

**KUMARI VIDYAVATI ANAND D.A.V. COLLEGE FOR WOMEN,  
KARNAL**

**Lesson Plan for the Odd Semester  
(July to November, 2025)**

**Name of the Teacher – Dr. Priyanka**

**Class- B.sc I ( 1<sup>st</sup> sem)**

**Subject- Chemistry Major**

**Paper- B23-CHE-101**

<b>July, 2025</b> <b>4<sup>th</sup> Week</b> <b>22 July – 26 July</b>	Dual behaviour of matter and radiation, de Broglie's relation  Localized and delocalized chemical bond, Van der Waals interactions
<b>27 July, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>28 July – 30 July</b>	Heisenberg's uncertainty principle, concept of atomic orbitals  Kinetic theory of gases, Maxwell's distribution of velocities and energies (derivation excluded)
<b>31 July</b>	<b>Shaheed Udham Singh Martyrdom Day</b>

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Subject- Chemistry Major

Paper- B23-CHE-101

August, 2025 1 <sup>st</sup> Week 1 Aug – 2 Aug	Practical
3 Aug, 2025	<b>Sunday</b>
2 <sup>nd</sup> Week 4 Aug – 8 Aug	Hyperconjugation, Concept of resonance and its applications Heisenberg's uncertainty principle, concept of atomic orbitals Calculation of root mean square velocity, average velocity and most probable velocity
9 Aug, 2025 10 Aug, 2025	<b>Raksha Bandhan</b> <b>Sunday</b>
3 <sup>rd</sup> Week 11 Aug - 14 Aug	Significance of quantum numbers, radial and angular wave functions Collision diameter, collision number, collision frequency and mean free path (Derivations excluded), Deviation of Real gases from ideal behavior
15 Aug, 2025 16 Aug, 2025 17 Aug, 2025	<b>Independence Day</b> <b>Janmashtmi</b> <b>Sunday</b>
4 <sup>th</sup> Week 18 Aug - 23 Aug	Inductive effect, electromeric effect and their comparison Normal and orthogonal wave functions, significance of $\Psi$ and $\Psi^2$ , probability distribution curves, shapes of s, p, d, f orbitals
24 Aug, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 25 Aug - 30 Aug	Derivation of Van der Waal's Equation of State Rules for filling electrons in various electrons in various orbitals Effective nuclear charge and Slater's rules
31 Aug, 2025	<b>Sunday</b>

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**Subject- Chemistry Major**

**Paper- B23-CHE-101**

September, 2025 1 <sup>st</sup> Week 1 Sept – 6 Sept	Compression factor ( application of Van der wall's equation of state) classification of periodic table, definition of atomic and ionic radii Revision and question practice
7 Sept , 2025	<b>Sunday</b>
2 <sup>nd</sup> Week 8 Sept – 13 Sept	Curved arrow notations, homolytic and heterolytic bond fission, Type of reagents: electrophiles and nucleophiles Ionization energy, electron affinity and electronegativity
14 Sept , 2025	<b>Sunday</b>
3 <sup>rd</sup> Week 15 Sept – 20 Sept	Trends in periodic table ( in s and p-block elements) Concept of critical temperature, critical pressure and critical volume Relationship between critical constants and Van der wall constants
21 Sept, 2025 22 Sept, 2025 23 Sept, 2025	<b>Sunday</b> <b>Maharaja Agrasen Jayanti</b> <b>Shaheed Diwas/Haryana War Heroes' Martyrdom Day</b>
4 <sup>th</sup> Week 24 Sept – 27 Sept	Pauling, Mulliken, Allred Rachow and Mulliken Jaffe's electronegativity scale  <b>Assignment-I</b>
28 Sept, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 29 Sept – 30 Sept, 2025	Elementary ideas of symmetry and symmetry elements, Seven crystal systems and fourteen Bravais lattices Reactive intermediates: carbocations, carbanions, Free radicals and carbenes

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Class- B.sc I ( 1<sup>st</sup> sem)

Subject- Chemistry Major

Paper- B23-CHE-101

October, 2025 1 <sup>st</sup> Week 1 Oct – 4 Oct	Types of organic reactions- substitution and addition  Revision and question practice
2 Oct, 2025 5 Oct, 2025	<b>Mahatma Gandhi Jayanti/Dussehra Sunday</b>
2 <sup>nd</sup> Week 6 Oct - 11 Oct	Classification of solids, law of constancy of interfacial angles Law of rational indices, Miller indices
7 Oct, 2025 12 Oct, 2025	<b>Maharishi Valmiki Jayanti/Maharaja Ajmidh Jayanti Sunday</b>
3 <sup>rd</sup> Week 13 Oct - 18 Oct	Sanderson's electron density ratio x-ray diffraction, Braggs law, Laue method, crystal method, powder method
19 Oct – 26 Oct	<b>Vacations (Diwali)</b>
5 <sup>th</sup> Week 27 Oct- 31 Oct	Rearrangement, Isomerization and pericyclic reaction Revision and Assignment-II

