

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Dr. Manju Singh

Class- B.Sc. II (4th SEM)

Subject- Chemistry

Paper- Physical Chemistry

February, 2023 1 st Week 1 Feb - 4 Feb	Thermodynamics Second law of thermodynamics, need for the law, different statements of the law.
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2 nd Week 6 Feb - 11 Feb	Carnot's cycles and its efficiency, Carnot's theorem.
12 Feb, 2023	Sunday
3 rd Week 13 Feb - 17 Feb	Thermodynamics scale of temperature, Concept of entropy – entropy as a state function, entropy as a function of V & T.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4 th Week 20 Feb - 25 Feb	Entropy as a function of P & T, entropy change in physical change, entropy as a criteria of spontaneity and equilibrium.
26 Feb, 2023	Sunday
5 th Week 27 Feb - 28 Feb	Third law of thermodynamics: Nernst heat theorem, statement of concept of residual entropy, evaluation of absolute entropy from heat capacity data.

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Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Dr. Manju Singh

Class- B.Sc. II (4th SEM)

Subject- Chemistry

Paper- Physical Chemistry

March, 2023 1 st Week 1 March - 4 March	Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities.
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	G as criteria for thermodynamic equilibrium and spontaneity, its advantage over entropy change. Variation of G with P, V and T.
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Assignment-1 Electrochemistry Electrolytic and Galvanic cells – reversible & irreversible cells, conventional representation of electrochemical cells.
23 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev
26 March, 2023	Sunday
30 March, 2023	Ram Navmi
5 th Week 27 March - 31 March	Calculation of thermodynamic quantities of cell reaction (ΔG , ΔH & K).

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Lesson Plan For The Even Semester (February to May 2023)

Name of the Teacher – Dr. Manju Singh

Class- B.Sc. II (4th SEM)

Subject- Chemistry

Paper- Physical Chemistry

April, 2023 1 st Week 1 April, 2023	Types of reversible electrodes – metal- metal ion, gas electrode, metal – insoluble salt- anion and redox electrodes. Electrode reactions.
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	Nernst equations, derivation of cell EMF and single electrode potential. Numericals
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	Assignment-2 Standard Hydrogen electrode, reference electrodes, standard electrode potential, sign conventions, Concentration cells with and without transference.
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ul-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	Liquid junction potential and its measurement. Applications of EMF measurement in solubility product
30 April, 2023	Sunday

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Lesson Plan for the Even Semester (February to May, 2023)

Name of the Teacher – Dr. Manju Singh

Class- B.Sc. II (4th SEM)

Subject- Chemistry

Paper- Physical Chemistry

May, 2023 1 st Week 1 May - 6 May	Potentiometric titrations using glass electrode. Numericals
7 May, 2023	Sunday
2 nd Week 8 May - 13 May	Revision
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Dr. Manju Singh

Class- B.Sc. III (6th SEM)

Subject- Chemistry

Paper- Physical Chemistry

February, 2023 1 st Week 1 Feb - 4 Feb	Introduction to Statistical Mechanics Need for statistical thermodynamics, thermodynamic probability.
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2 nd Week 6 Feb - 11 Feb	Maxwell Boltzmann distribution statistics, Born -Oppenheimer approximation.
12 Feb, 2023	Sunday
3 rd Week 13 Feb - 17 Feb	Partition function and its physical significance, Factorization of partition function.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4 th Week 20 Feb - 25 Feb	Photochemistry Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of photochemistry:
26 Feb, 2023	Sunday
5 th Week 27 Feb - 28 Feb	Grotthus-Drapper law, Stark Einstein law (law of photochemical equivalence).

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Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Dr. Manju Singh

Class- B.Sc. III (6th SEM)

Subject- Chemistry

Paper- Physical Chemistry

March, 2023 1 st Week 1 March - 4 March	Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing).
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	Quantum yield, photosensitized reactions-energy transfer processes (simple examples).
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Assignment-1 Solutions, Dilute Solutions and Colligative Properties: Ideal and non-ideal solutions, methods of expressing concentrations of solutions, Dilute solutions, Raoult's law.
23 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev
26 March, 2023	Sunday
30 March, 2023	Ram Navmi
5 th Week 27 March - 31 March	Colligative properties: (i) relative lowering of vapour pressure (ii) Elevation in boiling point (iii) depression in freezing point (iv) osmotic pressure.

