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GOVERNMENT PATALESHWAR COLLEGE, MASTURI
SESSION PLAN

DEPARTMENT: CHEMISTRY

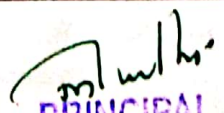
CLASS: B. Sc. -I

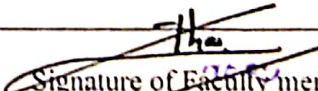
ACADEMIC YEAR: 2018-19

SUBJECT: CHEMISTRY

FACULTY MEMBER: DR. KIRAN THAKUR

MONTH/WEEK	Paper	UNIT NO:	TOPICS TO BE DISCUSSED
July 01.07.2018 to 15.07.2018	Inorganic Chemistry	I (A) and (B)	A. ATOMIC STRUCTURE B. PERIODIC PROPERTIES
July 16.07.2018 to 31.07.2018	Inorganic Chemistry	II	CHEMICAL BONDING (I)
August 01.08.2018 to 15.08.2018	Inorganic Chemistry	III	CHEMICAL BONDING (II)
August 16.08.2018 to 30.08.2018	Inorganic Chemistry	IVA and B	A. S-BLOCK ELEMENTS B. CHEMISTRY OF NOBLE GASES
September 01.09.2018 to 15.09.2018	Inorganic Chemistry	V A and B	A. p-BLOCK ELEMENTS B. INORGANIC CHEMICAL ANALYSIS.
September 15.09.2018 to 30.09.2018	Organic Chemistry	I (A) and (B) II	A. ELECTRONIC STRUCTURE & BONDING B. MECHANISM OF ORGANIC REACTION STEREOCHEMISTRY OF ORGANIC COMPOUNDS
October 01.10.2018 to 15.10.2018	Organic Chemistry	III IV	ALPHABATICAL AND AROMATIC RING COMPOUNDS ALKENES, DIENES AND ALKYNES
October 15.10.2018 to 31.10.2018	Organic Chemistry	V	ARENES AND AROMATICITY
November 01.11.2018 to 15.11.2018	Physical Chemistry	I (A) and (B)	A. MATHEMATICAL CONCEPTS FOR CHEMIST B. COMPUTER
November 15.11.2018 to 30.11.2018	Physical Chemistry	II	MOLECULAR VELOCITIES :
December 01.12.2017 to 15.12.2017	Physical Chemistry	III	LIQUIDE STATE
December 15.12.2018 to 30.12.2018	Physical Chemistry	IV	A. LIQUIDE CRYSTALS
January 01.01.2019 to 15.01.2019	Physical Chemistry	IV	B. COLLOID STATE C. SOLID STATE
January 15.01.2019 to 30.01.2019	Physical Chemistry	V A	A. CHEMICAL KINETICS
February 01.02.2019 to 28.02.2019	Physical Chemistry	V B	B. CATALYSIS


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Signature of Faculty member
Department of Chemistry
Govt Pataleshwar College, Masturi
Distt - Bilaspur (C. G.) 495551

Month-July

B.Sc. - I

Daily Diary

Page : _____
Date : _____

Date	Day	Topic Covered	Remark
1.7.2018	Sunday	-	
2.7.18	Monday	Discussion on syllabus	
3.7.18	Tuesday	General Discussion on Chemistry	
4.7.18	Wednesday	Diff. Bet. Org., Inorg. & Phy. Chem.	
5.7.18	Thursday	-DL-	
6.7.18	Friday	INORGANIC CHEMISTRY - Unit - I [A] - ATOMIC STRUCTURE - Dual nature of radiation, De-broglie eq.	
7.7.18	Saturday	Heisenberg's uncertainty principle.	
8.7.18	Sunday	-	
9.7.18	Monday	Schrodinger equation	
10.7.18	Tuesday	Quantum number	
11.7.18	Wednesday	Radial and angular function	
12.7.18	Thursday	Shape of s, p, d & f orbitals	
13.7.18	Friday	Aufbau Theory (n+l) rule.	
14.7.18	Saturday	Hunds rule, Pauli's rule	
15.7.18	Sunday	-	
16.7.18	Monday	Electronic Configuration	
17.7.18	Tuesday	Effective Nuclear Charge	
18.7.18	Wednesday	INORGANIC CHEMISTRY - Unit - II [B] - PERIODIC PROPERTIES - Atomic radii & Ionic radii	
19.7.18	Thursday	determination of ionic radii, Trends	

