11	Fermi-Dirac statistics
	Day 12	extreme gas degeneration
		<b>Sunday</b>
<b>3</b>	Day 13	energy of Bosons
	Day 14	energy of Fermi particles
	Day 15	specific heat of electron gas
	Day 16	Thermionic emission
	Day 17	Thermionic emission
	Day 18	comparison of Maxwell-Boltzmann, Bose –Einstein and Fermi-Dirac statistics
		<b>Sunday</b>
<b>4</b>		<b>Vasant Panchami</b>
	Day 19	Numerical Problems
		<b>Sir Chhotu Ram Jayanti</b>
	Day 20	Revision of Unit-I
		<b>Republic Day</b>
	Day 21	Seminar
		<b>Sunday</b>
<b>5</b>	Day 22	Seminar
	Day 23	Sessional Exam
	Day 24	<b>Introduction to Non-Equilibrium Thermodynamics</b>

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Parmod Kumar

Class and Section: M.Sc (F) 4<sup>th</sup> semester

Subject: Physical Special-V

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	Day 25	General theory of non-equilibrium processes
	Day 26	entropy production and entropy flow
	Day 27	thermodynamic criteria for non-equilibrium states
		<b>Sunday</b>
<b>7</b>	Day 28	entropy production in heat flow
	Day 29	entropy production in mass flow
	Day 30	electric current, chemical reactions
	Day 31	Saxen's relation
	Day 32	Onsager's reciprocity relation
		<b>Maharshi Dayanand Saraswati Jayanti</b>
		<b>Sunday</b>
<b>8</b>	Day 33	Electro kinetic phenomenon
		<b>Maha Shivratri</b>
	Day 34	Theory of fluctuation
	Day 35	Theory of fluctuation
	Day 36	energy fluctuations in the canonical ensemble
	Day 37	energy fluctuations in the canonical ensemble
		<b>Sunday</b>
<b>9</b>	Day 38	distribution function and fluctuations
	Day 39	fluctuations of density and energy
	Day 40	Revision of Unit-II
	Day 41	Seminar
	Day 42	Seminar
	Day 43	Sessional Exam
		<b>Sunday</b>
<b>10</b>	Day 44	Introduction to Quantum Mechanical Operators
	Day 45	Angular momentum
	Day 46	Angular momentum operators in cartesian coordinates



## Lesson Plan

Name of the Assistant/ Associate professor: **Mr. Parmod Kumar**  
 Class and Section: **M.Sc (F) 4<sup>th</sup> semester**  
 Subject: **Physical Special-V**

Week	Date	Topics
<b>11</b>		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
	Day 47	eigen function & eigen values
		<b>Sunday</b>
<b>12</b>	Day 48	commutation relation between angular momentum operators ( $L_x, L_y, L_z, L^2$ )
	Day 49	commutation relation between angular momentum operators ( $L_x, L_y, L_z, L^2$ )
	Day 50	total orbital angular momentum
	Day 51	spin angular momentum
	Day 52	spin angular momentum
	Day 53	commutation relation between components of total orbital angular momentum and spin angular momentum
		<b>Sunday</b>
<b>13</b>	Day 54	commutation relation between components of total orbital angular momentum and spin angular momentum
	Day 55	ladder operators
	Day 56	ladder operators
	Day 57	commutators of [ $L^2, L_+$ ]
	Day 58	commutators of [ $L^2, L_-$ ]
	Day 59	commutators of [ $L^2, L_-$ ]
		<b>Sunday</b>
<b>14</b>	Day 60	application of ladder operators to an eigen function of $L_z$ .
	Day 61	Revision of Unit-III
	Day 62	Seminar
	Day 63	Seminar
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
	Day 64	Sessional Exam
		<b>Sunday/ Ramnavami</b>
<b>15</b>	Day 65	Introduction to Huckel Molecular Orbital Theory (HMO)
	Day 66	theory of linear and cyclic conjugated systems
	Day 67	Applications of HMO theory to Ethylene molecule
		<b>Mahavir Jayanti</b>
	Day 68	Applications of HMO theory to Ethylene molecule
	Day 69	Applications of HMO theory to Allyl system (Allyl radical and the related cation and anion)

