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Lecture Schedule  
Phase-II**

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| Date      | Subject             | Chapter Name                                         | Lecture No. | Sub-Topics                                                                                                                                                |
|-----------|---------------------|------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20-Oct-21 | Physics             | Unit and Dimension                                   | 1           | Unit and Dimension                                                                                                                                        |
|           | Organic Chemistry   | Classification and Nomenclature of Organic Compounds | 1           | Hybridisation of Carbon, Degree of Carbon and Hydrogen, Homocyclic and Compounds, Functional Groups                                                       |
|           | Physical Chemistry  | Mole concept                                         | 1           | Basic Mole, Calculation of No. of Atoms, Average Atomic Mass and Average Molar Mass                                                                       |
|           | Maths               | Basic Maths & Logarithm                              | 1           | Number System                                                                                                                                             |
| 21-Oct-21 | Physics             | Vector                                               | 1           | Vector Addition Subtraction Unit Vector Vector Separation Component of Vector                                                                             |
|           | Inorganic Chemistry | Periodic Table and Basic                             | 1           | Introduction to Periodic Table, Naming of Element with Z>100, Effective Nuclear Charge, Calculation of Zeff. (Slater's Rule)                              |
|           | Maths               | Basic Maths & Logarithm                              | 2           | Method of interval                                                                                                                                        |
|           | Maths               | Basic Maths & Logarithm                              | 3           | Method of Interval with illustration and exponential function                                                                                             |
| 22-Oct-21 | Physics             | Vector                                               | 2           | Vector Product Scalar Product Vector Product                                                                                                              |
|           | Inorganic Chemistry | Periodic Table and Basic                             | 2           | Atomic Size and its Variation, Variation in D-Block                                                                                                       |
|           | Maths               | Basic Maths & Logarithm                              | 4           | Exponential and log Function                                                                                                                              |
|           | Maths               | Basic Maths & Logarithm                              | 5           | Sheet Discussion of Basic Maths & Logarithm                                                                                                               |
| 23-Oct-21 | Physics             | Kinematics                                           | 1           | Distance Displacement Speed Velocity Acceleration One dimensional Constant Acceleration                                                                   |
|           | Physics             | Kinematics                                           | 2           | Variable Acceleration Graphical Interpretation                                                                                                            |
|           | Inorganic Chemistry | Periodic Table and Basic                             | 3           | Ionization Energy, Successive Ionisation Energy, Electron Affinity and Electron Gain Enthalpy                                                             |
|           | Maths               | Quadratic Equation                                   | 1           | Polynomials, Polynomials Equation, Polynomials Identities, Basic Sub Quadratic Equation                                                                   |
| 25-Oct-21 | Physics             | Kinematics                                           | 3           | Sheet Discussion Q. 1 to Q.10                                                                                                                             |
|           | Physical Chemistry  | Mole concept                                         | 2           | Average Molar Mass Percentage Composition Empirical And Molecular Formula                                                                                 |
|           | Organic Chemistry   | Classification and Nomenclature of Organic Compounds | 2           | Functional Group and Homologous Series, Degree of Unsaturation, Identification of Functional Groups                                                       |
|           | Maths               | Quadratic Equation                                   | 2           | Nature of Roots, Transformation of Roots, Symmetric Functions of Roots                                                                                    |
| 26-Oct-21 | Physics             | Kinematics                                           | 4           | Graphs                                                                                                                                                    |
|           | Physical Chemistry  | Mole concept                                         | 3           | Stoichiometry, Limiting Reagent, Percent Yield                                                                                                            |
|           | Organic Chemistry   | Classification and Nomenclature of Organic Compounds | 3           | Nomenclature of Hydrocarbons                                                                                                                              |
|           | Maths               | Quadratic Equation                                   | 3           | Nature of Roots                                                                                                                                           |
| 27-Oct-21 | Physics             | Kinematics                                           | 5           | Graphs applications                                                                                                                                       |
|           | Organic Chemistry   | Classification and Nomenclature of Organic Compounds | 4           | Nomenclature Of Alkenes And alkynes, Nomenclature Of Compounds, Nomenclature Of Spiro Compounds                                                           |
|           | Physical Chemistry  | Mole concept                                         | 4           | POAC, Discussion Ex-1 Q1 to 15, Series or Sequential Reaction                                                                                             |
|           | Maths               | Quadratic Equation                                   | 4           | Range                                                                                                                                                     |
| 28-Oct-21 | Physics             | Kinematics                                           | 6           | 2 Dimensional Motion Introduction                                                                                                                         |
|           | Inorganic Chemistry | Periodic Table and Basic                             | 4           | Successive Electron Gain Enthalpy, Electronegativity, Factors Affecting Electronegativity, Acidic and Basic Nature, Hydration Energy                      |
|           | Maths               | Quadratic Equation                                   | 5           | Range of quadratic /quadratic                                                                                                                             |
|           | Maths               | Quadratic Equation                                   | 6           | Common roots & location of roots                                                                                                                          |
| 29-Oct-21 | Physics             | Kinematics                                           | 7           | Projectile on incline                                                                                                                                     |
|           | Inorganic Chemistry | Chemical bonding                                     | 1           | Ionic Bond, Covalent Bond, Coordinate Bond                                                                                                                |
|           | Maths               | Quadratic Equation                                   | 7           | Location of roots and theory of equation                                                                                                                  |
|           | Maths               | Quadratic Equation                                   | 8           | Based upon Theory of Equations and Pseudo Quadratic Condition for which 2nd Degree Expression can be Factorise into Linear Factor with some illustrations |
| 30-Oct-21 | Physics             | Kinematics                                           | 8           | Equation of Trajectory Maximum Range                                                                                                                      |
|           | Physics             | Kinematics                                           | 9           | Relative Motion Basic                                                                                                                                     |
|           | Inorganic Chemistry | Chemical bonding                                     | 2           | Lewis Octet Rule, Formal Charge, VBT                                                                                                                      |
|           | Maths               | Quadratic Equation                                   | 9           | Sheet Discussion (Q1 to Q20)                                                                                                                              |

|           |                     |                                                               |    |                                                                                                                           |
|-----------|---------------------|---------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------|
| 1-Nov-21  | Physics             | Kinematics                                                    | 10 | Discussion and Relative Motion Basic Minimum Separation Part-1                                                            |
|           | Physical Chemistry  | Mole concept                                                  | 5  | Concentration Term, W/Wt, W/vt, V/Vt, Molarity, Molality, Mole Fraction Ppm, PPb Molarity of Dilution and Mixing          |
|           | Organic Chemistry   | Classification and Nomenclature of Organic Compounds          | 5  | Nomenclature Of compounds with Functional Groups Common Names                                                             |
|           | Maths               | Quadratic Equation                                            | 10 | Sheet Discussion (Q21 to Q40)                                                                                             |
| 2-Nov-21  | Physics             | Kinematics                                                    | 11 | Minimum Distance General Apparel Relative Motion in Projectile Rain Man Problem Part-2                                    |
|           | Physical Chemistry  | Mole concept                                                  | 6  | Molarity of Mixing, Volume Strength of H <sub>2</sub> O <sub>2</sub> , Silver Salt Method and Chloroplatinate Salt Method |
|           | Organic Chemistry   | Classification and Nomenclature of Organic Compounds          | 6  | IUPAC Nomenclature of Compounds with Multiple Function Group                                                              |
|           | Maths               | Quadratic Equation                                            | 11 | Sheet Discussion (41 to 65)                                                                                               |
| 3-Nov-21  | Physics             | Kinematics                                                    | 12 | River boat                                                                                                                |
|           | Organic Chemistry   | Classification and Nomenclature of Organic Compounds          | 7  | Nomenclature of Multiple Functional Groups, Aromatic Compounds, Common Names                                              |
|           | Physical Chemistry  | Solid State                                                   | 1  | Introduction, Crystalline and Amorphous Solids, Crystal Lattice and Unit Cells, Types of Units Cells, Bravais Lattices    |
|           | Maths               | Quadratic Equation                                            | 12 | Sheet Discussion (66 to Last)                                                                                             |
| 6-Nov-21  | Physics             | Kinematics                                                    | 13 | Discussion , River Boat Minimum time Minimum drift Flag                                                                   |
|           | Physics             | NLM And Friction                                              | 1  | Types of Force Tension Normal Laws of Motion                                                                              |