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Lesson Plan For The Even Semester (February to May 2023)

Name of the Teacher – Dr. Manju Singh

Class- B.Sc. III (6th SEM)

Subject- Chemistry

Paper- Physical Chemistry

April, 2023 1 st Week 1 April, 2023	Thermodynamic derivation of relation between amount of solute and elevation in boiling point and depression in freezing point.
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	Applications in calculating molar masses of normal , dissociated and associated solutes in solution.
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	Assignment-2 Phase Equilibrium Statement and meaning of the terms – phase, component and degree of freedom, thermodynamic derivation of Gibbs phase rule,
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ul-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	Phase equilibria of one component system –Example – water system.
30 April, 2023	Sunday

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Lesson Plan for the Even Semester (February to May, 2023)

Name of the Teacher – Dr. Manju Singh

Class- B.Sc. III (6th SEM)

Subject- Chemistry

Paper- Physical Chemistry

May, 2023 1 st Week 1 May - 6 May	Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system, desilverisation of lead.
7 May, 2023	Sunday
2 nd Week 8 May - 13 May	Revision
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester

(February to May, 2023)

Name of the Teacher – Ms. Rajni

Class- B.Sc. II (4th sem)

Subject- Chemistry

Paper- Organic Chemistry

February, 2023 1 st Week 1 Feb - 4 Feb	Infrared (IR) absorption spectroscopy Molecular vibrations, Hooke 's law, selection rules, intensity and position of IR bands, measurement of IR spectrum, fingerprint region,
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2 nd Week 6 Feb - 11 Feb	characteristic absorptions of various functional groups and interpretation of IR spectra of simple organic compounds. Applications of IR spectroscopy in structure elucidation of simple organic compounds.
12 Feb, 2023	Sunday
3 rd Week 13 Feb - 17 Feb	Amines Structure and nomenclature of amines, physical properties. Separation of a mixture of primary, secondary and tertiary amines. Structural features affecting basicity of amines.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4 th Week 20 Feb - 25 Feb	Preparation of alkyl and aryl amines (reduction of nitro compounds, nitriles, reductive amination of aldehydic and ketonic compounds. Gabriel - phthalimide reaction, Hofmann bromamide reaction.
26 Feb, 2023	Sunday
5 th Week 27 Feb - 28 Feb	Assignment-1+ Electrophilic aromatic substitution in aryl amines, reactions of amines with nitrous acid.

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Lesson Plan For The Even Semester

(February to May, 2023)

Name of the Teacher – Ms. Rajni

Class- B.Sc. II (4th Sem)

Subject- Chemistry

Paper- Organic Chemistry

March, 2023 1 st Week 1 March - 4 March	Diazonium Salts Mechanism of diazotisation, structure of benzene diazonium chloride, Replacement of diazo group by H, OH, F, Cl, Br, I, NO ₂ and CN groups,
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	reduction of diazonium salts to hyrazines, coupling reaction and its synthetic application.
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Aldehydes and Ketones Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides,
23 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev
26 March, 2023	Sunday
30 March, 2023	Ram Navmi
5 th Week 27 March - 31 March	advantage of oxidation of alcohols with chromium trioxide (Sarett reagent) pyridinium chlorochromate (PCC) and pyridinium dichromate

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Lesson Plan For The Even Semester

(February to May 2023)

Name of the Teacher – Ms. Rajni

Class- B.Sc. II (4th Sem)

Subject- Chemistry

Paper- Organic Chemistry

April, 2023 1 st Week 1 April, 2023	Assignment-2 + Physical properties, Comparison of reactivities of aldehydes and ketones.
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condensations.
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	Condensation with ammonia and its derivatives.
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ul-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	Wittig reaction. Mannich reaction and Cannizzaro reaction. Oxidation of aldehydes, Baeyer–Villiger oxidation of ketones,
30 April, 2023	Sunday

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Lesson Plan for the Even Semester

(February to May, 2023)

Name of the Teacher – Ms. Rajni

Class- B.Sc. II (4th Sem)

Subject- Chemistry

Paper- Organic Chemistry

May, 2023 1 st Week 1 May - 6 May	MPV, Clemmensen, Wolff-Kishner, LiAlH ₄ and NaBH ₄ reductions.
7 May, 2023	Sunday
2 nd Week 8 May - 13 May	Revision
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations

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Lesson Plan For The Even Semester

(February to May, 2023)

Name of the Teacher – Ms. Rajni

Class- B.Sc. III (6th sem)

Subject- Chemistry

Paper- Organic Chemistry

February, 2023 1 st Week 1 Feb - 4 Feb	Organic Synthesis <i>via</i> Enolates Acidity of α -hydrogens, alkylation of diethyl malonate and ethyl acetoacetate.
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2 nd Week 6 Feb - 11 Feb	Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.
12 Feb, 2023	Sunday
3 rd Week 13 Feb - 17 Feb	Heterocyclic Compounds Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4 th Week 20 Feb - 25 Feb	Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution.
26 Feb, 2023	Sunday
5 th Week 27 Feb - 28 Feb	Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole.

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Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Rajni

Class- B.Sc. III (6th sem)

Subject- Chemistry

Paper- Organic Chemistry

March, 2023 1 st Week 1 March - 4 March	Introduction to condensed five and six- membered heterocycles,
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	Preparation and reactions of indole, quinoline and isoquinoline with special reference to Fischer indole synthesis, Skraup synthesis and Bischler Napieralski synthesis.
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Assignment-1+ Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline.
23 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev
26 March, 2023	Sunday
30 March, 2023	Ram Navmi
5 th Week 27 March - 31 March	Amino Acids, Peptides & Proteins Classification, of amino acids. Acid-base behavior, isoelectric point and electrophoresis.

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Lesson Plan For The Even Semester (February to May 2023)

Name of the Teacher – Ms. Rajni

Class- B.Sc. III (6th sem)

Subject- Chemistry

Paper- Organic Chemistry

April, 2023 1 st Week 1 April, 2023	Preparation of α -amino acids. Structure and nomenclature of peptides and proteins.
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	Classification of proteins. Peptide structure determination, end group analysis, selective hydrolysis of peptides.
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	Assignment-2+ Classical peptide synthesis, solid-phase peptide synthesis. Structures of peptides and proteins : Primary & Secondary structure.
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ui-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	Synthetic Polymers Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers.
30 April, 2023	Sunday

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Lesson Plan for the Even Semester
(February to May, 2023)

Name of the Teacher – Ms Rajni

Class- B.Sc. III (6th sem)

Subject- Chemistry

Paper- Organic Chemistry

May, 2023 1st Week 1 May - 6 May	Condensation or step growth polymerization. Polyesters, polyamides, phenol formaldehyde resins. Natural and synthetic rubbers.
7 May, 2023	Sunday
2nd Week 8 May - 13 May	Revision
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. I (2nd sem)

Subject- Chemistry

Paper- Inorganic Chemistry

February, 2023 1 st Week 1 Feb - 4 Feb	Hydrogen Bonding and Van der Waals forces Hydrogen Bonding – Definition, types, effects of hydrogen bonding on properties of substances, application Brief discussion of various types of Van der Waals forces.
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2 nd Week 6 Feb - 11 Feb	Metallic Bond and semiconductors Metallic bond – Qualitative idea of valence bond and Band theories of metallic bond (conductors, semiconductors, insulators).
12 Feb, 2023	Sunday
3 rd Week 13 Feb - 17 Feb	Semiconductors – Introduction, types and applications.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4 th Week 20 Feb - 25 Feb	s-Block elements Comparative study of the elements including diagonal relationship, Anomalous behaviour of Lithium and Beryllium compared to other elements in the same group.
26 Feb, 2023	Sunday
5 th Week 27 Feb - 28 Feb	Silent features of hydrides, oxides, halides, hydroxides (methods of preparation excluded), behaviour of solution in liquid NH ₃ .

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Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. I (2nd Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

March, 2023 1 st Week 1 March - 4 March	Chemistry of Noble Gases General physical properties, low chemical reactivity, chemistry of xenon, structure and bonding in fluorides, oxides and oxyfluorides of xenon.
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	ASSINGMENT -1 p-Block elements: Electronic configuration, atomic and ionic size, metallic character, melting point, ionization energy, electron affinity, electronegativity, inert pair effect and diagonal relationship
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Boron family (13th group): Diborane: Preparation, properties and structure (as an example of electron deficient compound and multicenter bonding), Borazine chemical properties and structure.
23 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev
26 March, 2023	Sunday
30 March, 2023	Ram Navmi
5 th Week 27 March - 31 March	Relative strength of Trihalide of Boron as lewis acids, structure of aluminium(III) chloride.