Date	Day	Topic Covered	Remarks
20.7.18	Friday	Ionization energy, its determination	
21.7.18	Saturday	- CL -	
22.7.18	Sunday	-	
23.7.18	Monday	applications of ionization energy	
24.7.18	Tuesday	Electron affinity & its determination	
25.7.18	Wednesday	Electronegativity	
26.7.18	Thursday	INORGANIC CHEMISTRY - Unit - II Chemical Bonding - I - Valence bond theory	
27.7.18	Friday	Formation of molecule in the orbital theory	
28.7.18	Saturday	Directional characteristics of covalent bond	
29.7.18	Sunday	-	
30.7.18	Monday	Concept of hybridization	
31.7.18	Tuesday	Types of ions	

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Govt. Pataleshwar College, Akurdi
Distt. - Bilaspur (C.G.) 495551

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Month - August

B.Sc - I
Daily Labry

Date	Day	Topic Covered	Remarks
1.8.2018	Wednesday	USEPR Theory	
2.8.2018	Thursday	Molecular Orbital Theory	
3.8.2018	Friday	LCAO Theory	
4.8.2018	Saturday	Bond strength, bond energy	
5.8.2018	Sunday	-	
6.8.2018	Monday	Percentage Ionic Character	
7.8.2018	Tuesday	INORGANIC CHEMISTRY - Unit - III - Chemical Bonding - II - Ionic solids, structure	
8.8.2018	Wednesday	Radius Ratio	
9.8.2018	Thursday	Coordination number	
10.8.2018	Friday	Lattice Defect	
11.8.2018	Saturday	semiconductors	
12.8.2018	Sunday	-	
13.8.2018	Monday	- CL -	
14.8.2018	Tuesday	Lattice Energy	
15.8.2018	Wednesday	- Independence Day -	
16.8.2018	Thursday	- Govt Holiday -	
17.8.2018	Friday	- " -	
18.8.2018	Saturday	Born-Haber Cycle	Practical
19.8.2018	Sunday	-	
20.8.2018	Monday	Solvation Energy	
21.8.2018	Tuesday	Polarising Power	
22.8.2018	Wednesday	Id - III - July	
23.8.2018	Thursday	Polarizability of ions	

Date	Day	Topic Covered	Remarks
24.8.2018	Friday	Fajan's rule	Practical
25.8.2018	Saturday	Metallic bond	Practical
26.8.2018	Sunday	-	-
27.8.2018	Monday	Free electron, valence bond theories	-
28.8.2018	Tuesday	INORGANIC CHEMISTRY - Unit - IV - S-BLOCK ELEMENT - Function of biosystem of alkyl and alkaline earth metal	-
29.8.2018	Wednesday	Unit - IV [B.J.] CHEMISTRY OF NOBLE GASES - Chemistry of Xenon	-
30.8.2018	Thursday	INORGANIC CHEMISTRY - Unit - V - Chemical analysis - Detection of basic radicals	-
31.8.2018	Friday	Tests for acid radicals	Practical

[Signature]
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Govt. Patelashwar College, Anasra,
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Manjuri Distt. Bilaspur (C.G.)

Date	Day	Topic Covered	Remarks
1.9.2018	Saturday	Interfering acid radicals and their removal	Practical
2.9.2018	Sunday	-	-
3.9.2018	Monday	ORGANIC CHEMISTRY - Unit - I - [A.] - Electronic Structure and Bonding - Resonance - definition, condition	-
4.9.2018	Tuesday	Applications of Resonance	-
5.9.2018	Wednesday	- RUSA Meeting @ Raipur -	-
6.9.2018	Thursday	to 26.9.2018 Refresher Course at Pt. Ravishankar Shukla Uni.	-
27.9.2018	Thursday	-	-
28.9.2018	Friday	Hyperconjugation - definition & explanation	Practical
29.9.2018	Saturday	Application	-
30.9.2018	Sunday	-	-