|           | Inorganic Chemistry | Chemical bonding                                              | 3  | Hybridization, VSEPR, Bent's Rule                                                                                         |
|           | Maths               | Trigonometric Ratios & Identities And Trigonometric Equations | 1  | Identical Formula of Trigonometry                                                                                         |
| 8-Nov-21  | Physics             | NLM And Friction                                              | 2  | Individual Analysis 2-block System                                                                                        |
|           | Physical Chemistry  | Solid State                                                   | 2  | Analysis of Unit Cell, Packing of Atoms, Tetrahedral and Octahedral Voids                                                 |
|           | Organic Chemistry   | GOC                                                           | 1  | Electronic Displacement Effect, Inductive Effect, Identification of +I and -I, Comparison of +I and -I                    |
|           | Maths               | Trigonometric Ratios & Identities And Trigonometric Equations | 2  | Trigonometry Formula's                                                                                                    |
| 9-Nov-21  | Physics             | NLM And Friction                                              | 3  | Atwood Machine String Constrained                                                                                         |
|           | Physical Chemistry  | Solid State                                                   | 3  | Hexagonal Close Packing, Cubic Close Packing (FCC), Limiting Radius Ratio                                                 |
|           | Organic Chemistry   | GOC                                                           | 2  | Reaction Intermediates Composition of Stability of Intermediates Formal Charge lone Pairs                                 |
|           | Maths               | Trigonometric Ratios & Identities And Trigonometric Equations | 3  | Conditional Identities                                                                                                    |
| 10-Nov-21 | Physics             | NLM And Friction                                              | 4  | Wedge Constrained Basic String Pulley Problem                                                                             |
|           | Physical Chemistry  | Solid State                                                   | 4  | Structures of Ionic Crystals-NaCl, CsCl, ZnS, Diamond, Defects in Solids, Schottky and Frenkel Defects                    |
|           | Organic Chemistry   | GOC                                                           | 3  | Resonance, Condition of Resonance, Drawing of R.S. (Resonating Structures)                                                |
|           | Maths               | Trigonometric Ratios & Identities And Trigonometric Equations | 4  | Complete Sheet Discussion                                                                                                 |
| 11-Nov-21 | Physics             | NLM And Friction                                              | 5  | Combination of Rod String Constraint Combination of Wedge & String Constrained                                            |
|           | Inorganic Chemistry | Chemical bonding                                              | 4  | VSEPR, Calculation of $\pi\pi$ - $\pi\pi$ and $\pi\pi$ - $d\pi$ bonds                                                     |
|           | Maths               | Sequence & Series                                             | 1  | A.P., Formation of A.P., Properties of A.P. Arithmetic Mean                                                               |
|           | Maths               | Sequence & Series                                             | 2  | GP, AGP, HP & Relation Between AM, GM & HM                                                                                |
| 12-Nov-21 | Physics             | NLM And Friction                                              | 7  | Spring Force                                                                                                              |
|           | Inorganic Chemistry | Chemical bonding                                              | 5  | Drago's Rule, Bond Order, Bond Length, Bond Angle                                                                         |
|           | Maths               | Sequence & Series                                             | 3  | Method of Differences                                                                                                     |
|           | Maths               | Determinant                                                   | 1  | Properties of Determinant                                                                                                 |
| 13-Nov-21 | Physics             | NLM And Friction                                              | 8  | Exercise Sheet Cutting of String and Spring                                                                               |
|           | Physics             | NLM And Friction                                              | 9  | Pseudo Force Friction Basic HCV NLM Discussion                                                                            |
|           | Inorganic Chemistry | Chemical bonding                                              | 6  | Bond Energy and Dipole Moment                                                                                             |
|           | Maths               | Determinant                                                   | 2  | Theory Cramer's Rule                                                                                                      |

|           |                     |                                 |    |                                                                                                                            |
|-----------|---------------------|---------------------------------|----|----------------------------------------------------------------------------------------------------------------------------|
| 15-Nov-21 | Physics             | NLM And Friction                | 10 | Friction, Acceleration time graph Due to Friction, Friction On Inclined plane geometry of Friction and Some Problem        |
|           | Physical Chemistry  | Solid State                     | 5  | Non-Stoichiometric Defects, Magnetic Properties of Solids, Pyroelectricity and piezoelectricity, Bragg's Equation          |
|           | Organic Chemistry   | GOC                             | 4  | Drawing of R.S., +M and -M Effect (+R and -R), Comparison of Stability of R.S.                                             |
|           | Maths               | Matrix                          | 1  | Theory of Matrices                                                                                                         |
| 16-Nov-21 | Physics             | NLM And Friction                | 11 | Friction Two Block System                                                                                                  |
|           | Physical Chemistry  | Solid State                     | 6  | Sheet Discussion                                                                                                           |
|           | Organic Chemistry   | GOC                             | 5  | Stability of R.S., Concept of Aromaticity (Identification), Aromatic/Non-Aromatic/Anti-Aromatic                            |
|           | Maths               | Matrix                          | 2  | Properties of Matrix                                                                                                       |
| 17-Nov-21 | Physics             | NLM And Friction                | 12 | Friction Between Two System Block of Different Cases                                                                       |
|           | Physical Chemistry  | Liquid Solution                 | 1  | Vapour Pressure, V.P. of Solution Concentration to Volatile Liquid, Mole Fraction in V.P.                                  |
|           | Organic Chemistry   | GOC                             | 6  | Aromaticity, Bond Order /Bond Length / Bond Energy, Resonance Energy and Comparison                                        |
|           | Maths               | Matrix                          | 3  | Solution of System of Equations and Characteristic Equation of Matrix                                                      |
| 18-Nov-21 | Physics             | Work Energy and Power           | 1  | Work Done by a Force                                                                                                       |
|           | Inorganic Chemistry | Chemical bonding                | 7  | Back Bonding, Bridge Bonding                                                                                               |
|           | Maths               | Function                        | 1  | Modulus Function                                                                                                           |
|           | Maths               | Function                        | 2  | Greatest Integer, Fractional Part and Signum Function                                                                      |
| 19-Nov-21 | Physics             | Work Energy and Power           | 2  | Power                                                                                                                      |
|           | Inorganic Chemistry | Chemical bonding                | 8  | Bridge Bonding, MOT                                                                                                        |
|           | Maths               | Function                        | 3  | Definition of Function, Domain, Range and Theory of Identical Functions                                                    |
|           | Maths               | Function                        | 4  | Illustration Based on Domain and Range                                                                                     |
| 20-Nov-21 | Physics             | Work Energy and Power           | 3  | Potential Energy Mechanical Energy                                                                                         |
|           | Physics             | Work Energy and Power           | 4  | Discussion                                                                                                                 |
|           | Inorganic Chemistry | Chemical bonding                | 9  | MOT, (I.E., Magnetic Behaviour etc.)                                                                                       |
|           | Maths               | Function                        | 5  | Illustration Based upon Range and Identical Functions and Even/Odd Functions                                               |
| 22-Nov-21 | Physics             | COM                             | 1  | Location of CM                                                                                                             |
|           | Physical Chemistry  | Liquid Solution                 | 2  | Concept of Fractional Distillation, MF in Liquid and Vapour Phase in Condensation, Ideal and Non-Ideal Solution, RLVP      |
|           | Organic Chemistry   | GOC                             | 7  | Hyperconjugation in Alkene and Stability +H and -H Hyperconjugation in Carbocation and Free Radicals                       |
|           | Maths               | Function                        | 6  | Periodic Function                                                                                                          |
| 23-Nov-21 | Physics             | COM                             | 2  | Motion of CM, COLM                                                                                                         |
|           | Physical Chemistry  | Liquid Solution                 | 3  | RLVP, Elevation in BP, Depression in FP, Osmosis                                                                           |
|           | Organic Chemistry   | GOC                             | 8  | HOC, Relative Stabilities of Intermediates                                                                                 |
|           | Maths               | Function                        | 7  | Theory & Illustration based on Composite Functions                                                                         |
| 24-Nov-21 | Physics             | COM                             | 3  | CM Frame and Impulse Concepts                                                                                              |
|           | Physical Chemistry  | Liquid Solution                 | 4  | Osmotic Pressure, Abnormal/Normal Colligative Property, Van't Hoff Factor                                                  |
|           | Organic Chemistry   | GOC                             | 9  | Hyperconjugation, Applications of hyperconjugation, HOH,HOC                                                                |
|           | Maths               | Function                        | 8  | Theory with Illustrations of Classification of Function & Inverse of a Function and Illustration Based upon Function Rules |
| 25-Nov-21 | Physics             | COM                             | 4  | Collision, Variable Mass System                                                                                            |
|           | Inorganic Chemistry | Chemical bonding                | 10 | Intermolecular Forces and their Types,Hydrogen Bonding and its Types                                                       |
|           | Maths               | Inverse Trigonometric Functions | 1  | Definition Domain ,Range and Graph of ITF With Illustrations                                                               |
|           | Maths               | Inverse Trigonometric Functions | 2  | Properties of ITF                                                                                                          |
| 26-Nov-21 | Physics             | COM                             | 5  | Discussion                                                                                                                 |