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Name of the Teacher – Dr. Priyanka

Class- B.sc I ( 1<sup>st</sup> sem)

Subject- Chemistry Major

Paper- B23-CHE-101

November, 2025 1 <sup>st</sup> Week 1 Nov, 2025 2 Nov, 2025	<b>Haryana Day Sunday</b>
2 <sup>nd</sup> Week 3 Nov - 8 Nov	<b>Sessional Exams</b>
5 Nov, 2025 9 Nov, 2025	<b>Guru Nanak Dev Jayanti Sunday</b>
3 <sup>rd</sup> Week 10 Nov - 15 Nov	Liquid state Numerical problems practice
16 Nov, 2025	<b>Sunday</b>
4 <sup>th</sup> Week 17 Nov - 22 Nov	Revision and test
23 Nov, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 24 November, 2025 Onwards	<b>University Examinations</b>

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**Lesson Plan for the Odd Semester  
(July to November, 2025)**

**Name of the Teacher – Dr. Priyanka**

**Class- B.sc I ( 1<sup>st</sup> sem)**

**Subject- Minor chemistry-I**

**Paper- B23-CHE-103**

<b>July, 2025</b> <b>4<sup>th</sup> Week</b> <b>22 July – 26 July</b>	Introduction to valence bond theory and VSEPR Theory
<b>27 July, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>28 July – 30 July</b>	-
<b>31 July</b>	<b>Shaheed Udham Singh Martyrdom Day</b>

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Class- B.sc I ( 1<sup>st</sup> sem)

Subject- Minor chemistry-I

Paper- B23-CHE-103

August, 2025 1 <sup>st</sup> Week 1 Aug – 2 Aug	-
3 Aug, 2025	<b>Sunday</b>
2 <sup>nd</sup> Week 4 Aug – 8 Aug	Shapes of simple inorganic molecules and ions based on valence shell electron pair repulsion (VSEPR) theory with suitable examples of tetrahedral, trigonal bipyramidal and octahedral arrangements
9 Aug, 2025 10 Aug, 2025	<b>Raksha Bandhan</b> <b>Sunday</b>
3 <sup>rd</sup> Week 11 Aug - 14 Aug	Shapes of simple inorganic molecules and ions based hybridization with suitable examples of tetrahedral, trigonal bipyramidal and octahedral arrangements
15 Aug, 2025 16 Aug, 2025 17 Aug, 2025	<b>Independence Day</b> <b>Janmashtmi</b> <b>Sunday</b>
4 <sup>th</sup> Week 18 Aug - 23 Aug	Problems practice
24 Aug, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 25 Aug - 30 Aug	Concept of reaction rates, rate equation factors influencing the rate of reaction, Order and molecularity of a reaction
31 Aug, 2025	<b>Sunday</b>

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**Class- B.sc I ( 1<sup>st</sup> sem)**

**Subject- Minor chemistry-I**

**Paper- B23-CHE-103**

September, 2025 1 <sup>st</sup> Week 1 Sept – 6 Sept	Integrated rate expression for zero and first order reaction
7 Sept, 2025	<b>Sunday</b>
2 <sup>nd</sup> Week 8 Sept – 13 Sept	Numerical practice
14 Sept, 2025	<b>Sunday</b>
3 <sup>rd</sup> Week 15 Sept – 20 Sept	Alkanes, nomenclature, classification of carbon atoms in alkanes.
21 Sept, 2025 22 Sept, 2025 23 Sept, 2025	<b>Sunday</b> <b>Maharaja Agrasen Jayanti</b> <b>Shaheed Divas/Haryana War Heroes' Martyrdom Day</b>
4 <sup>th</sup> Week 24 Sept – 27 Sept	Isomerism in alkanes, method of formation: Wurtz reaction  <b>Assignment-I</b>
28 Sept, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 29 Sept – 30 Sept, 2025	Kolbe reaction, Corey-House reaction Question practice



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Class- B.sc I ( 1<sup>st</sup> sem)