## Lesson Plan

Name of the Assistant/ Associate professor: **Mr. Parmod Kumar**

Class and Section: **M.Sc (F) 4<sup>th</sup> semester**

Subject: **Physical Special-V**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>16</b>		<b>Sunday</b>
	Day 70	Applications of HMO theory to Allyl system (Allyl radical and the related cation and anion)
	Day 71	Applications of HMO theory to Butadiene
	Day 72	Applications of HMO theory to Butadiene
	Day 73	Applications of HMO theory to Cyclobutadiene
	Day 74	Applications of HMO theory to Cyclobutadiene
	Day 75	Applications of HMO theory to Cyclopropenyl system (cyclopropenyl radical)
		<b>Sunday</b>
<b>17</b>	Day 76	Applications of HMO theory to Cyclopropenyl system (cyclopropenyl Cation)
	Day 77	Applications of HMO theory to Cyclopropenyl system (cyclopropenyl anion)
	Day 78	Revision of Unit-IV
	Day 79	Seminar
	Day 80	Seminar
		<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>
<b>18</b>	Day 81	Sessional Exam
	Day 82	<b>Unit revision-1 (Important topics)</b>
		<b>Parashurama Jayanti</b>
	Day 83	<b>Unit revision-1 (Important topics)</b>
	Day 84	<b>Unit revision-1I (Important topics)</b>
	Day 85	<b>Unit revision-1I (Important topics)</b>
		<b>Sunday</b>
<b>19</b>	Day 86	<b>Unit revision-1II(Important topics)</b>
	Day 87	<b>Unit revision-1II(Important topics)</b>
	Day 88	<b>Unit revision-1V(Important topics)</b>
	Day 89	<b>Unit revision-1V(Important topics)</b>
	Day 90	<b>Assignment Preparation</b>
	Day 91	<b>Assignment Preparation</b>

Lesson Plan

Name of the Assistant/ **Dr Jitender**

Class and Section:..... **MSc (F)**

Subject:..... Physical Special III

Week		Topics
1	Day 1	Symmetry elements
	Day 2	symmetry operation
	Day 3	group and its properties,
	Day 4	Multiplication table
	Day 5	point symmetry groups
	Day 6	Schonflies symbol,
		Sunday
2	Day 7	representations of groups by matrices
	Day 8	representation for the C <sub>n</sub> , C <sub>nv</sub> , C <sub>nh</sub> , D <sub>nh</sub>
	Day 9	Irreducible representation of groups
	Day 10	The great orthogonality theorem
	Day 11	Importance of great orthogonality theorem
	Day 12	character tables and their use in spectroscopy
		Sunday
3	Day 13	character tables and their use in spectroscopy
	Day 14	Problem Discussion of Unit I
	Day 15	Class test of Unit I
	Day 16	Free electron model
	Day 17	spectra of carbonyl group
	Day 18	spectra of ethene
		Sunday
4		<u>VasantPanchami</u>
	Day 19	n-II and II-II transitions
		<u>Sir Chhotu Ram Jayanti</u>
	Day 20	spectra of benzene
		<u>Republic Day</u>
	Day 21	spectra of transition metals
		Sunday
5	Day 22	charge-transfer transition,
	Day 23	fluorescence
	Day 24	phosphorescence

1-Feb	Day 25	Raman Spectroscopy
	Day 26	Quantum theory of Raman effect
	Day 27	Classical theory of Raman effect
		Sunday
2	Day 28	Pure rotational Raman spectra
	Day 29	Raman activity of vibrations
	Day 30	vibrational Raman spectra
	Day 31	polarization of light
	Day 32	Raman effect
		<u>MaharshiDayanandSaraswatiJayanti</u>
		Sunday
3	Day 33	applications of Raman Spectra
		<u>MahaShivratri</u>
	Day 34	Problem discussion of Electronic spectra
	Day 35	Problem discussion of Raman Spectra
	Day 36	Class test of Unit II part I
	Day 37	Class test of Unit II part II
		Sunday
4	Day 38	Forms of Corrosion
	Day 39	Uniform corrosion
	Day 40	galvanic corrosion
	Day 41	pitting corrosion
	Day 42	crevice corrosion
	Day 43	intergranular corrosion
		Sunday
5	Day 44	stress corrosion cracking
	Day 45	corrosion Dfatigue
	Day 46	fretting corrosiwion