|           | Inorganic Chemistry | Chemical bonding                | 11 | "Ionic Bond,Polarisation and Fajan"s Rule, Applications of Polarisation,Solubility and Solubility Order"                   |
|           | Maths               | Inverse Trigonometric Functions | 3  | Illusion Based upon Properties of ITF                                                                                      |
|           | Maths               | LIMIT                           | 1  | Theory of Concept of Limits L.H.L and R.V.L Existence of Limits                                                            |

|           |                     |                                                           |    |                                                                                                                                                              |
|-----------|---------------------|-----------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27-Nov-21 | Physics             | Rotation Dynamics                                         | 1  | Moment of Inertia                                                                                                                                            |
|           | Physics             | Rotation Dynamics                                         | 2  | Torque And Fixed Axis Rotation part-1                                                                                                                        |
|           | Inorganic Chemistry | p-Block                                                   | 1  | Introduction,13th group Family, Boron and its Compounds                                                                                                      |
|           | Maths               | LIMIT                                                     | 2  | Indeterminate Forms and Evaluation of Limits (0/0 Form)                                                                                                      |
| 29-Nov-21 | Physics             | Rotation Dynamics                                         | 3  | Torque And Fixed Axis Rotation part-2                                                                                                                        |
|           | Physical Chemistry  | Liquid Solution                                           | 5  | Questions on Osmotic Pressure, Gas in Liquid Solution                                                                                                        |
|           | Organic Chemistry   | GOC                                                       | 10 | acid and base strength, Base strength, S.I.P., S.I.R. effect, ortho effect                                                                                   |
|           | Maths               | LIMIT                                                     | 3  | Limit at infinity                                                                                                                                            |
| 30-Nov-21 | Physics             | Rotation Dynamics                                         | 4  | Angular Momentum and Its Conservation                                                                                                                        |
|           | Physical Chemistry  | Redox Reaction                                            | 1  | "Oxidation Number and it's Calculation, Balancing of Redox Reactions,n-factor and its Calculation"                                                           |
|           | Organic Chemistry   | Structural isomerism                                      | 1  | Structural isomerism                                                                                                                                         |
|           | Maths               | LIMIT                                                     | 4  | Limits at Infinity and Theory of Trigonometric Limits                                                                                                        |
| 1-Dec-21  | Physics             | Rotation Dynamics                                         | 5  | Rolling Motion                                                                                                                                               |
|           | Physical Chemistry  | Redox Reaction                                            | 2  | "Equivalent Concept and Law of Equivalence, Acid-Base Titrations,Redox Titrations,Practice Session-2 "                                                       |
|           | Organic Chemistry   | Structural isomerism                                      | 2  | Tautomerism                                                                                                                                                  |
|           | Maths               | LIMIT                                                     | 5  | Illustration Based Upon Trigonometric Limits                                                                                                                 |
| 2-Dec-21  | Physics             | Rotation Dynamics                                         | 6  | Angular Impulse and Rigid Body Collision                                                                                                                     |
|           | Inorganic Chemistry | p-Block                                                   | 2  | Carbon Family, Carbon and its Compounds, Allenes and Carbides                                                                                                |
|           | Maths               | LIMIT                                                     | 6  | Exponential, Logarithmic Limits and Limits of the form $\frac{1}{\infty}$ & Illustrations Based upon Existence of Limits                                     |
|           | Maths               | Continuity & Derivability                                 | 1  | Theory of Continuity                                                                                                                                         |
| 3-Dec-21  | Physics             | Rotation Dynamics                                         | 7  | Discussion                                                                                                                                                   |
|           | Inorganic Chemistry | p-Block                                                   | 3  | Compound if Silicon, Silicates and Silicones                                                                                                                 |
|           | Maths               | Continuity & Derivability                                 | 2  | Theory of Differentiability                                                                                                                                  |
|           | Maths               | Continuity & Derivability                                 | 3  | Illustration Based upon Continuity and Differentiability                                                                                                     |
| 4-Dec-21  | Physics             | SHM                                                       | 1  | Kinematics of SHM and Phasor Circle                                                                                                                          |
|           | Physics             | SHM                                                       | 2  | Linear SHM in Spring Block Systems                                                                                                                           |
|           | Inorganic Chemistry | p-Block                                                   | 4  | Nitrogen family , chemical properties , Nitrogen, Ammonia, Nitrous Acid , Nitric Acid                                                                        |
|           | Maths               | Continuity & Derivability                                 | 4  | Practice Session - 2                                                                                                                                         |
| 6-Dec-21  | Physics             | SHM                                                       | 3  | Angular SHM and Combination of SHM                                                                                                                           |
|           | Physical Chemistry  | Chemical Equilibrium                                      | 1  | "Equilibrium,Equilibrium Constant and writing Equilibrium Constant, Characteristics of Equilibrium Constant,Calculation of Equilibrium Constant"             |
|           | Organic Chemistry   | Geometrical isomerism, Conformational Isomerism           | 1  | Geometrical isomerism                                                                                                                                        |
|           | Maths               | Continuity & Derivability                                 | 5  | Illustration Based on Graph, Determination of Function using Functional Rules and Practice Session-3                                                         |
| 7-Dec-21  | Physics             | SHM                                                       | 4  | Discussion                                                                                                                                                   |
|           | Physical Chemistry  | Chemical Equilibrium                                      | 2  | Calculations in Equilibrium,Significance of Equilibrium Constant,Practice Session 2, Simultaneous Equilibrium,Reaction Quotient and Direction of Equilibrium |
|           | Organic Chemistry   | Geometrical isomerism, Conformational Isomerism           | 2  | Conformation of Ethane,propane                                                                                                                               |
|           | Maths               | Method of Differentiation (MOD )                          | 1  | Theory of mod with Basic illustrations                                                                                                                       |
| 8-Dec-21  | Physics             | Elasticity, Thermometry, Calorimetry, & Thermal Expansion | 1  | Elasticity-1                                                                                                                                                 |
|           | Physical Chemistry  | Chemical Equilibrium                                      | 3  | Le-chatelier's Principle,Physical Equilibrium                                                                                                                |
|           | Organic Chemistry   | Geometrical isomerism, Conformational Isomerism           | 3  | Butane (about C1 - C2 , C2 - C3 )                                                                                                                            |
|           | Maths               | Method of Differentiation (MOD )                          | 2  | Practice Session - 1                                                                                                                                         |

|           |                     |                                                           |   |                                                                                                                                                                                                                                                       |
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| 9-Dec-21  | Physics             | Elasticity, Thermometry, Calorimetry, & Thermal Expansion | 2 | Elasticity-2                                                                                                                                                                                                                                          |
|           | Inorganic Chemistry | p-Block                                                   | 5 | Oxides of nitrogen, Phosphorus & its allotropes, Phosphine, Oxyacids of Phosphorus                                                                                                                                                                    |
|           | Maths               | Method of Differentiation (MOD )                          | 3 | Differentiation of Implicit Functions and Differential Using Logarithmic                                                                                                                                                                              |
|           | Maths               | Method of Differentiation (MOD )                          | 4 | Logarithmic Differentiation, Parametric Differentiation and Derivative of a Function w.r.t Other Function                                                                                                                                             |
| 10-Dec-21 | Physics             | Elasticity, Thermometry, Calorimetry, & Thermal Expansion | 3 | Thermometry and Calorimetry                                                                                                                                                                                                                           |
|           | Inorganic Chemistry | p-Block                                                   | 6 | 16th Group Elements and Their Compounds , Halogen Family and General Properties                                                                                                                                                                       |
|           | Maths               | Method of Differentiation (MOD )                          | 5 | Derivative of Inverse of a Function and Higher Order Derivatives & L'Hopital Rule and 0', $\infty$ ' form                                                                                                                                             |
|           | Maths               | Indefinite Integration                                    | 1 | Basics of Indefinite Integration and Same Basic Illustration                                                                                                                                                                                          |