Subject- Minor chemistry-I

Paper- B23-CHE-103

October, 2025 1 <sup>st</sup> Week 1 Oct – 4 Oct	decarboxylation of carboxylic acids
2 Oct, 2025 5 Oct, 2025	<b>Mahatma Gandhi Jayanti/Dussehra Sunday</b>
2 <sup>nd</sup> Week 6 Oct - 11 Oct	Revision and question practice
7 Oct, 2025 12 Oct, 2025	<b>Maharishi Valmiki Jayanti/Maharaja Ajmidh Jayanti Sunday</b>
3 <sup>rd</sup> Week 13 Oct - 18 Oct	Test of unit II
19 Oct – 26 Oct	<b>Vacations (Diwali)</b>
5 <sup>th</sup> Week 27 Oct- 31 Oct	Numerical problems practice Assignment-II

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**Class- B.sc I ( 1<sup>st</sup> sem)**

**Subject- Minor chemistry-I**

**Paper- B23-CHE-103**

<b>November, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Nov, 2025</b> <b>2 Nov, 2025</b>	<b>Haryana Day</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>3 Nov - 8 Nov</b>	<b>Sessional Exams</b>
<b>5 Nov, 2025</b> <b>9 Nov, 2025</b>	<b>Guru Nanak Dev Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>10 Nov - 15 Nov</b>	Test of unit III
<b>16 Nov, 2025</b>	<b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>17 Nov - 22 Nov</b>	Revision and test
<b>23 Nov, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>24 November, 2025</b> <b>Onwards</b>	<b>University Examinations</b>

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**Name of the Teacher – Dr. Manju Singh and Dr. Rimi**

**Class – B. Sc. III Semester**

**Subject – Chemistry (Major)**

**Paper – Chemistry III (B23-CHE-301)**

<b>July, 2025</b> <b>4<sup>th</sup> Week</b> <b>22 July – 26 July</b>	<b>s and p-Block Elements:</b> Salient features of hydrides, oxides, halides, hydroxides of s-block elements. Structure, preparation and properties of Diborane and Borazine.
<b>27 July, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>28 July – 30 July</b>	-
<b>31 July</b>	<b>Shaheed Udham Singh Martyrdom Day</b>

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Name of the Teacher – Dr. Manju Singh and Dr. Rimi

Class – B. Sc. III Semester

Subject – Chemistry (Major)

Paper – Chemistry III (B23-CHE-301)

August, 2025 1 <sup>st</sup> Week 1 Aug – 2 Aug	Catenation, carbides, fluorocarbons, silicates (structural aspects), structure of oxides of Nitrogen and Phosphorous, structure of white and red phosphorus.  Electrolytic conduction, factors affecting electrolytic conduction
3 Aug, 2025	<b>Sunday</b>
2 <sup>nd</sup> Week 4 Aug – 8 Aug	Structure of oxyacids of Nitrogen, phosphorous, sulphur and chlorine and comparison of acidic strength of oxyacids.  specific conductance, molar conductance, equivalent conductance
9 Aug, 2025 10 Aug, 2025	<b>Raksha Bandhan</b> <b>Sunday</b>
3 <sup>rd</sup> Week 11 Aug - 14 Aug	Low chemical reactivity of noble gases, chemistry of xenon, structure and bonding in fluorides.
15 Aug, 2025 16 Aug, 2025 17 Aug, 2025	<b>Independence Day</b> <b>Janmashtmi</b> <b>Sunday</b>
4 <sup>th</sup> Week 18 Aug - 23 Aug	Oxides and oxyfluorides of xenon. Introduction, Nomenclature and structure of alkynes. Methods of formation: using Calcium carbide, dehydrohalogenation, Kolbe's electrolysis.  Relation among specific conductance, molar conductance, equivalent conductance, their variation with concentration
24 Aug, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 25 Aug - 30 Aug	Chemical reactions: Mechanism of electrophilic and nucleophilic addition reactions. formation of metal acetylides, addition of bromine and alkaline $\text{KMnO}_4$  Numerical problems
31 Aug, 2025	<b>Sunday</b>

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**Subject – Chemistry (Major)**