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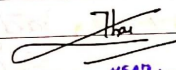
Month - October
 B.Sc. - I
 Daily - Diary

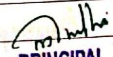
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Date	Day	Topic Covered	Remarks
1.10.2018	Monday	Inductive Effect - Definition, explanation	
2.10.2018	Tuesday	Application	
3.10.2018	Wednesday	Aromaticity - Definition Characteristics	
4.10.2018	Thursday	Quarterly Exam -	
5.10.2018	Friday	---	
6.10.2018	Saturday	---	
7.10.2018	Sunday	---	
8.10.2018	Monday	Pitra Moksha Amavasya - CL -	
9.10.2018	Tuesday	---	
10.10.2018	Wednesday	Quarterly Exam -	
11.10.2018	Thursday	Huckel's law, exceptions	
12.10.2018	Friday	Aromatic nature of cyclopentadienyl anion preparation of ferrocene	Practical
13.10.2018	Saturday	---	
14.10.2018	Sunday	---	
15.10.2018	Monday	Aromatic nature of tropylium cation	
16.10.2018	Tuesday	Hydrogen bond - definition - types	
17.10.2018	Wednesday	Dastkhana Holiday -	
18.10.2018	Thursday	---	
19.10.2018	Friday	---	
20.10.2018	Saturday	---	
21.10.2018	Sunday	---	
22.10.2018	Monday	Applications of Hydrogen bond.	
23.10.2018	Tuesday	Unit - I [B] MECHANISM OF ORGANIC REACTIONS -	

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Date	Day	Topic Covered	Remarks
		Homolytic and heterolytic bond fission.	
24.10.2018	Wednesday	Types of reagents, reactive intermediate, carbonium ions.	
25.10.2018	Thursday	Carbanion - definition, types, structure	
26.10.2018	Friday	Free radicals - structure, stability	
27.10.2018	Saturday	Carbenes - types, structure reactions -	
28.10.2018	Sunday	---	
29.10.2018	Monday	ORGANIC CHEMISTRY - Unit - II - Stereochemistry -	
		Optical isomerism, Chirality	
30.10.2018	Tuesday	Elements of symmetry, Optical isomerism	
31.10.2018	Wednesday	Enantiomers, diastereoisomers	


 HEAD
 Department of Chemistry
 Govt. Patelshanker College, Masturi
 Distt - Bilaspur (C.G.) 495551


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GOVERNMENT PATALESHWAR COLLEGE, MASTURI
SESSION PLAN

DEPARTMENT: CHEMISTRY

ACADEMIC YEAR: 2017-18

FACULTY MEMBER: DR. KIRAN THAKUR

CLASS: B. Sc. -I

SUBJECT: CHEMISTRY

MONTH/WEEK	Paper	UNIT NO:	TOPICS TO BE DISCUSSED
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January 01.01.2018 to 15.01.2018	Physical Chemistry	IV	B. COLLOID STATE C. SOLID STATE
January 15.01.2018 to 30.01.2018	Physical Chemistry	V A	A. CHEMICAL KINETICS
February 01.02.2018 to 28.02.2018	Physical Chemistry	V B	B. CATALYSIS

Signature of Faculty member


प्रो. किरण

शासकीय.पातालेश्वर महाविद्यालय
मस्तुरी, जिला-बिलासपुर (छ.ग.)

Date	Day	Topic Covered	Remark
1.7.2017	Sunday	Discussion of the Syllabus	
2.7.2017	Sunday		
3.7.2017	Monday	ORGANIC CHEMISTRY - Unit - I [A] - Electronic structure and Bonding - Resonance - definition condition	
4.7.2017	Tuesday	Applications of Resonance	
5.7.2017	Wednesday	Hyperconjugation - definition Explanation	
6.7.2017	Thursday	Application	
7.7.2017	Friday	Inductive Effect - definition Explanation	
8.7.2017	Saturday	Application	
9.7.2017	Sunday		
10.7.2017	Monday	Aromaticity - Definition, Characteristics	
11.7.2017	Tuesday	Huckel's law, exceptions, aromatic nature of cyclopentadienyl anion	
12.7.2017	Wednesday	preparation of ferrocene, aromatic nature of tropylium cation	
13.7.2017	Thursday	Hydrogen bond - definition, types.	
14.7.2017	Friday	Applications of hydrogen- bond.	
15.7.2017	Saturday	Unit - I [B] - MECHANISM OF ORGANIC REACTIONS - Homolytic and heterolytic.	