| 11-Dec-21 | Physics             | Elasticity, Thermometry, Calorimetry, & Thermal Expansion | 4 | Thermal Expansion-1                                                                                                                                                                                                                                   |
|           | Physics             | Elasticity, Thermometry, Calorimetry, & Thermal Expansion | 5 | Thermal Expansion-2                                                                                                                                                                                                                                   |
|           | Inorganic Chemistry | p-Block                                                   | 7 | Chlorine and its properties , Interhalogen compounds and pseudo halogens , Noble gases and their compounds                                                                                                                                            |
|           | Maths               | Indefinite Integration                                    | 2 | Illustration based upon Integral of Standard Function and Theory of Integration by Substitution                                                                                                                                                       |
| 13-Dec-21 | Physics             | Elasticity, Thermometry, Calorimetry, & Thermal Expansion | 6 | Discussion                                                                                                                                                                                                                                            |
|           | Physical Chemistry  | Ionic Equilibrium                                         | 1 | "Classification of Substance, Arrhenius Theory of Electrolytic Dissociation, Strong and Weak Electrolyte, Ostwald's Dilution Law, Properties of Water, Acid Base Theories"                                                                            |
|           | Organic Chemistry   | Geometrical isomerism, Conformational Isomerism           | 4 | Conformation of Cyclohexane including G.I.                                                                                                                                                                                                            |
|           | Maths               | Indefinite Integration                                    | 3 | Illustration based upon Substitution                                                                                                                                                                                                                  |
| 14-Dec-21 | Physics             | KTG and Thermodynamics                                    | 1 | KTG-1                                                                                                                                                                                                                                                 |
|           | Physical Chemistry  | Ionic Equilibrium                                         | 2 | Discussion of Practice Session 1, pH Determination of SA/SB, WA/WB, Mix of SA/SB                                                                                                                                                                      |
|           | Organic Chemistry   | Optical Isomerism                                         | 1 | Symmetry elements (POS, COS, AOS, AAOS), chiral centre, stereo centre (i) Optical activity, PPL, angle of rotation (ii) d & l , numerical on specific angle of rotation                                                                               |
|           | Maths               | Indefinite Integration                                    | 4 | Various Trigonometric integrations                                                                                                                                                                                                                    |
| 15-Dec-21 | Physics             | KTG and Thermodynamics                                    | 2 | 1st Law of Thermodynamics-1                                                                                                                                                                                                                           |
|           | Physical Chemistry  | Ionic Equilibrium                                         | 3 | pH Determination of Mix of WA/WB, Mix of SA+WA/SB+WB, Polyprotic Acid/Polyacidic Base                                                                                                                                                                 |
|           | Organic Chemistry   | Optical Isomerism                                         | 2 | Chirality, optically active compounds, single chiral and multiple chiral atom molecules                                                                                                                                                               |
|           | Maths               | Indefinite Integration                                    | 5 | Integration by-Parts                                                                                                                                                                                                                                  |
| 16-Dec-21 | Physics             | KTG and Thermodynamics                                    | 3 | 1st Law of Thermodynamics-2                                                                                                                                                                                                                           |
|           | Inorganic Chemistry | Coordination Compounds                                    | 1 | Types of Salt (Double and Complex), Classification of Complex Salt (perfect and Imperfect, Homoleptic and heteroleptic, on the Basis of Charge ) General Terminologies used in Complex Salt, Classification of Ligands                                |
|           | Maths               | Indefinite Integration                                    | 6 | Classic Integrals and Integration using Partial Fractions                                                                                                                                                                                             |
|           | Maths               | Indefinite Integration                                    | 7 | Integration using Partial Fraction and Ir-Rational Integrals & Manipulating Integrals                                                                                                                                                                 |
| 17-Dec-21 | Physics             | KTG and Thermodynamics                                    | 4 | 2nd Law of Thermodynamics                                                                                                                                                                                                                             |
|           | Inorganic Chemistry | Coordination Compounds                                    | 2 | Chelating Ligand, Ambidentate Ligand, Flexidentate Ligand, 3. On Bonding Pattern (i) Classical Ligand-Ip Donor (ii) Non-classical Ligand ( Ip donor and Acceptor) , Synergic Bonding in Metal Carbonyls, Oxidation Number and Effective Atomic Number |
|           | Maths               | Definite Integration                                      | 1 | Basics of Definite Integration                                                                                                                                                                                                                        |
|           | Maths               | Definite Integration                                      | 2 | Properties of Definite Integration P1 to P5                                                                                                                                                                                                           |

|           |                     |                        |   |                                                                                                                                                                                                           |
|-----------|---------------------|------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18-Dec-21 | Physics             | KTG and Thermodynamics | 5 | Discussion                                                                                                                                                                                                |
|           | Physics             | Electrostatics         | 1 | Coulomb's Law                                                                                                                                                                                             |
|           | Inorganic Chemistry | Coordination Compunds  | 3 | "Effective Atomic Number (EAN) Continued, IUPAC Nomenclature of Coordination Compounds"                                                                                                                   |
|           | Maths               | Definite Integration   | 3 | Property - 6, 7, 8 ( King and Queen )                                                                                                                                                                     |
| 20-Dec-21 | Physics             | Electrostatics         | 2 | Electric Field                                                                                                                                                                                            |
|           | Physical Chemistry  | Ionic Equilibrium      | 4 | Discussion of Practise Session 2, pH Determination of Strong Acid and Strong Base                                                                                                                         |
|           | Organic Chemistry   | Optical Isomerism      | 3 | Enantiomer & their properties, Racemization, Resolvtion optical purity, % composition, Fischer projection , R.S. configuration (not more than 2 chiral carbon containg acyclic compounds)                 |
|           | Maths               | Definite Integration   | 4 | Illustration Based Upon King and Queen Property                                                                                                                                                           |
| 21-Dec-21 | Physics             | Electrostatics         | 3 | Electric Field Problems                                                                                                                                                                                   |
|           | Physical Chemistry  | Ionic Equilibrium      | 5 | Salt Hydrolysis and Buffer Solution                                                                                                                                                                       |
|           | Organic Chemistry   | Optical Isomerism      | 4 | D & L -Configuration, Diastereomers & their properties including separation. Examples of 1-chiral, 2-chiral , 3-chiral carbon only. Calculating number of stereoisomers.Interconversion of all projection |
|           | Maths               | Definite Integration   | 5 | Jack Property and Newton Leibnitz Theorem                                                                                                                                                                 |
| 22-Dec-21 | Physics             | Electrostatics         | 4 | Electrostatic P.E and Potential                                                                                                                                                                           |
|           | Physical Chemistry  | Ionic Equilibrium      | 6 | "Discussion of Practise Session-3, Buffer Action, Buffer Capacity, Titration (1.SA v/s SB, 2.WA v/s SB, 3.WB v/s SA, 4.WA v/s WB)"                                                                        |
|           | Organic Chemistry   | Optical Isomerism      | 5 | Calculating number of stereoisomers.Interconversion of all projection                                                                                                                                     |
|           | Maths               | Definite Integration   | 6 | Summation of Series ( Integration as a Limit of a Sum ), Estimation and Reduction Formula                                                                                                                 |
| 23-Dec-21 | Physics             | Electrostatics         | 5 | Electric Potential                                                                                                                                                                                        |
|           | Inorganic Chemistry | Coordination Compunds  | 4 | Discussion of practise session 1, Werner's coordination theory                                                                                                                                            |
|           | Maths               | Tangent & Normal (AOD) | 1 | Theory of Tangent Normal                                                                                                                                                                                  |
|           | Maths               | Tangent & Normal (AOD) | 2 | Practice Secsion -1                                                                                                                                                                                       |
| 24-Dec-21 | Physics             | Electrostatics         | 6 | Electric Dipole                                                                                                                                                                                           |