1-Jan		<u>Guru Ravidas Birthday</u>
		<u>Holi</u>
	Day 47	dealloying
		Sunday
2	Day 48	hydrogen embrittlement
	Day 49	erosion corrosion
	Day 50	microbial induced corrosion
	Day 51	filliform corrosion
	Day 52	exfoliation
	Day 53	Problem Discussion of Unit III
		Sunday
3	Day 54	Class test of unit III
	Day 55	Industrial Corrosion Problems
	Day 56	Atmospheric corrosion
	Day 57	high temperature oxidation
	Day 58	Corrosion in industrial cooling water system
	Day 59	Corrosion in industrial cooling water system
		Sunday
4	Day 60	corrosion in boilers
	Day 61	corrosion in condensate pipe lines
	Day 62	corrosion due to acids
	Day 63	corrosion during metal surface cleaning
		<u>ShaheediDiwas of Bhagat Singh, Rajguru &amp; Sukhdev</u>
	Day 64	corrosion during metal surface descaling
		<u>Sunday/ Ram Navami</u>
5	Day 65	corrosion during storage
	Day 66	corrosion during transportation of metallic articles
	Day 67	corrosion in various industries
		<u>MahavirJayanti</u>
	Day 68	corrosion in petroleum industries
	Day 69	corrosion in fertilizers

1-Apr		Sunday
	Day 70	Problem discussion of unit IV
	Day 71	Class test of unit IV
	Day 72	Revision of Unit I
	Day 73	Revision of Unit I
	Day 74	Revision of Unit I
	Day 75	Revision of Unit I
		Sunday
2	Day 76	Revision of Unit II
	Day 77	Revision of Unit II
	Day 78	Revision of Unit II
	Day 79	Revision of Unit II
	Day 80	Revision of Unit III
		<a href="#">Dr AmbedkarJayanti / Vaisakhi</a>
		Sunday
3	Day 81	Revision of Unit III
	Day 82	Revision of Unit III
		<a href="#">ParashuramaJayanti</a>
	Day 83	Revision of Unit III
	Day 84	Revision of Unit III
	Day 85	Revision of Unit IV
		Sunday
4	Day 86	Revision of Unit IV
	Day 87	Revision of Unit IV
	Day 88	Revision of Unit IV
	Day 89	Sessional examination
	Day 90	Sessional examination
	Day 91	Sessional examination

## Lesson Plan

Name of the Assistant Professor: ...Mr. PRIYESH

Class and Section: .....M.sc( F).....4th sem

Subject: .....PHYSICAL CHEMISTRY.....(PAPER 3)

Week	Date	Topics
1	1-Jan-18	CLASSIFICATION OF POLYMERS
		TYPE OF POLYMERISATION, CONDENSATION AND ADDITION POLYMERS
	3-Jan-18	KINETICS OF CONDENSATION POLYMERISATION
	4-Jan-18	SIZE DISTRIBUTION IN LINEAR CONDENSATION POLYMER
	5-Jan-18	MOLECULAR SIZE CONTROL, DEGREE OF POLYMERISATION
	6-Jan-18	MECHANISM OF VINYL RADICAL POLYMERIZATION
	7-Jan-18	Sunday
2	8-Jan-18	MOLECULAR WEIGHT AND ITS DETERMINATION
	9-Jan-18	MOLECULAR WEIGHT AND ITS DETERMINATION
	10-Jan-18	MOLECULAR WEIGHT AND ITS DETERMINATION
	11-Jan-18	MOLECULAR WEIGHT AND ITS DETERMINATION
	12-Jan-18	MOLECULAR WEIGHT AND ITS DETERMINATION
	13-Jan-18	EFFECT OF TEMP AND PRESSURE ON CHAIN POLYMERIZATION
	14-Jan-18	Sunday
	3	15-Jan-18
16-Jan-18		IONIC POLYMERISATION (SIMILARITIES AND CONTRAST)
17-Jan-18		KINETICS OF CATIONIC, ANIONIC POLYMERISATION
18-Jan-18		KINETICS OF COPOLYMERIZATION
19-Jan-18		CRITERIA FOR POLYMER SOLUBILITY,
20-Jan-18		MASS AVERAGE AND MASS AVERAGE MOLECULAR WEIGHT
21-Jan-18		Sunday
4	22-Jan-18	Vasant Panchami
	23-Jan-18	NUMERICALS ON MOLECULAR MASS OF POLYMERS
	24-Jan-18	Sir Chhotu Ram Jayanti
	25-Jan-18	MORE ON MOLECULAR WEIGHT OF POLYMERS
	26-Jan-18	Republic Day
	27-Jan-18	
	28-Jan-18	Sunday
	5	29-Jan-18
30-Jan-18		INTRODUCTION TO BIOPOLYMER
31-Jan-18		STATISTICAL METHODS OF POLYMERS