Date	Day	Topic Covered	Remark
		bond fission.	
16.7.2017	Sunday		
17.7.2017	Monday	Types of reagents, reactive intermediate, Carborium ions.	
18.7.2017	Tuesday	Carbanion - definition, types, structure.	
19.7.2017	Wednesday	- OD -	
20.7.2017	Thursday	Free radicals - structure stability	
21.7.2017	Friday	Carbenes - types, structure reactions.	
22.7.2017	Saturday	INORGANIC CHEMISTRY - Unit - I [A] - ATOMIC STRUCTURE - Dual nature of radiation, De-broglie eq.	
23.7.2017	Sunday		
24.7.2017	Monday	Heisenberg's uncertainty principle, schrodinger eq.	
25.7.2017	Tuesday	quantum number, radial & angular function	
26.7.2017	Wednesday	shape of s, p, d & f orbitals Aufbau theory (n+l) rule	
27.7.2017	Thursday	Hunds rule, Pauli's rule	
28.7.2017	Friday	OD	
29.7.2017	Saturday	Electronic Configuration, ENO	
30.7.2017	Sunday		
31.7.2017	Monday	Effective nuclear charge	

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मसूरी, मिना-विलासपुर (ब.ग.)

Daily Diary

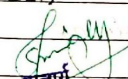
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Date	Day	Topic Covered	Remarks
1.8.2017	Tuesday	INORGANIC CHEMISTRY- Unit-I [B]-PERIODIC PROPERTIES - Atomic and ionic radii.	
2.8.2017	Wednesday	determination of ionic radii, Trends.	
3.8.2017	Thursday	Ionization energy, its determination, applica - -ions	
4.8.2017	Friday	Electron affinity, its determination	
5.8.2017	Saturday	Electronegativity	
6.8.2017	Sunday	-	
7.8.2017	Monday	Raksha Bandhan ↑	
8.8.2017	Tuesday	Workshop by BARC	
9.8.2017	Wednesday	- " -	↓
10.8.2017	Thursday	- " -	
11.8.2017	Friday	- " -	
12.8.2017	Saturday	- " -	
13.8.2017	Sunday	-	
14.8.2017	Monday	INORGANIC CHEMISTRY- Unit-II [A] - P-BLOCK ELEMENTS - Elements of group 13 - Comparison - - Live study	
15.8.2017	Tuesday	INDEPENDANCE DAY	
16.8.2017	Wednesday	Elements of group -14 - C-family	
17.8.2017	Thursday	Elements of group -15- N-family	

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Date	Day	Topic Covered	Remark
18.8.2017	Friday	hydrides, halides, diborane, borazole.	
19.8.2017	Saturday	Fullerene, Interhalogens.	
20.8.2017	Sunday	-	
21.8.2017	Monday	Unit-II [B] - INORGANIC CHEMICAL ANALYSIS - Detection of basic radicals	
22.8.2017	Tuesday	Tests for acid radicals	
23.8.2017	Wednesday	Interfering acid radicals and their removal	
24.8.2017	Thursday	- TEEJ -	
25.8.2017	Friday	- OL -	
26.8.2017	Saturday	- CL -	
27.8.2017	Sunday	-	
28.8.2017	Monday	ORGANIC CHEMISTRY- Unit -II stereochemistry - Optical Isomerism, Chirality	
29.8.2017	Tuesday	Elements of symmetry Optical isomerism	
30.8.2017	Wednesday	Enantiomers, diastereo - isomers	
31.8.2017	Thursday	Epimers, resolution	