|           | Inorganic Chemistry | Coordination Compunds  | 5 | Valence Bond Theory (VBT)                                                                                                                                                                                 |
|           | Maths               | Tangent & Normal (AOD) | 3 | Practice Secsion -2                                                                                                                                                                                       |
|           | Maths               | Monotonocity (AOD)     | 1 | Theory of Monotonicity                                                                                                                                                                                    |
| 25-Dec-21 | Physics             | Electrostatics         | 7 | Gauss Law                                                                                                                                                                                                 |
|           | Physics             | Electrostatics         | 8 | Gauss Law and Conductors                                                                                                                                                                                  |
|           | Inorganic Chemistry | Coordination Compunds  | 6 | Crystal field theory ( CFT)                                                                                                                                                                               |
|           | Maths               | Maxima & Minima(AOD)   | 1 | Theory of Maxima and Minima                                                                                                                                                                               |
| 27-Dec-21 | Physics             | Electrostatics         | 9 | Discussion                                                                                                                                                                                                |
|           | Physical Chemistry  | Ionic Equilibrium      | 7 | "Theory of Indicators, Solubility-1.In Water 2. In Presence of Common Ion 3. Simultaneous Solubility 4.Ionic Product and Condition of ppt"                                                                |
|           | Organic Chemistry   | Halogen Derivatives    | 1 | Leaving group E+, N u-. solvents, Idea of EAS (benzene)                                                                                                                                                   |
|           | Maths               | Maxima & Minima(AOD)   | 2 | Practice Session-1                                                                                                                                                                                        |
| 28-Dec-21 | Physics             | Gravitation            | 1 | Lecture-1                                                                                                                                                                                                 |
|           | Physical Chemistry  | Ionic Equilibrium      | 8 | "Discussion of Practice Session-4, Solubility of Salt when 1.Complex Formation Occurs 2.Hydrolysis Occurs (Through Questions of Session Discussed)"                                                       |
|           | Organic Chemistry   | Halogen Derivatives    | 2 | G.M.P. of carbocation, Rearrangement                                                                                                                                                                      |
|           | Maths               | Maxima & Minima(AOD)   | 3 | Practice Session-02                                                                                                                                                                                       |
| 29-Dec-21 | Physics             | Gravitation            | 2 | Lecture-2, Discussion                                                                                                                                                                                     |
|           | Physical Chemistry  | Thermodynamics         | 1 | "Introduction, System, Surroundings and Types of System, Extensive and Intensive Properties, State and Path Functions, Degrees of Freedom and Heat Capacity, Internal Energy, Heat and Work"              |
|           | Organic Chemistry   | Halogen Derivatives    | 3 | Acid catalysed & other dehydration of R-OH, pinacolone formation                                                                                                                                          |
|           | Maths               | Maxima & Minima(AOD)   | 4 | Nature of Roots of Cubic Equation and Minimum Maximum Distance of a Point from a Curve                                                                                                                    |
| 30-Dec-21 | Physics             | Current Electricity    | 1 | Introduction and Ohm's Law                                                                                                                                                                                |
|           | Inorganic Chemistry | Metallurgy             | 1 | Introduction, Crushing and Grinding, Concentration of Ore( All Methods)                                                                                                                                   |
|           | Maths               | Maxima & Minima(AOD)   | 5 | Practice Session - 3                                                                                                                                                                                      |
|           | Maths               | Maxima & Minima(AOD)   | 6 | Mean Value Theorams (RMVT and LMVT) & Practice Session Based upon Mean Value Theorem                                                                                                                      |

|           |                     |                            |   |                                                                                                                                                                                  |
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| 31-Dec-21 | Physics             | Current Electricity        | 2 | DC Electrical Circuits-1                                                                                                                                                         |
|           | Inorganic Chemistry | Metallurgy                 | 2 | Conversion of ore into oxide( calcination ,Roasting) smelting,ellingham diagram , reduction method                                                                               |
|           | Maths               | Differential Equation      | 1 | Practice Session -3(Area) and Theory of Difference Equation                                                                                                                      |
|           | Maths               | Differential Equation      | 2 | Practice Session-1                                                                                                                                                               |
| 1-Jan-22  | Physics             | Current Electricity        | 3 | DC Electrical Circuits-2                                                                                                                                                         |
|           | Physics             | Current Electricity        | 4 | Equivalent Resistance                                                                                                                                                            |
|           | Physical Chemistry  | Thermodynamics             | 2 | "Zeroth and First Law of Thermodynamics,Enthalpy Function, Relation between DH and DU,Calorimetry,Practice Session 2"                                                            |
|           | Organic Chemistry   | Halogen Derivatives        | 4 | Pinacole, Pinacolane rearrangement                                                                                                                                               |
|           | Maths               | Differential Equation      | 3 | Practice Session-2                                                                                                                                                               |
|           | Maths               | Differential Equation      | 4 | Practice Session-3                                                                                                                                                               |
| 3-Jan-22  | Physics             | Current Electricity        | 5 | Electrical Power and Instruments                                                                                                                                                 |
|           | Physics             | Current Electricity        | 6 | Discussion                                                                                                                                                                       |
|           | Inorganic Chemistry | Metallurgy                 | 3 | Purification Method                                                                                                                                                              |
|           | Physical Chemistry  | Thermodynamics             | 3 | "Thermodynamic Processes,Reversible and Irreversible Process, Analysis of Isochoric,Isobaric and Isothermal Process"                                                             |
|           | Organic Chemistry   | Halogen Derivatives        | 5 | E+ Aaddition (HX, HOX, NOX, interhalogen X2, X2 + water) M - rule, Nonclassical Carbo cation, HBO, OMDM, Kucherov Reaction                                                       |
|           | Maths               | Area Under Curve (AUC)     | 1 | Theory and Practise Session - 1                                                                                                                                                  |
| 4-Jan-22  | Physics             | Capacitor                  | 1 | Capacitance and Types of Capacitors                                                                                                                                              |
|           | Physics             | Capacitor                  | 2 | Capacitors in Electrical Circuits                                                                                                                                                |
|           | Physical Chemistry  | Thermodynamics             | 4 | "Adiabatic Process and Analysis, Isothermal and Adiabatic Comparision, Cyclic and Polytropic Process, Practice Session-4"                                                        |
|           | Organic Chemistry   | Halogen Derivatives        | 6 | SN1, SN2 kinetics, mechanism; stereochemistry, substrate effect Application of SN                                                                                                |
|           | Maths               | Area Under Curve (AUC)     | 2 | Practise Session - 2                                                                                                                                                             |
|           | Maths               | Straigh Line               | 1 | Theory Of Points and Practice Session-3 of Determinants                                                                                                                          |
| 5-Jan-22  | Physics             | Capacitor                  | 3 | RC Circuits                                                                                                                                                                      |
|           | Physics             | Capacitor                  | 4 | Capacitors with Dielectrics                                                                                                                                                      |
|           | Inorganic Chemistry | Metallurgy                 | 4 | Individual Metallurgy of all metals                                                                                                                                              |
|           | Organic Chemistry   | Halogen Derivatives        | 7 | (a) G.M.P. alkyl halide, by HCL, HCL, + ZnCl2 + ; Nacl + H2SO4 PCL SOCI2, PCI3 on alcohol, Finkelstein, swarts                                                                   |
|           | Inorganic Chemistry | Metallurgy                 | 5 | Practice Session -1                                                                                                                                                              |
|           | Maths               | Straigh Line               | 2 | Practice Session-1                                                                                                                                                               |
| 6-Jan-22  | Physics             | Magnetic Effect of Current | 1 | Biot Savart's Law                                                                                                                                                                |
|           | Physical Chemistry  | Thermodynamics             | 5 | "Spontaneous and Non-Spontaneous Process, Entropy, Mathematical Definition, Statements of Second Law, Calculation of Entropy Change for Ideal Gas"                               |
|           | Organic Chemistry   | Halogen Derivatives        | 8 | (b) G.M.P. of alcohol, (c) G.M.P. of ether (williamson)                                                                                                                          |
|           | Maths               | Straigh Line               | 3 | Practice Session-2 and Varieus forms of equation of line                                                                                                                         |