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Lesson Plan For The Even Semester (February to May 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. I (2nd Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

April, 2023 1 st Week 1 April, 2023	Carbon family and Nitrogen family (14th and 15th group): Catenation, Carbides, fluoro carbons, silicates (structural aspects).
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	Oxides: Structure of oxides of nitrogen and phosphorus
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	ASSIGNMENT-2 Oxyacids : Structure and relative acid strength of oxy acids of nitrogen and phosphorus, structure of white and Red phosphorus
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ul-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	Oxygen family (16th group): Oxy acids of sulphur – structure and acidic strength, Hydrogen Peroxide – properties and uses.
30 April, 2023	Sunday

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Lesson Plan for the Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.sc I(2nd Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

May, 2023 1 st Week 1 May - 6 May	Halogen family (17th group): Interhalogen compounds (their properties and structures) Hydra and oxy acids of chlorine – structure and comparison of acid strength, cationic nature of Iodine.
7 May, 2023	Sunday
2 nd Week 8 May - 13 May	Revision
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. I (2nd sem)

Subject- Chemistry

Paper- Physical Chemistry

February, 2023 1 st Week 1 Feb - 4 Feb	CHEMICAL KINETICS: Rate of reaction, rate equation and its types, factors influencing the rate of a reaction - Concentration, temperature, pressure, solvent, light, catalyst.
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2 nd Week 6 Feb - 11 Feb	Order of a reaction, integrated rate expression for zero order, first order, second order and third order reactions.
12 Feb, 2023	Sunday
3 rd Week 13 Feb - 17 Feb	Assignment-1 Half life period of a reaction, Methods of determination of order of reaction. Effect of temperature on the rate of reaction- Arrhenius equation.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4 th Week 20 Feb - 25 Feb	Theories of reaction rate- Simple collision theory for unimolecular and bimolecular collision.
26 Feb, 2023	Sunday
5 th Week 27 Feb - 28 Feb	Transition state theory of bimolecular reactions.

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. I (2nd Sem)

Subject- Chemistry

Paper- Physical Chemistry

March, 2023 1 st Week 1 March - 4 March	.ELECTROCHEMISTRY: Electrolytic conduction, Factors affecting electrolytic conduction, specific conduction, molar conductance, equivalent conductance.
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	Relation among specific conduction, molar conductance, equivalent conductance and their variation with concentration. Numericals based on specific conduction, molar conductance, equivalent conductance and their variation with concentration.
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Arrhenius theory of ionization, Ostwald's Dilution Law .
23 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev
26 March, 2023	Sunday
30 March, 2023	Ram Navmi
5 th Week 27 March - 31 March	Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only).

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Lesson Plan For The Even Semester (February to May 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. I (2nd Sem)

Subject- Chemistry

Paper- Physical Chemistry

April, 2023 1 st Week 1 April, 2023	Assignment-2 Transport number, definition and determination by Hittorfs methods.
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	Kohlrausch's law. Applications of conductivity measurements: determination of degree of dissociation, determination of K_a of acids
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	Calculation of molar ionic conductance and effect of viscosity, temperature and pressure on it.
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ul-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	Determination of solubility product of sparingly soluble salts, conductometric titrations.
30 April, 2023	Sunday

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Lesson Plan for the Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. I (2nd Sem)

Subject- Chemistry

Paper- Physical Chemistry

May, 2023 1 st Week 1 May - 6 May	Definition of pH and pK_a , Buffer action, Henderson-Hazel equation, Buffer mechanism of buffer action
7 May, 2023	Sunday
2 nd Week 8 May - 13 May	Tests and Revision.
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. II (4th sem)

Subject- Chemistry

Paper- Inorganic Chemistry

February, 2023 1 st Week 1 Feb - 4 Feb	Basic Introduction OF F-BLOCK ELEMENTS
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2 nd Week 6 Feb - 11 Feb	Chemistry of f-Block elements Lanthanides: Electronic structure, oxidation states, magnetic properties, complex formation.
12 Feb, 2023	Sunday
3 rd Week 13 Feb - 17 Feb	Colour, ionic radii and lanthanide contraction, occurrence, separation of lanthanides, Lanthanide compounds.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4 th Week 20 Feb - 25 Feb	Test + Doubts
26 Feb, 2023	Sunday
5 th Week 27 Feb - 28 Feb	Actinides: General characteristics of actinides.