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 प्राचार्य
 शासकीय मातावोस्तर महाविद्यालय
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Month - September

Daily Diary

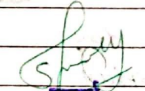
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Date	Day	Topic covered	Remarks
1.9.2017	Friday	Configuration, D, L - nomenclature	
2.9.2017		Id - UL - JUHA -	
3.9.2017	Saturday	-	
3.9.2017	Sunday	-	
4.9.2017	Monday	R.S - system of nomenclature	
5.9.2017	Tuesday	- OD -	
4.9.2017	Wednesday	- Holiday -	
6.9.2017	Thursday	Fischer projection, retention, inversion	
6.9.2017	Friday	Geometrical isomerism	
7.9.2017	Saturday	E-2 - nomenclature	
10.9.2017	Sunday	-	
8.9.2017	Monday	- Cl -	
9.9.2017	Tuesday	- Cl -	
1.13.2017	Wednesday	INORGANIC CHEMISTRY - Unit - II - Chemical Bonding - I - Valence bond theory	
14.9.2017	Thursday	Formation of the molecule in the orbital theory	
15.9.2017	Friday	Directional character - sics of covalent bond	
16.9.2017	Saturday	Concept of hybridisation	
17.9.2017	Sunday	-	
18.9.2017	Monday	Types of ions, USEPR Theory	
19.9.2017	Tuesday	- PITRA MOKSHAANAVASYA -	

Date	Day	Topic Covered	Remark
20.9.2017	Wednesday	Molecular Orbital Theory	
21.9.2017	Thursday	LCAO Theory	
22.9.2017	Friday	Bond strength, bond energy, % ionic character	
23.9.2017	Saturday	INORGANIC CHEMISTRY - Unit - III - CHEMICAL BONDING - II - Ionic solids, Structure	
24.9.2017	Sunday	-	
25.9.2017	Monday	Radius ratio and co-ordination number	
26.9.2017	Tuesday	Lattice defect, semiconductors, Lattice energy, Born-Haber cycle.	
27.9.2017	Wednesday	Solvation energy, polarising power and polarisability of ions.	
28.9.2017	Thursday	- DURGASTHAMI -	
29.9.2017	Friday	- DASHAHARA -	
30.9.2017	Saturday	- " -	
1.9.		- " -	


 प्राचार्य
 शासकीय-पातालेश्वर महाविद्यालय
 मल्हरी, जिला-बिलासपुर (छ.ग.)

Daily Diary

Date:

Date	Day	Topic Covered	Remark
1.10.2017	Sunday	-	
2.10.2017	Monday	- GANDHI JAYANTI -	
3.10.2017	Tuesday	Fajan's rule, Metallic bond free electron	
4.10.2017	Wednesday	Valence bond theories	
5.10.2017	Thursday	INORGANIC CHEMISTRY - Unit - IV - S-BLOCK ELEMENT - Function of bi system of alkyl and alkaline earth metal	
6.10.2017	Friday	Unit - IV [B] - CHEMISTRY OF NOBLE GASES - Chemistry of Xenon	
7.10.2017	Saturday	ORGANIC CHEMISTRY - Unit - V - [A] - Mechanism and stereochemistry of nucleophilic substitution reaction and alkyl halides.	
8.10.2017	Sunday	-	
9.10.2017	Monday	- CL -	
10.10.2017	Tuesday	nucleophilic substitution reaction of aryl halide with energy profile diagram.	
11.10.2017	Wednesday	Quarterly exam -	
12.10.2017	Thursday	- " -	
13.10.2017	Friday	- " -	

LAB 11 Organic Chem

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Date:

Date	Day	Topic Covered	Remark
14.10.2017	Saturday	Quarterly Exam -	
15.10.2017	Sunday	-	
16.10.2017	Monday	International Conf of GGV	
17.10.2017	Tuesday	- " -	
18.10.2017	Wednesday	Diwali Vacation	
19.10.2017	Thursday	- " -	
20.10.2017	Friday	- " -	
21.10.2017	Saturday	- " -	
22.10.2017	Sunday	- " -	
23.10.2017	Monday	- CL -	
24.10.2017	Tuesday	Unit - V [B] - Mechanism and stereochemistry of Elimination Reaction and alkyl halides - Elimination vs substitution.	
25.10.2017	Wednesday	PHYSICAL CHEMISTRY - Unit - I [A] - Mathematical Concepts - Logarithmic reactions.	
26.10.2017	Thursday	Curve sketching	
27.10.2017	Friday	Differentiation	
28.10.2017	Saturday	Integration	
29.10.2017	Sunday	-	
30.10.2017	Monday	Permutation	
31.10.2017	Tuesday	- CL -	

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बल्लारी जिला - बिलासपुर (उ. प.)

PAPER: I: ORGANIC CHEMISTRY

UNIT-I: BASICS OF ORGANIC CHEMISTRY

Hybridization, Shapes of molecules, Influence of hybridization on bond properties. Electronic Displacements: Inductive, electromeric, resonance and mesomeric effects, hyperconjugation and their applications; Dipole moment. Electrophiles and Nucleophiles; Nucleophilicity and basicity; Homolytic and Heterolytic cleavage, Generation, shape and relative stability of Carbocations, Carbanions, Free radicals, Carbenes and Nitrenes. Introduction to types of organic reactions: Addition, Elimination and Substitution reactions.

UNIT-II: INTRODUCTION TO STEREOCHEMISTRY

Optical Isomerism: Optical Activity, Specific Rotation, Chirality/Asymmetry, Enantiomers, Molecules with two or more chiral-centres, Diastereoisomers, meso compounds, Relative and absolute configuration: Fischer, Newmann and Sawhorse Projection formulae and their interconversions; Erythrose and threose, D,L,d,l system of nomenclature, Cahn-Ingold-Prelog system of nomenclature (C.I.P. rules), R,S nomenclature. Geometrical isomerism: cis-trans, syn-anti and E,Z notations.

UNIT-III: CONFORMATIONAL ANALYSIS OF ALKANES

Conformational analysis of alkanes, ethane, butane, cyclohexane and sugars. Relative stability and Energy diagrams. Types of cycloalkanes and their relative stability, Baeyer strain theory; Theory of strainless rings, Chair, Boat and Twist boat conformation of cyclohexane with energy diagrams; Relative stability of mono-substituted cycloalkanes and disubstituted cyclohexane.

UNIT-IV: CHEMISTRY OF ALIPHATIC HYDROCARBONS

A. Carbon-Carbon sigma (σ) bonds Chemistry of alkanes: Formation of alkanes, Wurtz Reaction, Wurtz-Fittig Reaction, Free radical substitutions: Halogenation relative reactivity and selectivity. B. Carbon-Carbon Pi (π) bonds: Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, E1cB reactions. Saytzeff and Hofmann eliminations. Reactions of alkenes: Electrophilic additions and mechanisms (Markownikoff, Anti-Markownikoff addition), mechanism of oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti-hydroxylation (oxidation), 1,2- and 1,4-addition reactions in conjugated dienes and, Diels-Alder reaction; Allylic and benzylic bromination and mechanism, e.g. propene, 1-butene, toluene, ethyl benzene. Reactions of alkynes: Acidity, Electrophilic and Nucleophilic additions. Hydration to form carbonyl compounds, Alkylation of terminal alkynes.

UNIT-V: AROMATIC HYDROCARBONS

Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism. Directive effects of the groups.

PAPER - III PHYSICAL CHEMISTRY

UNIT-I: MATHEMATICAL CONCEPTS FOR CHEMIST

Basic Mathematical Concepts: Logarithmic relations, curve sketching, linear graphs, Properties of straight line, slope and intercept, Functions, Differentiation of functions, maxima and minima; integrals; ordinary differential equations; vectors and matrices; determinants; Permutation and combination and probability theory, Significant figures and their applications.

UNIT-II: GASEOUS STATE CHEMISTRY

Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path; Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities. Joule Thompson effect, Liquefaction of Gases. Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor (Z), and its variation with pressure and temperature for different gases. Causes of deviation from ideal behaviour, van der Waals equation of state, its derivation and application in explaining real gas behaviour, calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.