|           | Maths               | Straigh Line               | 4 | Practice Session-3                                                                                                                                                               |
|           | Maths               | Straigh Line               | 5 | Position of a Point W.R.T. Line, Parametric form of Line, Distance Between Parallel Lines and Area of Parallelogram                                                              |
| 7-Jan-22  | Physics             | Magnetic Effect of Current | 2 | Ampere's Circuital Law                                                                                                                                                           |
|           | Inorganic Chemistry | Metallurgy                 | 6 | Practice Session -2                                                                                                                                                              |
|           | Physical Chemistry  | Thermodynamics             | 6 | Entropy calculation for different systems, third law of Thermodynamics, Gibbs function and Gibbs energy , Condition for spontaneity, significance of change in Gibbs Free Energy |
|           | Organic Chemistry   | Halogen Derivatives        | 9 | Introduction of elimination reaction E1, E2, E1cb Application of elimination                                                                                                     |
|           | Maths               | Straigh Line               | 6 | Image of a Point and Line About a Line Mirror and Concept of Family of Lines                                                                                                     |
|           | Maths               | Straigh Line               | 7 | Family of Lines and Angle Bisectors and Practices Session                                                                                                                        |



|           |                     |                            |    |                                                                                                                                                                                                              |
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| 8-Jan-22  | Physics             | Magnetic Effect of Current | 3  | Magnetic Force On Moving Charges                                                                                                                                                                             |
|           | Physics             | Magnetic Effect of Current | 4  | Magnetic Force and Hall's Effect                                                                                                                                                                             |
|           | Physical Chemistry  | Thermochemistry            | 1  | Enthalpy of Formation, Hess's Law, Enthalpy of Combustion, Lattice Enthalpy                                                                                                                                  |
|           | Organic Chemistry   | Halogen Derivatives        | 10 | (b) Elimination of esters (c) Hoffman's exhaustive elimination<br>Photohalogenation of alkanes number of monohalogen derivatives<br>Wurtz family reaction & Kolbe electrolysis Pinacoal formation            |
|           | Maths               | Straigh Line               | 8  | Angle Bisector and Shifting of Origin and Practice Session & Pair of Straight lines                                                                                                                          |
|           | Maths               | Circle                     | 1  | Basic Theory of Circle                                                                                                                                                                                       |
| 10-Jan-22 | Physics             | Magnetic Effect of Current | 5  | Magnetic Dipole Moment and MCG                                                                                                                                                                               |
|           | Physics             | Magnetic Effect of Current | 6  | Discussion                                                                                                                                                                                                   |
|           | Inorganic Chemistry | d-Block & f-Block Elements | 1  | Introduction and General Properties                                                                                                                                                                          |
|           | Organic Chemistry   | Alcohols & Ethers          | 1  | GMP of RCHO & R <sub>2</sub> CO by dry distillation, soda lime, decarboxylation                                                                                                                              |
|           | Inorganic Chemistry | d-Block & f-Block Elements | 2  | General Properties                                                                                                                                                                                           |
|           | Maths               | Circle                     | 2  | Practice Session-1                                                                                                                                                                                           |
| 11-Jan-22 | Physics             | Magnetism                  | 1  | Magnets and Magnetic Materials                                                                                                                                                                               |
|           | Physics             | Magnetism                  | 2  | Earth's Magnetism                                                                                                                                                                                            |
|           | Physical Chemistry  | Thermochemistry            | 2  | Enthalpy of Neutrilisation, Fusion, Vaporiation, Sublimation, Hydration, Atomization                                                                                                                         |
|           | Organic Chemistry   | Alcohols & Ethers          | 2  | Complete heating effect                                                                                                                                                                                      |
|           | Maths               | Circle                     | 3  | Tangents from an External point, Chord of Contact, Pair of Tangents, Length of Tangent and Angle Between Tangents                                                                                            |
|           | Maths               | Circle                     | 4  | Practice Session-3                                                                                                                                                                                           |
| 12-Jan-22 | Physics             | EMI and AC                 | 1  | EMI: Faraday's and Lenz's Law                                                                                                                                                                                |
|           | Physics             | EMI and AC                 | 2  | Self and Mutual Induction                                                                                                                                                                                    |
|           | Inorganic Chemistry | d-Block & f-Block Elements | 3  | Compounds of D-Block Part-1                                                                                                                                                                                  |
|           | Organic Chemistry   | Alcohols & Ethers          | 3  | G.M.P. by RMgX                                                                                                                                                                                               |
|           | Inorganic Chemistry | d-Block & f-Block Elements | 4  | Compounds of D-Block Part-2                                                                                                                                                                                  |
|           | Maths               | Circle                     | 5  | Family of Circles and Relative Position of Circles<br>Practice Session 03                                                                                                                                    |
| 13-Jan-22 | Physics             | EMI and AC                 | 3  | Motional EMF                                                                                                                                                                                                 |
|           | Physical Chemistry  | Thermochemistry            | 3  | Bond Energy and Bond Dissociation Energy, Resonance Energy, Practice session-3                                                                                                                               |
|           | Organic Chemistry   | Alcohols & Ethers          | 4  | G.M.P. by reduction by H <sup>-</sup> , LAH, SBH, DIBAL-H, BH <sub>3</sub> , MPV hydrogenation (lindlars catalyst & others)                                                                                  |
|           | Maths               | Circle                     | 6  | Radical Axis of Two Circles and Radical centre and Radical Circle and Practice Session-4                                                                                                                     |
|           | Maths               | Parabola                   | 1  | Basics of Parabola                                                                                                                                                                                           |
|           | Maths               | Parabola                   | 2  | Practice Session-1 and Parametric Equation of Parabola and Tangent in Various Form                                                                                                                           |
| 14-Jan-22 | Physics             | EMI and AC                 | 4  | Motional EMF and Induced Electric Field                                                                                                                                                                      |
|           | Inorganic Chemistry | d-Block & f-Block Elements | 5  | ZnSO <sub>4</sub> , CuSO <sub>4</sub> , FeSO <sub>4</sub> , F Block ( Lanthanide and Actinide)                                                                                                               |
|           | Physical Chemistry  | Electrochemistry           | 1  | Construction of galvanic cell, Relationship between ΔG and E                                                                                                                                                 |
|           | Organic Chemistry   | Carbonyl Compounds         | 1  | GMP of RCHO & R <sub>2</sub> CO by RCN, Acid & derivatives by reduction, Nucleophilic addition HCN, NaHSO <sub>3</sub> , NH <sub>2</sub> -Z, 2, 4 DNP, H <sub>2</sub> O, Wolf kishner & Clemenson reduction. |
|           | Maths               | Parabola                   | 3  | Tangents and Practise Session-2                                                                                                                                                                              |
|           | Maths               | Parabola                   | 4  | Normals and Practise Session-3                                                                                                                                                                               |
| 15-Jan-22 | Physics             | EMI and AC                 | 5  | LC Oscillation AC Introduction                                                                                                                                                                               |
|           | Physics             | EMI and AC                 | 6  | AC Circuits                                                                                                                                                                                                  |
|           | Physical Chemistry  | Electrochemistry           | 2  | Electrochemical Series and Application, Half Cells their Reaction and Representation, Different Types of Half Cell                                                                                           |
|           | Organic Chemistry   | Carbonyl Compounds         | 2  | Nucleophilic addition of ROH (Protection of carbonyl), GMP of RCHO & R <sub>2</sub> CO from alkene using ozonolysis                                                                                          |
|           | Maths               | Ellipse & Hyperbola        | 1  | Parabola Practice Session -04 end Standard Ellipse and Hyperbola                                                                                                                                             |
|           | Maths               | Ellipse & Hyperbola        | 2  | Auxiliary Circle and Parametric Equation and Tangent in Different forms and Practice Session -1                                                                                                              |

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| 17-Jan-22 | Physics             | EMI and AC                  | 7 | Power in AC Circuits TransFormers                                                                                                                                                                |
|           | Physics             | EMI and AC                  | 8 | Damped Oscillation                                                                                                                                                                               |