## Lesson Plan

Name of the Assistant professor: MR. PRIYESH

Class and Section:.....M.SC (F).....

Subject:.....PHYSICAL

CHEMISTRY.....

Week	Date	Topics
1	1-Feb-18	CHAIN CONFIGURATION OF POLYMER CHAINS
	2-Feb-18	END TO END DIMENSIONS OF POLYMER CHAIN
	3-Feb-18	FREELY JIONED CHAIN IN 1D
	4-Feb-18	Sunday
2	5-Feb-18	FREELY JIONED CHAIN IN 3D
	6-Feb-18	INFLUENCE ON BOND ANGLE RESTRICTION
	7-Feb-18	RADIUS OF GYRATION
	8-Feb-18	CLASS TEST 2
	9-Feb-18	THERMODYNAMIC OF POLYMER SOLUTION
	10-Feb-18	Maharshi Dayanand Saraswati Jayanti
	11-Feb-18	Sunday
3	12-Feb-18	ENTROPY OF MIXING
	13-Feb-18	Maha Shivratri
	14-Feb-18	LIQUID STATE MODEL
	15-Feb-18	LIQUID STATE MODEL
	16-Feb-18	LIMITATIONS OF LIQUID STAYE MODEL
	17-Feb-18	SESSIONAL 1
	18-Feb-18	Sunday
	4	19-Feb-18
20-Feb-18		HEAT OF MIXING
21-Feb-18		FREE ENERGY OF MIXING
22-Feb-18		DISSCUSSION ON POLYMERS
23-Feb-18		
24-Feb-18		CLASS TEST 3
25-Feb-18		Sunday
5	26-Feb-18	INTRODUCTION TO ELECTROCHEMISTRY
	27-Feb-18	THE MAXIMUM INTRINSIC EFFICENCY
	28-Feb-18	ACTUL EFFICIENCY



## Lesson Plan

Name of the Assistant professor.....MR.

PRIYESH.....

Class and Section:.....M.SC (F).....

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Subject:.....PHYSICAL

CHEMISTRY.....

Week	Date	Topics
1	1-Mar-18	Guru Ravidas Birthday
	2-Mar-18	Holi
	3-Mar-18	CURRENT POTENTIAL RELATION IN AN ELECTROCHEMICAL ENERGY CONVERTER
	4-Mar-18	Sunday
2	5-Mar-18	FACTORS AFFECTING THE ELECTROCHEMICAL ENERGY CONVERTER
	6-Mar-18	ELECTROCHEMICAL ELECTRICITY GENERATORS
	7-Mar-18	BRIEF IDEA ABOUT HYDROGEN OXYGEN FUEL CELL
	8-Mar-18	HYDROCARBON AIR FUEL CELL
	9-Mar-18	NATURAL GAS FUEL CELL
	10-Mar-18	CO-AIR FUEL CELL
	11-Mar-18	Sunday
3	12-Mar-18	CLASS TEST
	13-Mar-18	ELECTRICITY STORAGE
	14-Mar-18	SOME IMPORTANT QUANTITIES IN ELECTRICITY STORAGE
	15-Mar-18	DESIRABLE CONDITIONS FOR AN IDEAL STORER
	16-Mar-18	STORAGE OF ELECTRICITY USING THE LEAD ACID BATTERY
	17-Mar-18	DRY CELL
	18-Mar-18	Sunday
4	19-Mar-18	SESSIONAL 2
	20-Mar-18	DRY CELL
	21-Mar-18	SILVER ZINC CELL
	22-Mar-18	SODIUM SULPHUR CELL
	23-Mar-18	Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev
	24-Mar-18	AMPEROMETRIC TITRATIONS
	25-Mar-18	Sunday/ Ram Navami
5	26-Mar-18	CLASS TEST
	27-Mar-18	SEMINAR
	28-Mar-18	SEMINAR