UNIT-III: A. LIQUID STATE CHEMISTRY

Intermolecular forces, magnitude of intermolecular force, structure of liquids, Properties of liquids, viscosity and surface tension. B. COLLOIDS and SURFACE CHEMISTRY Classification, Optical, Kinetic and Electrical Properties of colloids. Coagulation, Hardy-Schulze law, flocculation value, Protection, Gold number, Emulsion, micelles and types. Gel, Syneresis and thixotropy, Application of colloids. Physical adsorption, chemisorption, adsorption isotherms (Langmuir and Freundlich). Nature of adsorbed state. Qualitative discussion of BET.

UNIT-IV: SOLID STATE CHEMISTRY

Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, a simple account of rotating crystal method and powder pattern method. Crystal defects.

UNIT-V: A. CHEMICAL KINETICS

Rate of reaction, Factors influencing rate of reaction, rate law, rate constant, Order and molecularity of reactions, rate determining step, Zero, First and Second order reactions, Rate and Rate Law, methods of determining order of reaction, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non mathematical concept of transition state theory. B. CATALYSIS Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristic of catalyst, Enzyme catalysed reactions, Micellar catalysed reactions, Industrial applications of Catalysis.

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B. Sc. I Year

Month - November

GOVERNMENT PATALESHWAR COLLEGE, MASTURI
SESSION PLAN

DEPARTMENT: CHEMISTRY
ACADEMIC YEAR: 2020-21
FACULTY MEMBER: DR. KIRAN THAKUR

CLASS: B. Sc. - I
SUBJECT: CHEMISTRY

MONTH/WEEK	Paper	UNIT NO:	TOPICS TO BE DISCUSSED
November 01.11.2020 to 15.11.2020	Inorganic Chemistry	I (A) and (B) II	A. ATOMIC STRUCTURE B. PERIODIC PROPERTIES C. CHEMICAL BONDING (I)
November 16.11.2020 to 30.11.2020	Inorganic Chemistry	III IVA and B	CHEMICAL BONDING (II) A. S-BLOCK ELEMENTS B. p-BLOCK ELEMENTS
December 01.12.2020 to 15.12.2020	Inorganic Chemistry	V A and B	A. INORGANIC CHEMICAL ANALYSIS B. CHEMISTRY OF NOBLE GASES
December 16.12.2020 to 31.12.2020	Organic Chemistry	I II	BASICS OF ORGANIC CHEMISTRY INTRODUCTION TO STEREOCHEMISTRY
January 01.01.2021 to 15.01.2021	Organic Chemistry	III IV	CONFORMATIONAL ANALYSIS OF ALKANES CHEMISTRY OF ALIPHATIC HYDROCARBON
January 15.01.2021 to 30.01.2021	Organic Chemistry Physical Chemistry	V I (A) and (B)	AROMATIC HYDROCARBONS MATHEMATICAL CONCEPTS FOR CHEMIST COMPUTER
February 01.02.2021 to 15.02.2021	Physical Chemistry	II III	MOLECULAR VELOCITIES LIQUIDE STATE
February 15.02.2021 to 28.02.2021	Physical Chemistry	IV	A. LIQUIDE CRYSTALS COLLOID STATE
March 01.03.2021 to 15.03.2021	Physical Chemistry	IV	SOLID STATE
March 15.03.2021 to 31.03.2021	Physical Chemistry	V A	CHEMICAL KINETICS
April 01.04.2021 to 15.04.2021	Physical Chemistry	V B	A. CATALYSIS