|           | Inorganic Chemistry | d-Block & f-Block Elements  | 6 | Discussion of Practice Session-1                                                                                                                                                                 |
|           | Organic Chemistry   | Carbonyl Compounds          | 3 | Complete oxidation of alkene (hydroxylaton, prileschev, followed by diol cleavage)                                                                                                               |
|           | Inorganic Chemistry | s-block(PS sir)             | 1 | Physical and chemical properties of Alkali and Alkaline earth Metals , Solution in liquid ammonia                                                                                                |
|           | Maths               | Ellipse & Hyperbola         | 3 | Normals and Director Circle of Ellipse and Practice Session -2                                                                                                                                   |
| 18-Jan-22 | Physics             | EMI and AC                  | 9 | Discussion                                                                                                                                                                                       |
|           | Physics             | Modern Physics              | 1 | EM Radiation & Photoelectric Effect                                                                                                                                                              |
|           | Physical Chemistry  | Electrochemistry            | 3 | Practice Session 1, Application of NERNST Equation, Concentration Cell( Electrolyte and Electrode                                                                                                |
|           | Organic Chemistry   | Carbonyl Compounds          | 4 | GMP of RCHO & R <sub>2</sub> CO by oxidation of alcohol. (by KMnO <sub>4</sub> , K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> , Cu /300°C , PCC , PDC, NBS, MnO <sub>2</sub>                    |
|           | Maths               | Ellipse & Hyperbola         | 4 | Practice Session -02 and Basic of Hyperbola                                                                                                                                                      |
|           | Maths               | Ellipse & Hyperbola         | 5 | Practice Session -02 and Rectangular Hyperbola                                                                                                                                                   |
| 19-Jan-22 | Physics             | Modern Physics              | 2 | Physics of Atom-1                                                                                                                                                                                |
|           | Physics             | Modern Physics              | 3 | Physics of Atom-2                                                                                                                                                                                |
|           | Inorganic Chemistry | s-block(PS sir)             | 2 | Important compounds of Alkali & Alkaline Earth metals , Uses of Alkali metals and Alkaline Earth metals                                                                                          |
|           | Organic Chemistry   | Carbonyl Compounds          | 5 | Oxidation of carbonyl compound Haloform reaction, Bayer v. oxidation, tollens, fehling , benedict, schiff, HgCl <sub>2</sub> , SeO <sub>2</sub> . Perkin, acid. Reformatsky, knoevngal reactions |
|           | Inorganic Chemistry | Hydrogen & its compounds    | 1 | Properties of Hydrogen, Hydrides, Water and hydrogen Periods                                                                                                                                     |
|           | Maths               | Ellipse & Hyperbola         | 6 | Complete Theory of Hyperbola Except Rectangular Hyperbola & Practice Session-2                                                                                                                   |
| 20-Jan-22 | Physics             | Modern Physics              | 4 | X-Rays                                                                                                                                                                                           |
|           | Physical Chemistry  | Electrochemistry            | 4 | Practice Session 2, Thermodynamics of Galvanic Cell( w, ΔG, ΔH,ΔS, Equilibrium Constant) Electrolytic Cell,. Faraday's Law of Electrolysis                                                       |
|           | Organic Chemistry   | Carbonyl Compounds          | 6 | Name reaction - Aldol, claisen, Cannizaro's reaction , benzil -benzilic acid rearrangement.                                                                                                      |
|           | Maths               | Vetor and 3D                | 1 | Basics of Vectors and Addition and Dot Product                                                                                                                                                   |
|           | Maths               | Vetor and 3D                | 2 | Vector Product of Two Vectors and Practice Session-1                                                                                                                                             |
|           | Maths               | Vetor and 3D                | 3 | Vector Product of Two Vectors and Practice Session-1                                                                                                                                             |
| 21-Jan-22 | Physics             | Modern Physics              | 5 | Nuclear Physics-1                                                                                                                                                                                |
|           | Inorganic Chemistry | Hydrogen & its compounds    | 2 | Properties of H <sub>2</sub> O <sub>2</sub> , Hardness of Water and its Removal                                                                                                                  |
|           | Physical Chemistry  | Electrochemistry            | 5 | practise session 3, qualitative aspects of electrolysis, electrolysis of molten and aqueous salt                                                                                                 |
|           | Organic Chemistry   | Hydrocarbons                | 1 | Alkanes (GMP and Properties)                                                                                                                                                                     |
|           | Maths               | Vetor and 3D                | 4 | Practice Session 03                                                                                                                                                                              |
|           | Maths               | Vetor and 3D                | 5 | Basics of 3D and dc's and dr's and Equation of Line                                                                                                                                              |
| 22-Jan-22 | Physics             | Modern Physics              | 6 | Nuclear Physics-2                                                                                                                                                                                |
|           | Physics             | Modern Physics              | 7 | Discussion                                                                                                                                                                                       |
|           | Physical Chemistry  | Electrochemistry            | 6 | practice session 4, special cases of electrolysis                                                                                                                                                |
|           | Organic Chemistry   | Hydrocarbons                | 2 | Alkenes (GMP and Propeties)                                                                                                                                                                      |
|           | Maths               | Vetor and 3D                | 6 | Practice Session 04                                                                                                                                                                              |
|           | Maths               | Vetor and 3D                | 7 | Theory of Plane and Practice Session-5 & 6                                                                                                                                                       |
| 24-Jan-22 | Physics             | Ray Optics                  | 1 | Plane Mirror Reflection                                                                                                                                                                          |
|           | Physics             | Ray Optics                  | 2 | Plane Mirrors                                                                                                                                                                                    |
|           | Organic Chemistry   | Hydrocarbons                | 3 | Alkynes (GMP and Properties)                                                                                                                                                                     |
|           | Physical Chemistry  | Electrochemistry            | 7 | Conductance of Solution-1                                                                                                                                                                        |
|           | Organic Chemistry   | Carboxylic Acids and Amines | 1 | Carboxylic acids methods of preparation and properties                                                                                                                                           |
|           | Maths               | Binomial Theorem            | 1 | Basic Concepts of Binomial Theorem General Term, Middle Term etc. with Practice Session                                                                                                          |

|           |                    |                             |    |                                                                                                                                                                                                                      |
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| 25-Jan-22 | Physics            | Ray Optics                  | 3  | Reflection From Spherical Mirrors                                                                                                                                                                                    |
|           | Physics            | Ray Optics                  | 4  | Spherical Mirror Problems Refraction                                                                                                                                                                                 |
|           | Organic Chemistry  | Carboxylic Acids and Amines | 2  | GMP of amines , Schimdt , Lossen , Curtius reaction<br>Hoffmann broamide degradation, Gabriel pthalimide reaction                                                                                                    |
|           | Physical Chemistry | Electrochemistry            | 8  | Conductance of Solution-2                                                                                                                                                                                            |
|           | Maths              | Binomial Theorem            | 2  | Sum of Coefficient and Numerically Greatest Term and Practice Session                                                                                                                                                |
|           | Maths              | Binomial Theorem            | 3  | Application of Binomial Theorem and Practice Session                                                                                                                                                                 |
| 26-Jan-22 | Physics            | Ray Optics                  | 5  | Critical Angel TIR Plane Surface Refraction                                                                                                                                                                          |
|           | Physics            | Ray Optics                  | 6  | Refraction Through Plane Surfaces                                                                                                                                                                                    |
|           | Organic Chemistry  | Carboxylic Acids and Amines | 3  | Beckmann rearrangement, Carbylamine test ,<br>Hinsbergs test<br>Musturd oil reaction, Diazotisation<br>Sheet Discussion carboxylic acids & Amines                                                                    |
|           | Physical Chemistry | Electrochemistry            | 9  | Conductometric Solution, Cells( Dry, Mercury, Lead Storage, Fuel Cell) Corrosion                                                                                                                                     |
|           | Organic Chemistry  | Aromatic Compounds          | 1  | Electrophillic aromatic substitution reaction , Nitration ,sulphonation halogenation                                                                                                                                 |
|           | Maths              | Binomial Theorem            | 4  | Summation of Series with Practice Sessions                                                                                                                                                                           |