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Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. II (4th Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

March, 2023 1 st Week 1 March - 4 March	Chemistry of separation of Np, Pu and Am from uranium.
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	Transuranic elements, comparison of properties of Lanthanides and actinides with transition elements.
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Test +Doubts
23 March, 2023 26 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev Sunday
30 March, 2023	Ram Navmi
5 th Week 27 March - 31 March	Theory of Qualitative and Quantitative Analysis Chemistry of analysis of various groups of basic and acidic radicals.

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Lesson Plan For The Even Semester (February to May 2023)

Name of the Teacher – Ms. Shalini

Class- B.Sc. II (4th Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

April, 2023 1 st Week 1 April, 2023	Chemistry of interference of acid radicals including their removal in the analysis of basic radicals.
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	ASSIGNMENT-2 Common Ion effect, solubility product.
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	Tests + Revision
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ul-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	Theory of precipitation, co-precipitation.
30 April, 2023	Sunday

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Lesson Plan for the Even Semester (February to May, 2023)

Name of the Teacher – Ms. Shalini

Class- B.sc II (4th Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

May, 2023 1 st Week 1 May - 6 May	Theory of co-precipitation, post-precipitation, purification of precipitates.
7 May, 2023	Sunday
2 nd Week 8 May - 13 May	Revision
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Rubal

Class- B.Sc. I (2nd sem)

Subject- Chemistry

Paper- Organic Chemistry

February, 2023 1st Week 1 Feb - 4 Feb	Alkenes Nomenclature of alkenes, mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halide. The Saytzeff rule, Hofmann elimination, physical properties and relative stabilities of alkenes.
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2nd Week 6 Feb - 11 Feb	Chemical reactions of alkenes ,mechanisms involved in hydrogenation, electrophilic and free radical additions, Markownikoff's rule, hydroboration–oxidation, oxymercurationreduction, ozonolysis, hydration, hydroxylation and oxidation with KMnO ₄
12 Feb, 2023	Sunday
3rd Week 13 Feb - 17 Feb	Arenes and Aromaticity Nomenclature of benzene derivatives: Aromatic nucleus and side chain. Aromaticity: the Huckel rule, aromatic ions, annulenes up to 10 carbon atoms, aromatic, anti-aromatic and non-aromatic compounds.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4th Week 20 Feb - 25 Feb	Aromatic electrophilic substitution • general pattern of the mechanism, mechanism of nitration, halogenation, sulphonation, and Friedel-Crafts reaction.
26 Feb, 2023	Sunday
5th Week 27 Feb - 28 Feb	Assignment-1+ Energy profile diagrams. Activating, deactivating substituents and orientation.

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Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Rubal

Class- B.Sc. I (2nd Sem)

Subject- Chemistry

Paper- Organic Chemistry

March, 2023 1 st Week 1 March - 4 March	Dienes and Alkynes Nomenclature and classification of dienes: isolated, conjugated and cumulated dienes. Structure of butadiene. Chemical reactions :1,2 and 1,4 additions (Electrophilic & free radical mechanism).
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	Diels- Alder reaction ,Nomenclature, structure and bonding in alkynes. Method of formation. Chemical reactions of alkynes, acidity of alkynes.
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Assignment-2+ Alkyl and Aryl Halides : Mechanism of electrophilic and nucleophilic addition reaction ,hydrocarbon –oxidation of alkynes.
23 March, 2023 26 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev Sunday
30 March, 2023	Ram Navmi
5 th Week 27 March - 31 March	Nomenclature and classes of alkyl halides.