	29-Mar-18	Mahavir Jayanti
	30-Mar-18	SEMINAR
	31-Mar-18	SEMINAR

### Lesson Plan

Name of the Assistant Professor : MR. PRIYESH

Class and Section:.....M.SC (F)

Subject:.....PHYSICAL CHEMISTRY

Week	Date	Topic
1	1-Apr-18	Sunday
	2-Apr-18	INTRODUCTION TO POLAROGRAPHY
	3-Apr-18	GENERAL PRINCIPLES OF POLAROGRAPHY
	4-Apr-18	LIMITING CURRENT, DIFFUSION CURRENT
	5-Apr-18	DERIVATIO OF ILKOVIC EQUATION
	6-Apr-18	CONSEQUENCE OF THE ILKOVIC EQUATION
	7-Apr-18	KOUTECCKY'S EQUATION
	8-Apr-18	Sunday
2	9-Apr-18	HALF WAVE POTENTIAL
	10-Apr-18	EQUATION FOR REVERSIBLE CATHODIC WAVE
	11-Apr-18	EQUATION FOR ANODIC AND EQUATION FOR CATHODIC-ANODIC WAVE
	12-Apr-18	ANALYSIS OF REVERSIBLE POLAROGRAPHIC WAVE
	13-Apr-18	FACTORS AFFECTING HALF WAVE POTENTIAL
	14-Apr-18	Dr Ambedkar Jayanti / Vaisakhi
	15-Apr-18	Sunday
3	16-Apr-18	REVERSIBLE PROCESS CINTROLLED BY DIFFUSION OF COMPLEX IONS
	17-Apr-18	REVERSIBLE REDUCTION OF ORGANIC SUBSTANCE S
	18-Apr-18	Parashurama Jayanti
	19-Apr-18	IRREVERSIBLE ELECTRODE PROCESS : AN APPROXIMATE TREATMENT OF A SLOW ELECTRODE PROCESS
	20-Apr-18	REGOROUS TREATMENT OF SLOW ELECTRODE PROCESS
	21-Apr-18	IRREVERSIBLE REDUCTIONOF COMPLEX
	22-Apr-18	Sunday
4	23-Apr-18	POLAROGRAPHY OF ORGANIC SUBSTANCES
	24-Apr-18	POLAROGRAPHY COULOMETRY AT CONSTANT POTENTIAL
	25-Apr-18	DETERMINATION OF NUMBER OF ELECTRONS BY ANALYSIS OF THE DECREASE IN THE LIMITING CURRENT

	26-Apr-18	REVISION
	27-Apr-18	REVISION
	28-Apr-18	SESSIONAL 3

## Lesson Plan

Name of the Assistant/ Associate Professor – Dushyant

Class and Section- M.Sc (F) inorganic specialization

Subject- Electro Analytical Techniques (Paper 2)