**Paper – Chemistry III (B23-CHE-301)**

September, 2025 1 <sup>st</sup> Week 1 Sept – 6 Sept	Ozonolysis. Acidity of alkynes. Concept of isomerism: Structural and Stereoisomerism. Symmetry elements, enantiomers, optical activity  Application of Kohlrausch's Law in calculation of conductance of weak electrolytes at infinite dilution
7 Sept, 2025	<b>Sunday</b>
2 <sup>nd</sup> Week 8 Sept – 13 Sept	Diastereomers, threo- and erythro-nomenclature, meso-compounds. Relative and absolute configuration, sequence rules, R and S system of nomenclature.  Concepts of pH and pK <sub>a</sub> , Buffer solution, Buffer action, Henderson – Hazel equation, Buffer mechanism of buffer action.
14 Sept, 2025	<b>Sunday</b>
3 <sup>rd</sup> Week 15 Sept – 20 Sept	E & Z system of nomenclature, Conformational analysis of ethane and n-butane  Reversible & irreversible cells, Calculation of thermodynamic quantities of cell reaction ( $\Delta G$ , $\Delta H$ & $\Delta K$ )
21 Sept, 2025 22 Sept, 2025 23 Sept, 2025	<b>Sunday</b> <b>Maharaja Agrasen Jayanti</b> <b>Shaheed Divas/Haryana War Heroes' Martyrdom Day</b>
4 <sup>th</sup> Week 24 Sept – 27 Sept	Practice Numerical Problems  Assignment- 1
28 Sept, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 29 Sept – 30 Sept, 2025	-

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**Subject – Chemistry (Major)**

**Paper – Chemistry III (B23-CHE-301)**

<b>October, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Oct – 4 Oct</b>	Conformations of cyclohexane, axial and equatorial bonds. Newman and Sawhorse projection formulae. Nomenclature, Aromatic nucleus and side chain, Huckels' rule of aromaticity.  Types of reversible electrodes – metal- metal ion
<b>2 Oct, 2025</b> <b>5 Oct, 2025</b>	<b>Mahatma Gandhi Jayanti/Dussehra</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>6 Oct - 11 Oct</b>	Aromatic electrophilic substitution, mechanism of nitration, halogenation, sulphonation, and Friedel- Crafts reaction. Energy profile diagrams.  Gas electrode, metal – insoluble salt- anion and redox electrodes
<b>7 Oct, 2025</b> <b>12 Oct, 2025</b>	<b>Maharishi Valmiki Jayanti/Maharaja Ajmidh Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>13 Oct - 18 Oct</b>	Activating, deactivating substituents and orientation. <b>Alkyl halides:</b> Nomenclature, methods of formation: from alkenes and alcohol, nucleophilic substitution reactions of alkyl halides  Nernst equation, Standard Hydrogen electrode, Reference electrodes
<b>19 Oct – 26 Oct</b>	<b>Vacations (Diwali)</b>
<b>5<sup>th</sup> Week</b> <b>27 Oct- 31 Oct</b>	SN2 and SN1 reactions with energy profile diagrams. <b>Assignment-II</b>

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**Paper – Chemistry III (B23-CHE-301)**

<b>November, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Nov, 2025</b> <b>2 Nov, 2025</b>	<b>Haryana Day</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>3 Nov - 8 Nov</b>	<b>Sessional Exams</b>
<b>5 Nov, 2025</b> <b>9 Nov, 2025</b>	<b>Guru Nanak Dev Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>10 Nov - 15 Nov</b>	Applications of EMF measurement in solubility product and potentiometric titrations using glass electrode.  <b>Aryl halides:</b> Methods of formation: halogenation, Sandmeyer reaction. The addition-elimination, and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions.
<b>16 Nov, 2025</b>	<b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>17 Nov - 22 Nov</b>	Relative reactivities of alkyl halides vs allyl, vinyl, and aryl halides.  Revision
<b>23 Nov, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>24 November, 2025</b> <b>Onwards</b>	<b>University Examinations</b>

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**Name of the Teacher – Dr. Manju Singh and Dr. Rimi**

**Class – B. Sc. III Semester**

**Subject – Chemistry (Minor)**

**Paper – Chemistry III (B23-CHE-301)**

<b>July, 2025</b> <b>4<sup>th</sup> Week</b> <b>22 July – 26 July</b>	<b>s and p-Block Elements:</b> Salient features of hydrides, oxides, halides, hydroxides of s-block elements. Structure, preparation and properties of Diborane and Borazine.
<b>27 July, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>28 July – 30 July</b>	Catenation, carbides, fluorocarbons, silicates (structural aspects), structure of oxides of Nitrogen and Phosphorous, structure of white and red phosphorus.  Electrolytic conduction, factors affecting electrolytic conduction
<b>31 July</b>	<b>Shaheed Udham Singh Martyrdom Day</b>



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Class – B. Sc. III Semester

Subject – Chemistry (Minor)

Paper – Chemistry III (B23-CHE-301)