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Lesson Plan For The Even Semester (February to May 2023)

Name of the Teacher – Ms. Rubal
 Class- B.Sc. I (2nd Sem)
 Subject- Chemistry
 Paper- Organic Chemistry

April, 2023 1 st Week 1 April, 2023	Methods of formation, chemical reaction. Mechanism and stereochemistry of nucleophilic substitution reaction of alkyl halide.
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	SN ¹ and SN ² reactions with energy profile diagram .
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	Methods of formation and reactions of aryl halides.
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ul-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	The addition elimination and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions.
30 April, 2023	Sunday

KVA DAV College for Women, Karnal
Lesson Plan for the Even Semester
(February to May, 2023)

Name of the Teacher – Ms. Rubal
Class- B.sc I(2ND Sem)
Subject- Chemistry
Paper- Organic Chemistry

May, 2023 1st Week 1 May - 6 May	Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides.
7 May, 2023	Sunday
2nd Week 8 May - 13 May	Revision + Tests
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Rubal

Class- B.Sc. III (6th sem)

Subject- Chemistry

Paper- Inorganic Chemistry

February, 2023 1 st Week 1 Feb - 4 Feb	Organometallic chemistry : Definition, classification and nomenclature of organometallic compounds.
5 Feb, 2023	Guru Ravidas Jayanti , Sunday
2 nd Week 6 Feb - 11 Feb	Preparation, properties and bonding of alkyls of Li, Al.
12 Feb, 2023	Sunday
3 rd Week 13 Feb - 17 Feb	Preparation, properties and bonding of alkyl of Hg and Sn.
18 Feb, 2023 19 Feb, 2023	Maha Shivaratri Sunday
4 th Week 20 Feb - 25 Feb	Concept of hapticity of organic ligands. Structure and bonding in metal-ethylenic complexes.
26 Feb, 2023	Sunday
5 th Week 27 Feb - 28 Feb	Structure of Ferrocene, classification in metal carbonyls, preparation, properties and bonding in mononuclear carbonyls.

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May, 2023)

Name of the Teacher – Ms. Rubal

Class- B.Sc. III (6th Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

March, 2023 1 st Week 1 March - 4 March	ASSIGNMENT-I : Acids and Bases- Arrhenius, Bronsted-lowry, Lux-flood, solvent system and Lewis concept of acids and bases.
2 nd Week 5 March - 12 March, 2023	Holi Break
3 rd Week 13 March - 18 March	Relative strength of acids and bases, leveling solvents, hard and soft acids and bases (HSAB), Applications of HSAB principle.
19 March, 2023	Sunday
4 th Week 20 March - 25 March	Bio inorganic chemistry Metal ions present in biological system, classification on the basis of action (essential, non essential, trace, toxic).
23 March, 2023	Shaheedi Diwas/Martyrdom Day of Bhagat Singh, Rajguru & Sukhdev
26 March, 2023	Sunday
30 March, 2023	Ram Navmi

KVA DAV College for Women, Karnal

Lesson Plan For The Even Semester (February to May 2023)

Name of the Teacher – Ms. Rubal

Class- B.Sc. III (6th Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

April, 2023 1 st Week 1 April, 2023	Metalloporphyrins with special reference to haemoglobin and myoglobin.
2 April, 2023	Sunday
2 nd Week 3 April - 8 April	ASSIGNMENT-2 Biological role of Na ⁺ , K ⁺ , Ca ⁺² , Mg ⁺² , Fe ⁺² ions, Cooperative effect, Bohr effect.
4 April, 2023 9 April, 2023	Mahavir Jayanti Sunday
3 rd Week 10 April - 15 April	Silicones and Phosphazenes: Nomenclature, classification, preparation and uses of silicones.
14 April, 2023 16 April, 2023	Vaisakhi/Dr. B.R. Ambedkar Jayanti Sunday
4 th Week 17 April - 21 April	Sessional Exams
22 April, 2023 23 April, 2023	Id-Ul-Fitr/Parshuram Jayanti Sunday
5 th Week 24 April - 29 April	Elastomers, polysiloxane copolymers.
30 April, 2023	Sunday

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester (February to May, 2023)

Name of the Teacher – Ms. Rubal

Class- B.sc III (6th Sem)

Subject- Chemistry

Paper- Inorganic Chemistry

May, 2023 1 st Week 1 May - 6 May	Poly phosphazenes and bonding in triphosphazene.
7 May, 2023	Sunday
2 nd Week 8 May - 13 May	Revision + Tests
14 May, 2023	Sunday
17 May, 2023 Onwards	University Examinations