Week	Date	Topics
1	1-Jan-18	Introduction to analytical and electro analytical techniques
	2-Jan-18	Electrons at and across interfaces, Electro-chemical and chemical reactions
	3-Jan-18	Introduction to voltametry and related techniques
	4-Jan-18	Basic principles of polarography
	5-Jan-18	residual current, migration current, diffusion current and limiting current
	6-Jan-18	Ilkovic equation Half wave potentials.
	7-Jan-18	Sunday
2	8-Jan-18	Oxygen interference, function of supporting electrolyte
	9-Jan-18	saturated calomel electrode(SCE)
	10-Jan-18	dropping mercury electrode(DME)
	11-Jan-18	Koutecky equation for diffusion current
	12-Jan-18	Polarography maxima
	13-Jan-18	Unit test 1
	14-Jan-18	Sunday
3	15-Jan-18	Determination of stability constants of complexes (reversible systems only) by D.C.Polarography
	16-Jan-18	Principles of Amperometric titrations,
	17-Jan-18	types of titration curves amperometry
	18-Jan-18	apparatus and techniques in amperometry
	19-Jan-18	Catalytic hydrogen wave
	20-Jan-18	Introduction to electrodes and their function
	21-Jan-18	Sunday
4	22-Jan-18	Vasant Panchami
	23-Jan-18	Hanging mercury drop electrode
	24-Jan-18	Sir Chhotu Ram Jayanti
	25-Jan-18	rotating dropping mercury electrode,
	26-Jan-18	Republic Day
	27-Jan-18	Platinum electrodes(RPE), Gold electrode
	28-Jan-18	Sunday
5	29-Jan-18	carbon paste electrode
	30-Jan-18	glassy carbon electrode
	31-Jan-18	graphite electrode

## Lesson Plan

Name Name of the Assistant/ Associate Professor – Dushyant

Class and Section- M.Sc (F) inorganic specialization

Subject- Electro Analytical Techniques (Paper 2)

Week	Date	Topics
1	1-Feb-18	Introduction to ac polarography
	2-Feb-18	Review of second unit
	3-Feb-18	Unit test 2
	4-Feb-18	Sunday
2	5-Feb-18	Super imposed a.c. Polarography
	6-Feb-18	voltametry in quiet and stirred solution with electrode other than mercury
	7-Feb-18	voltametry in quiet and stirred solution with electrode other than mercury
	8-Feb-18	square-wave polarography
	9-Feb-18	square-wave polarography
	10-Feb-18	Maharshi Dayanand Saraswati Jayanti
	11-Feb-18	Sunday
3	12-Feb-18	normal pulse polarography
	13-Feb-18	Maha Shivratri
	14-Feb-18	differential pulse polarography
	15-Feb-18	Double derivative curves of various systems
	16-Feb-18	Introduction to coulometry
	17-Feb-18	Instrumentation in coulometry
	18-Feb-18	Sunday
4	19-Feb-18	Theoretical part of coulometry
	20-Feb-18	Titration curves in coulometry
	21-Feb-18	Basics about potentiometric titrations and conduct metric titrations
	22-Feb-18	Time based current voltage measurements
	23-Feb-18	Chronoamperometry
	24-Feb-18	Chronoamperometry
	25-Feb-18	Sunday
5	26-Feb-18	Chronopotentiometry
	27-Feb-18	Chronopotentiometry
	28-Feb-18	Collective part of chronoamperometry and chronopotentiometry

Lesson Plan

Name of the Assistant/ Associate Professor – Dushyant

Class and Section- M.Sc (F) inorganic specialization

Subject- Electro Analytical Techniques (Paper 2)

Week	Date	Topics
1	1-Mar-18	Guru Ravidas Birthday
	2-Mar-18	Holi
	3-Mar-18	Revision of unit 3
	4-Mar-18	Sunday
2	5-Mar-18	Unit test 3
	6-Mar-18	Introduction to stripping voltametry and other stripping techniques
	7-Mar-18	Theory of anodic stripping voltametry
	8-Mar-18	concentration process In stripping voltametry
	9-Mar-18	stripping process,
	10-Mar-18	rest period,
	11-Mar-18	Sunday
3	12-Mar-18	Types of stripping voltametry
	13-Mar-18	Cathodic stripping voltametry (theoretical part)
	14-Mar-18	Cathodic stripping voltametry(curves and mathematical equations )
	15-Mar-18	Applications , advantages and disadvantages of Cathodic stripping voltametry
	16-Mar-18	Anodic stripping voltametry
	17-Mar-18	Anodic deposition, Cathodic redissolution,
	18-Mar-18	Sunday
4	19-Mar-18	Experiments in stripping techniques
	20-Mar-18	Experiments in stripping techniques
	21-Mar-18	applications of above system to Inorganic systems.
	22-Mar-18	applications of above system to Inorganic systems.
	23-Mar-18	Shaheedi Diwas of Bhagat Singh, Rajguru & Sukhdev
	24-Mar-18	Revision of unit 4
	25-Mar-18	Sunday/ Ram Navami
5	26-Mar-18	Theory of ion selective electrodes
	27-Mar-18	Historical background of ISE
	28-Mar-18	Construction of ISE
	29-Mar-18	Mahavir Jayanti
	30-Mar-18	Experiments using ISE
	31-Mar-18	applications of ISE to Inorganic systems