August, 2025 1 <sup>st</sup> Week 1 Aug – 2 Aug	-
3 Aug, 2025	<b>Sunday</b>
2 <sup>nd</sup> Week 4 Aug – 8 Aug	Structure of oxyacids of Nitrogen, phosphorous, sulphur and chlorine and comparison of acidic strength of oxyacids.  specific conductance, molar conductance, equivalent conductance
9 Aug, 2025 10 Aug, 2025	<b>Raksha Bandhan</b> <b>Sunday</b>
3 <sup>rd</sup> Week 11 Aug - 14 Aug	low chemical reactivity of noble gases, chemistry of xenon, structure and bonding in fluorides.
15 Aug, 2025 16 Aug, 2025 17 Aug, 2025	<b>Independence Day</b> <b>Janmashtmi</b> <b>Sunday</b>
4 <sup>th</sup> Week 18 Aug - 23 Aug	oxides and oxyfluorides of xenon. Introduction, Nomenclature and structure of alkynes. Methods of formation: using Calcium carbide, dehydrohalogenation, Kolbe's electrolysis.  Relation among specific conductance, molar conductance, equivalent conductance, their variation with concentration
24 Aug, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 25 Aug - 30 Aug	Chemical reactions: Mechanism of electrophilic and nucleophilic addition reactions. formation of metal acetylides, addition of bromine and alkaline $\text{KMnO}_4$  Numerical problems
31 Aug, 2025	<b>Sunday</b>

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**Subject – Chemistry (Minor)**

**Paper – Chemistry III (B23-CHE-301)**

<b>September, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Sept – 6 Sept</b>	ozonolysis. Acidity of alkynes. Concept of isomerism: Structural and Stereoisomerism. Symmetry elements, enantiomers, optical activity  Application of Kohlrausch's Law in calculation of conductance of weak electrolytes at infinite dilution
<b>7 Sept, 2025</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>8 Sept – 13 Sept</b>	Diastereomers, threo- and erythro-nomenclature, meso-compounds. Relative and absolute configuration, sequence rules, R and S system of nomenclature.  Concepts of pH and pK <sub>a</sub> , Buffer solution, Buffer action, Henderson – Hazel equation, Buffer mechanism of buffer action.
<b>14 Sept, 2025</b>	<b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>15 Sept – 20 Sept</b>	E & Z system of nomenclature, Conformational analysis of ethane and n-butane  Reversible & irreversible cells, Calculation of thermodynamic quantities of cell reaction ( $\Delta G$ , $\Delta H$ & $K$ )
<b>21 Sept, 2025</b> <b>22 Sept, 2025</b> <b>23 Sept, 2025</b>	<b>Sunday</b> <b>Maharaja Agrasen Jayanti</b> <b>Shaheed Divas/Haryana War Heroes' Martyrdom Day</b>
<b>4<sup>th</sup> Week</b> <b>24 Sept – 27 Sept</b>	Practice Numerical Problems  Assignment- 1
<b>28 Sept, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>29 Sept – 30 Sept, 2025</b>	Conformations of cyclohexane, axial and equatorial bonds. Newman and Sawhorse projection formulae. Nomenclature,  Types of reversible electrodes – metal- metal ion

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**Class – B. Sc. III Semester**

**Subject – Chemistry (Minor)**

**Paper – Chemistry III (B23-CHE-301)**

<b>October, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Oct – 4 Oct</b>	Aromatic nucleus and side chain, Huckels' rule of aromaticity.
<b>2 Oct, 2025</b> <b>5 Oct, 2025</b>	<b>Mahatma Gandhi Jayanti/Dussehra</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>6 Oct - 11 Oct</b>	Aromatic electrophilic substitution, mechanism of nitration, halogenation, sulphonation, and Friedel- Crafts reaction. Energy profile diagrams.  Gas electrode, metal – insoluble salt- anion and redox electrodes
<b>7 Oct, 2025</b> <b>12 Oct, 2025</b>	<b>Maharishi Valmiki Jayanti/Maharaja Ajmidh Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>13 Oct - 18 Oct</b>	Activating, deactivating substituents and orientation. <b>Alkyl halides:</b> Nomenclature, methods of formation: from alkenes and alcohol, nucleophilic substitution reactions of alkyl halides  Nernst equation, Standard Hydrogen electrode, Reference electrodes
<b>19 Oct – 26 Oct</b>	<b>Vacations (Diwali)</b>
<b>5<sup>th</sup> Week</b> <b>27 Oct- 31 Oct</b>	SN2 and SN1 reactions with energy profile diagrams. <b>Assignment-II</b>

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**Paper – Chemistry III (B23-CHE-301)**