Signature of Faculty member

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Date	Day	Topic Covered	Remark
1.11.20	Sunday	-	
2.11.20	Monday	Unit - I ^(A) Atomic Structure de-Broglie matter wave Heisenberg uncertainty Principle, Schrodinger wave equation.	
3.11.20	Tuesday	Quantum Number, Atomic orbital & shape, Aufbau & Pauli exclusion principle.	
4.11.20	Wednesday	- Kaviya - Chauth -	
5.11.20	Thursday	Hund's rule, electronic configuration	
6.11.20	Friday	[B] Periodic Properties: Atomic radii, ionic radii, Ionization energy	
7.11.20	Saturday	Electron gain enthalpy, Electronegativity	
8.11.20	Sunday	-	
9.11.20	Monday	Electronegativity, Effective nuclear charge	
10.11.20	Tuesday	Unit - II - Chemical Bonding I - Ionic Bond - Ionic structure, radius ratio, C.O. No., lattice defect, semico- nductor	
11.11.20	Wednesday to 16.11.20	-	Diwali Vacation -
17.11.20	Tuesday	Lattice Energy, Born	

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Date	Day	Topic covered	Remarks
		Haber cycle, solvation energy	
18.11.20	Wednesday	Polarising power, polarisability, Fajan's rule, Bond moment-dipole moment	
19.11.20	Thursday	% ionic character, Metallic bond, VBT	
20.11.20	Friday	Organic Chemistry - Unit-I - Basics of Organic Chemistry - Hybridisation, Inductive, Electromeric, resonance, mesomeric effect	
21.11.20	Saturday	Hyperconjugation, dipole moment, Electro & nucleophiles, Conformation	
22.11.20	Sunday	-	
23.11.20	Monday	Carbanions, Free radical, Carbenes, Nitrenes, Types of organic reaction	
24.11.20	Tuesday	Unit-II - Stereochemistry - Optical Iso - merism, Chirality, Relative & absolute configuration	
25.11.20	Wednesday	Newman & Fisher Projection, D-L nomenclature	

Date	Day	Topic covered	Remarks
26.11.20	Thursday	R-S nomenclature, Geometrical isomerism, E/Z method	
27.11.20	Friday	Unit-III - Conformational Analysis of Alkanes - ethane & butane, Cyclohexane & sugar, Energy diagram	
28.11.20	Saturday	Cycloalkanes, Baeyer strain theory, Stereoisomerism	
29.11.20	Sunday	-	
30.11.20	Monday	Gurukul Prakashan	

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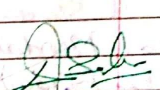
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B.Sc. - I

Month - December

Date	Day	Topic Covered	Remarks
1.12.20	Tuesday	Chair, boat & twisted boat conp. mono & disubstituted cyclo - alkanes.	
2.12.20	Wednesday	Unit - P - Mathematical Concept of Poisson's Chemist: - Logarithmic relation, Curve sketching	
3.12.20	Thursday	Differentiation, & maxima minima	
4.12.20	Friday	Integration, vectors, matrices.	
5.12.20	Saturday	Class at Nodal college	
6.12.20	Sunday		
7.12.20	Monday	determinants, Permutation, combination, probability.	
8.12.20	Tuesday	Unit - IV - Solid state: - Law of consistency of interfacial angle, Weiss and Miller indices.	
9.12.20	Wednesday	Symmetry elements, point & space group, Bravais lattice	
10.12.20	Thursday	X-ray diffraction, Bragg's eq.	
11.12.20	Friday	det. of crystal structure, crystal defect & semiconductor	
12.12.20	Saturday	Class at Nodal College	

Date	Day	Topic Covered	Remarks
13.12.20	Sunday		
14.12.20	Monday	Unit - V - [A] Chemical Kinetics: - Rate of reaction, rate law, order of reaction	
15.12.20	Tuesday	zero & First order reaction	
16.12.20	Wednesday	Second order reaction, det. of order of reaction	
17.12.20	Thursday	Chain reaction, Arrhenius theory.	
18.12.20	Friday	Guru Ghasidas Jayanti	
19.12.20	Saturday	Class at Nodal college	
20.12.20	Sunday		
21.12.20	Monday	Transition state Theory	
22.12.20	Tuesday	[B] Catalysis - Homogeneous & Heterogeneous Catalysis	
23.12.20	Wednesday	vacation to 27.12.20	
28.12.20	Monday	Characteristics of catalysts	
29.12.20	Tuesday	Enzyme catalyzed reaction	
30.12.20	Wednesday	Micellar catalyzed reaction	
31.12.20	Thursday	Industrial application of catalyst.	


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