Lesson Plan

Name of the Assistant/ Associate Professor – Dushyant

Class and Section- M.Sc (F) inorganic specialization

Subject- Electro Analytical Techniques (Paper 2)

Week	Date	Topics
1	1-Apr-18	Sunday
	2-Apr-18	applications of ISE to Inorganic systems
	3-Apr-18	UNIT test 4
	4-Apr-18	Revision of unit 1
	5-Apr-18	Revision of unit 1
	6-Apr-18	Revision of unit 1
	7-Apr-18	Test of unit 1
	8-Apr-18	Sunday
2	9-Apr-18	Revision of unit 2
	10-Apr-18	Revision of unit 2
	11-Apr-18	Revision of unit 2
	12-Apr-18	Test of unit 2
	13-Apr-18	Revision of unit 3
	14-Apr-18	Dr Ambedkar Jayanti / Vaisakhi
	15-Apr-18	Sunday
3	16-Apr-18	Revision of unit 3
	17-Apr-18	Revision of unit 3
	18-Apr-18	Parashurama Jayanti
	19-Apr-18	Test of unit 3
	20-Apr-18	Revision of unit 4
	21-Apr-18	Revision of unit 4
	22-Apr-18	Sunday
4	23-Apr-18	Revision of unit 4
	24-Apr-18	Revision of unit 4
	25-Apr-18	Test of unit 4
	26-Apr-18	Last year's paper solving
	27-Apr-18	Last year's paper solving
	28-Apr-18	Last year's paper solving

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Privesh

Class and Section: M.Sc Chemistry 2<sup>nd</sup> semester

Subject: (General Spectroscopy)

Week	Date	Topics	
1	Day 1	Electromagnetic radiation, interaction of electromagnetic radiation with matter	
	Day 2	regions of the Spectrum	
	Day 3	width and intensity of spectral transitions and resolving power	
	Day 4	Introduction to Rotational Spectra	
			<b>Sunday</b>
2	Day 5	The rotation of molecules, rotational spectra of diatomic molecules	
	Day 6	the spectrum of non rigid rotator	
	Day 7	the effect of isotopic substitutions	
	Day 8	rotational spectra of linear and symmetric top polyatomic molecules	
			<b>Sunday</b>
3	Day 9	<b>Vibrational and Vibrational- Rotational Spectra:</b> The vibrating diatomic molecule	
	Day 10	simple harmonic vibrations, anharmonicity of vibrations	
	Day 11	the diatomic vibrating rotator	
	Day 12	the interaction of rotations and vibrations the vibrations of polyatomic molecules	
			<b>Sunday</b>
4		<b>Vasant Panchami</b>	
	Day 13	analysis by infrared technique	
		<b>Sir Chhotu Ram Jayanti</b>	
	Day 14	Electronic spectra of diatomic molecules	
		<b>Republic day</b>	
	Day 15	vibrational course structure	
		<b>Sunday</b>	
5	Day 16	rotational fine structure of electronic band	
	Day 17	The Frank- Condon principle	
	Day 18	intensity of vibrational-electronic band	
	Day 19	intensity of vibrational-electronic band, dissociation energy	



## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Privesh

Class and Section: M.Sc Chemistry 2<sup>nd</sup> semester

Subject: (General Spectroscopy)