<b>November, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Nov, 2025</b> <b>2 Nov, 2025</b>	<b>Haryana Day</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>3 Nov - 8 Nov</b>	<b>Sessional Exams</b>
<b>5 Nov, 2025</b> <b>9 Nov, 2025</b>	<b>Guru Nanak Dev Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>10 Nov - 15 Nov</b>	Applications of EMF measurement in solubility product and potentiometric titrations using glass electrode.  <b>Aryl halides:</b> Methods of formation: halogenation, Sandmeyer reaction. The addition-elimination, and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions.
<b>16 Nov, 2025</b>	<b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>17 Nov - 22 Nov</b>	Relative reactivities of alkyl halides vs allyl, vinyl, and aryl halides.  Revision
<b>23 Nov, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>24 November, 2025</b> <b>Onwards</b>	<b>University Examinations</b>

**KUMARI VIDYAVATI ANAND D.A.V. COLLEGE FOR WOMEN,  
KARNAL**

**Lesson Plan for the Odd Semester  
(July to November, 2025)**

**Name of the Teacher – Dr. Manju Singh + Ms. Swati**

**Class – B.sc –III Year Major**

**Subject – Inorganic + Organic+ Physical Chemistry**

**Paper – B-23-CHE-501**

<b>July, 2025</b> <b>4<sup>th</sup> Week</b> <b>22 July – 26 July</b>	<b>Heterocyclic Compounds</b> Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine <b>Thermodynamics-II:</b> Third Law of Thermodynamics, Nernst Heat Theorem, Statement of concept of residual entropy evaluation absolute entropy from heat capacity data
<b>27 July, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>28 July – 30 July</b>	-
<b>31 July</b>	<b>Shaheed Udham Singh Martyrdom Day</b>

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Subject – Inorganic + Organic+ Physical Chemistry

Paper – B-23-CHE-501

August, 2025 1 <sup>st</sup> Week 1 Aug – 2 Aug	Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution Gibbs function and Helmholtz Function as thermodynamic quantities
3 Aug, 2025	Sunday
2 <sup>nd</sup> Week 4 Aug – 8 Aug	Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole
9 Aug, 2025 10 Aug, 2025	Raksha Bandhan Sunday
3 <sup>rd</sup> Week 11 Aug - 14 Aug	Test of Hetrocyclic.
15 Aug, 2025 16 Aug, 2025 17 Aug, 2025	Independence Day Janmashtmi Sunday
4 <sup>th</sup> Week 18 Aug - 23 Aug	Criteria for thermodynamic equilibrium and spontaneity. Variation of G with P, V and T, Partial molar properties, concept of chemical potential (numerical included) Coordination Compounds: Werner's theory of coordination compounds
24 Aug, 2025	Sunday
5 <sup>th</sup> Week 25 Aug - 30 Aug	EAN, chelates, nomenclature of coordination compounds, isomerism in coordination compounds. Test of Thermodynamics.
31 Aug, 2025	Sunday

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**Paper – B-23-CHE-501**

September, 2025 1 <sup>st</sup> Week 1 Sept – 6 Sept	Metal Ligand Bonding in Transition Metal Complexes: Valence bond theory, applications and their Limitation.  <b>Phase Equilibria:</b> Statement and the meaning of terms-phase component and degree of freedom
7 Sept, 2025	<b>Sunday</b>
2 <sup>nd</sup> Week 8 Sept – 13 Sept	Elementary idea of CFT (Only structural aspects), Crystal field splitting in octahedral  Thermodynamic derivation of Gibbs phase rule, Phase equilibria of one component system-water system
14 Sept, 2025	<b>Sunday</b>
3 <sup>rd</sup> Week 15 Sept – 20 Sept	Crystal field splitting in tetrahedral and square planer complexes.  Thermodynamic derivation of Gibbs phase rule, Phase equilibria of one component system-water system
21 Sept, 2025 22 Sept, 2025 23 Sept, 2025	<b>Sunday</b> <b>Maharaja Agrasen Jayanti</b> <b>Shaheedi Divas/Haryana War Heroes' Martyrdom Day</b>
4 <sup>th</sup> Week 24 Sept – 27 Sept	<b>Assignment -1</b>  Magnetic properties of transition metal complexes: Types of magnetic materials phase equilibria of two component systems solid-liquid equilibria, simple Eutectic Pb-Ag system.
28 Sept, 2025	<b>Sunday</b>
5 <sup>th</sup> Week 29 Sept – 30 Sept, 2025	-

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**Subject – Inorganic + Organic+ Physical Chemistry**