Week	Date	Topics
		<b>Sunday</b>
<b>6</b>	Day 20	the Fortrat diagram
	Day 21	<b>Electronic Absorption Spectroscopy:</b> Energy levels in diatomic molecules
	Day 22	introduction to electronic transition
	Day 23	Assignment of transitions
		<b>Maharshi Dayanand Saraswati Jayanti</b>
		<b>Sunday</b>
<b>7</b>	Day 24	Spectra of transition metal complexes
		<b>Maha Shivratri</b>
	Day 25	Orgel diagrams
	Day 26	Orgel diagrams
	Day 27	Introduction to Nuclear Magnetic Resonance
		<b>Sunday</b>
<b>8</b>	Day 28	Applications of spin-spin coupling to structure alignment of inorganic compounds
	Day 29	evaluation of reaction rates of fast exchange reactions
	Day 30	evaluation of reaction rates of fast exchange reactions
	Day 31	The double resonance technique
<b>9</b>	Day 32	Application of infra-red spectroscopy to the determination of inorganic compounds
	Day 33	Application of infra-red spectroscopy to the determination of inorganic compounds
	Day 34	Revision of Unit-II

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Privesh

Class and Section: M.Sc Chemistry 2<sup>nd</sup> semester

Subject: (General Spectroscopy)

Week	Date	Topics
		<b>Guru Ravidas Birthday</b>
		<b>Holi</b>
	Day 35	Seminar
		<b>Sunday</b>
<b>10</b>	Day 36	Seminar
	Day 37	Seminar
	Day 38	Sessional Exam Unit-I & Unit-II
	Day 39	<b>NMR Spectra:- Spin active nuclei</b>
		<b>Sunday</b>
<b>11</b>	Day 40	chemical shift, shielding and deshielding
	Day 41	internal standards, spin-spin coupling
	Day 42	equivalent and non- Equivalent Protons
	Day 43	equivalent and non- Equivalent Protons
		<b>Sunday</b>
<b>12</b>	Day 44	effect of changing solvents and hydrogen bonding on chemical shifts
	Day 45	effect of changing solvents and hydrogen bonding on chemical shifts
	Day 46	anisotropic effect
	Day 47	anisotropic effect
		<b>Shaheedi diwas of Bhagat Singh, Rajguru and Sukhdev</b>
		<b>Sunday/ Ramnavami</b>
<b>13</b>	Day 48	Principles and Applications of UV, IR and NMR Spectra in the structure elucidation of Organic Compounds
	Day 49	Principles and Applications of UV, IR and NMR Spectra in the structure elucidation of Organic Compounds
	Day 50	Principles and Applications of UV, IR and NMR Spectra in the structure elucidation of Organic Compounds
		<b>Mahavir Jayanti</b>
	Day 51	Principles and Applications of UV, IR and NMR Spectra in the structure elucidation of Organic Compounds

## Lesson Plan

Name of the Assistant/ Associate professor: Mr. Privesh

Class and Section: M.Sc Chemistry 2<sup>nd</sup> semester

Subject: (General Spectroscopy)

Week	Date	Topics	
		<b>Sunday</b>	
14	Day 52	Completion of Unit-III	
	Day 53	Seminar	
	Day 54	Seminar	
	Day 55	Sessional Exam	
			<b>Sunday</b>
15	Day 56	Representation	
	Day 57	Representation	
	Day 58	Representation	
	Day 59	Representation	
			<b>Dr. Ambedkar Jayanti/Vaisakhi</b>
		<b>Sunday</b>	
16	Day 60	<b>Unit revision-1 (Important topics)</b>	
	Day 61	<b>Unit revision-1 (Important topics)</b>	
		<b>Parashurama Jayanti</b>	
	Day 62	<b>Unit revision-1I (Important topics)</b>	
	Day 63	<b>Unit revision-1I (Important topics)</b>	
		<b>Sunday</b>	
17	Day 64	<b>Unit revision-1I (Important topics)</b>	
	Day 65	<b>Unit revision-1III (Important topics)</b>	
	Day 66	<b>Unit revision-1III (Important topics)</b>	
	Day 67	Sessional Exam	