**Paper – B-23-CHE-501**

<b>October, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Oct – 4 Oct</b>	Method of determination, spin only formula, basic idea of L-S coupling. Quantum Mechanics-I: Black body radiation, plank's radiation law, Explanation of spectral distribution of black body radiation
<b>2 Oct, 2025</b> <b>5 Oct, 2025</b>	<b>Mahatma Gandhi Jayanti/Dussehra</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>6 Oct - 11 Oct</b>	Test of chapter-2 (Magnetic properties of transition metal complexes ) Heat capacity of solids, Need of quantum mechanics, postulates of quantum mechanics, quantum mechanical operator
<b>7 Oct, 2025</b> <b>12 Oct, 2025</b>	<b>Maharishi Valmiki Jayanti/Maharaja Ajmidh Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>13 Oct - 18 Oct</b>	Organic Synthesis via Enolates Acidity of $\alpha$ -hydrogens, alkylation of diethyl malonate and ethyl acetoacetate Commutation relations, Hamiltonian operator, Role of operators to derive Schrodinger wave equation,
<b>19 Oct – 26 Oct</b>	<b>Vacations (Diwali)</b>
<b>5<sup>th</sup> Week</b> <b>27 Oct- 31 Oct</b>	<b>Assignment-2</b> Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate. Application Schrodinger wave equation in determination of wave function and energy of a particle in one dimensional box Spectroscopy-I: Electromagnetic radiations reasons of electromagnetic spectrum



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**Class – B.sc –III Year Major**

**Subject – Inorganic + Organic+ Physical Chemistry**

**Paper – B-23-CHE-501**

<b>November, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Nov, 2025</b> <b>2 Nov, 2025</b>	<b>Haryana Day</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>3 Nov - 8 Nov</b>	<b>Sessional Exams</b>
<b>5 Nov, 2025</b> <b>9 Nov, 2025</b>	<b>Guru Nanak Dev Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>10 Nov - 15 Nov</b>	Basic features of spectroscopy, introduction to molecular spectroscopy and its difference from atomic spectroscopy, signal to noise ratio, resolving power of spectrophotometer, BornOppenheimer approximation, Concept of degree of freedom.
<b>16 Nov, 2025</b>	<b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>17 Nov - 22 Nov</b>	Rotational Spectrum:Energy levels of rigid rotator of diatomic molecules, selection rules, spectral intensity distribution using Maxwell-Boltzmann distribution Determination of bond length and concept of isotopic effect.
<b>23 Nov, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>24 November, 2025</b> <b>Onwards</b>	<b>University Examinations</b>

**KUMARI VIDYAVATI ANAND D.A.V. COLLEGE FOR WOMEN,  
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**Lesson Plan for the Odd Semester  
(July to November, 2025)**

**Name of the Teacher – Dr. Rimi + Ms. Swati**

**Class – B.sc –III Year VOC**

**Subject – Chemistry**

**Paper – B23-CHE-505**

<b>July, 2025</b> <b>4<sup>th</sup> Week</b> <b>22 July – 26 July</b>	Carboxylic Acids Nomenclature of Carboxylic acids, structure and bonding, physical properties, acidity of carboxylic acids Pharmaceutical Compounds Classification, structure and therapeutic uses .
<b>27 July, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>28 July – 30 July</b>	Effects of substituents on acid strength. General methods of preparation of carboxylic acids Antipyretics: Paracetamol (with synthesis),
<b>31 July</b>	<b>Shaheed Udham Singh Martyrdom Day</b>

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(July to November, 2025)**

**Name of the Teacher – Dr. Rimi + Ms. Swati**

**Class – B.sc –III Year VOC**

**Subject – Inorganic + Organic + Physical Chemistry**

**Paper – B23-CHE-505**

<b>August, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Aug – 2 Aug</b>	-
<b>3 Aug, 2025</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>4 Aug – 8 Aug</b>	Reactions of carboxylic acids. Hell-Volhard-Zelinsky reaction. Reduction of carboxylic acids. Mechanism of decarboxylation. Analgesics: Ibuprofen (with synthesis), Antimalarials: Chloroquine (with synthesis)
<b>9 Aug, 2025</b> <b>10 Aug, 2025</b>	<b>Raksha Bandhan</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>11 Aug - 14 Aug</b>	Carboxylic Acid Derivatives Nomenclature and structure of Carboxylic acid derivatives, Physical properties,
<b>15 Aug, 2025</b> <b>16 Aug, 2025</b> <b>17 Aug, 2025</b>	<b>Independence Day</b> <b>Janmashtmi</b> <b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>18 Aug - 23 Aug</b>	Antibiotics: An elementary idea, Classification, Synthesis Relative reactivities of acyl derivatives, interconversion of acid derivatives by nucleophilic acyl substitution
<b>24 Aug, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>25 Aug - 30 Aug</b>	Uses of Penicillin-G, chloramphenicol, Mechanisms of esterification and hydrolysis (acidic and basic).
<b>31 Aug, 2025</b>	<b>Sunday</b>

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**Subject – Inorganic + Organic+ Physical Chemistry**

**Paper – B23-CHE-505**

<b>September, 2025 1<sup>st</sup> Week 1 Sept – 6 Sept</b>	Test of chapter Carboxylic acid and its Derivatives  Medicinal values of curcumin (haldi), azadirachtin (neem), vitamin C and antacid (ranitidine).
<b>7 Sept, 2025</b>	<b>Sunday</b>
<b>2<sup>nd</sup> Week 8 Sept – 13 Sept</b>	Amines Structure and nomenclature of amines, physical properties.  Suphur Containing Compounds Preparation and reactions of thiols, thioethers and sulphonic acids.
<b>14 Sept, 2025</b>	<b>Sunday</b>
<b>3<sup>rd</sup> Week 15 Sept – 20 Sept</b>	Separation of a mixture of primary, secondary and tertiary amines. Structural features affecting basicity of amines.  Polynuclear Benzenoid Aromatic Hydrocarbons
<b>21 Sept, 2025 22 Sept, 2025 23 Sept, 2025</b>	<b>Sunday</b> <b>Maharaja Agrasen Jayanti</b> <b>Shaheedi Divas/Haryana War Heroes' Martyrdom Day</b>
<b>4<sup>th</sup> Week 24 Sept – 27 Sept</b>	<b>Assignment -1</b>  <b>Test of Chapter- Pharmaceutical Compounds</b>
<b>28 Sept, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week 29 Sept – 30 Sept, 2025</b>	Aromaticity of polynuclear hydrocarbons  Preparation of alkyl and aryl amines (reduction of nitro compounds, nitriles, reductive amination of aldehydic and ketonic compound)

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**Class – B.sc –III Year VOC**

**Subject – Inorganic + Organic+ Physical Chemistry**

**Paper – B23-CHE-505**

<b>October, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Oct – 4 Oct</b>	Structure elucidation of naphthalene Gabriel phthalimide reaction, Hofmann bromamide reaction
<b>2 Oct, 2025</b> <b>5 Oct, 2025</b>	<b>Mahatma Gandhi Jayanti/Dussehra</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>6 Oct - 11 Oct</b>	Preparation and properties of naphthalene Electrophilic aromatic substitution in aryl amines,
<b>7 Oct, 2025</b> <b>12 Oct, 2025</b>	<b>Maharishi Valmiki Jayanti/Maharaja Ajmidh Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>13 Oct - 18 Oct</b>	Preparation and properties of phenanthrene reactions of amines with nitrous acid.
<b>19 Oct – 26 Oct</b>	<b>Vacations (Diwali)</b>
<b>5<sup>th</sup> Week</b> <b>27 Oct- 31 Oct</b>	<b>Assignment-2</b> <b>Queries Of Chapter -2</b>

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**Name of the Teacher – Dr. Rimi + Ms. Swati**  
**Class – B.sc –III Year VOC**  
**Subject – Inorganic + Organic+ Physical Chemistry**  
**Paper – B23-CHE-505**

<b>November, 2025</b> <b>1<sup>st</sup> Week</b> <b>1 Nov, 2025</b> <b>2 Nov, 2025</b>	<b>Haryana Day</b> <b>Sunday</b>
<b>2<sup>nd</sup> Week</b> <b>3 Nov - 8 Nov</b>	<b>Sessional Exams</b>
<b>5 Nov, 2025</b> <b>9 Nov, 2025</b>	<b>Guru Nanak Dev Jayanti</b> <b>Sunday</b>
<b>3<sup>rd</sup> Week</b> <b>10 Nov - 15 Nov</b>	Preparation and properties of anthracene.
<b>16 Nov, 2025</b>	<b>Sunday</b>
<b>4<sup>th</sup> Week</b> <b>17 Nov - 22 Nov</b>	<b>Test of Chapter-4</b> <b>Queries Of Chapter -3</b>
<b>23 Nov, 2025</b>	<b>Sunday</b>
<b>5<sup>th</sup> Week</b> <b>24 November, 2025</b> <b>Onwards</b>	<b>University Examinations</b>