| 27-Jan-22 | Physics            | Ray Optics                  | 7  | Refraction Through Prisms, Spherical Surfaces                                                                                                                                                                        |
|           | Physical Chemistry | Electrochemistry            | 10 | Practice Session 5                                                                                                                                                                                                   |
|           | Organic Chemistry  | Aromatic Compounds          | 2  | F.C. alkylation , acylation, formylation,                                                                                                                                                                            |
|           | Maths              | Permutation and Combination | 1  | Fundamental Principle of Counting and Permutation with Practice Session                                                                                                                                              |
|           | Maths              | Permutation and Combination | 2  | Cyclic Permutation and Practice Session                                                                                                                                                                              |
|           | Maths              | Permutation and Combination | 3  | Combination and Practice Session                                                                                                                                                                                     |
| 28-Jan-22 | Physics            | Ray Optics                  | 8  | Refraction due to Lens                                                                                                                                                                                               |
|           | Physical Chemistry | Chemical Kinetics           | 1  | "Introduction,Rate of Reaction/Disappearance/Appearance,Unit of Rate,Types of Rate (Average and Instantaneous), Factors Affecting Rate,Rate Law,Order and Molecularity,Types of Reaction - Simple and Elementary"    |
|           | Organic Chemistry  | Aromatic Compounds          | 3  | Gattermann Koch, Gattermann Aldehyde reaction, Directive Influence and Activating Deactivation ,Preparation of phenol (ArSn, Cumen hydroperoxide, Dows etc)                                                          |
|           | Physical Chemistry | Chemical Kinetics           | 2  | "Discussion of Practice Session-1,Zero,First,Second and nth Order Reaction, Various Shortcut and JH Tricks for First Order (imp. for JEE)"                                                                           |
|           | Maths              | Permutation and Combination | 4  | Arrangement and Selection of Identical Objects and Practice Session                                                                                                                                                  |
|           | Maths              | Permutation and Combination | 5  | Grouping and Practice Session                                                                                                                                                                                        |
| 29-Jan-22 | Physics            | Ray Optics                  | 9  | Lens, Dispersion of Light                                                                                                                                                                                            |
|           | Physics            | Ray Optics                  | 10 | Dispersion, Optical Instruments                                                                                                                                                                                      |
|           | Organic Chemistry  | Aromatic Compounds          | 4  | Diazo Coupling (C-N, N-N) , other reaction of PhN2Cl,Reaction of phenol (Reimer -Tiemann reaction, Kolbe reaction) Preparation of DDT, Phenophthalein, TNT, Picric acid , Oxidation & reduction of aromatic compound |
|           | Organic Chemistry  | Biomolecules                | 1  | Introduction of amino acid,Types of amino acid (Classification )<br>Preparation of amino acid<br>Electrophoresis, Isoelectric point & calculation of isoelectric point.                                              |
|           | Maths              | Permutation and Combination | 6  | Distribution Identical Objects and Derrangement Theorem with Practice Session                                                                                                                                        |
|           | Maths              | Probability                 | 1  | Basics of Probability and Classical Defination Probability with Practice Session                                                                                                                                     |

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| 31-Jan-22 | Physics            | Ray Optics                 | 11 | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                   |
|           | Physics            | Heat Transfer              | 1  | Thermal Conduction                                                                                                                                                                                                                                                                                                                                                                                                           |
|           | Physical Chemistry | Chemical Kinetics          | 3  | " Discussion of Practice Session 2, Experimental Methods to Determine Order of Reaction, Determination of Rate Constant of First Order Reaction Using Different Parameters"                                                                                                                                                                                                                                                  |
|           | Organic Chemistry  | Biomolecules               | 2  | Structure of amino acid at different pH, Separation of mixture of amino acid<br>Reaction of amino acid<br>Peptide , hydrolysis of peptide,<br>Proteins & all structure , Test for protein                                                                                                                                                                                                                                    |
|           | Physical Chemistry | Chemical Kinetics          | 4  | "Discussion of Practise Session 3, Special Cases of First Order Reaction (1. Side or Parallel 2. Series or Sequential), Effect of Temperature- Temperature Coefficient, Arrhenius Equation , Variation of Rate Constant With Temperature"                                                                                                                                                                                    |
|           | Maths              | Probability                | 2  | Practice Session                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1-Feb-22  | Physics            | Heat Transfer              | 2  | Thermal Radiation, Discussion                                                                                                                                                                                                                                                                                                                                                                                                |
|           | Physics            | String Waves & Sound Wave  | 1  | Travelling Transverse Wave In String                                                                                                                                                                                                                                                                                                                                                                                         |
|           | Organic Chemistry  | Biomolecules               | 3  | Introduction , definition & classification , Naming of monosaccharide<br>Epimer & anomer Hawarth projection & chair conformation representation of monosaccharide (glucose, fructose, mannose, galactose, )<br>Study of Disaccharide and polysaccharide & their hydrolysis, Test for carbohydrate DNA & RNA                                                                                                                  |
|           | Physical Chemistry | Chemical Kinetics          | 5  | "Effect of Temperature on Equilibrium Constant, Effect of Catalyst, Effective Collision Theory, Mechanism of Complex Reaction, Solved Numerical Class illustration"                                                                                                                                                                                                                                                          |
|           | Maths              | Probability                | 3  | Venn Digram and Conditional Probability                                                                                                                                                                                                                                                                                                                                                                                      |
|           | Maths              | Probability                | 4  | Conditional Probability and Practice Session                                                                                                                                                                                                                                                                                                                                                                                 |
| 2-Feb-22  | Physics            | String Waves & Sound Wave  | 2  | Superposition of Transverse Waves                                                                                                                                                                                                                                                                                                                                                                                            |
|           | Physics            | String Waves & Sound Wave  | 3  | Standing Waves ( Transverse )                                                                                                                                                                                                                                                                                                                                                                                                |
|           | Physical Chemistry | Gaseous State              | 1  | Gas Law's, Manometer and Barometer, Dalton's Law, Effusion and Diffusion                                                                                                                                                                                                                                                                                                                                                     |
|           | Organic Chemistry  | Polymers & POC             | 1  | Introduction , classification , Based on source / shape / reaction they are formed Classification based on molecular forces (Elastomer, fibre, thermoplastic, thermosetting), Types of polymerisation reaction, Zeigler natta catalyst. Details study of natural rubber, Gutta purcha , nylon-6, nylon-66 , phenol- formaldehyde resin, malamine formaldehyde resin, neoprin, buna-s, buna-n etc., Commercial use of polymer |
|           | Physical Chemistry | Gaseous State              | 2  | Kinetic Theory of Gases, Types of Molecular Speeds, Maxwell's Distribution Curve and Mean Free Path                                                                                                                                                                                                                                                                                                                          |
|           | Maths              | Probability                | 5  | Multiplication Theorem, Total Probability Theorem bayes Theorem and Extended Bayes Theorem with Practice Session                                                                                                                                                                                                                                                                                                             |
| 3-Feb-22  | Physics            | String Waves & Sound Wave  | 4  | Travelling Longitudinal Waves and Doppler's Effect                                                                                                                                                                                                                                                                                                                                                                           |
|           | Organic Chemistry  | Polymers & POC             | 2  | Test of alcohols, phenolic OH, terminal alkyne, aldehydes , Ketone, unsaturation, amines, carboxylic acid, aromatic compounds.<br>Lassign test (elemental analysis) , binary mixture separation , solubility test                                                                                                                                                                                                            |
|           | Organic Chemistry  | Chemistry in everyday life | 1  | Drugs and Medicines & its classification , Drug target intraction; Therapeutic action of drug (tranquillizers, analgesics, antibiotics, antiseptic, disinfectants, antifertility drugs, )<br>Chemical & foods (artificial sweetening agent, Food preservatives) Soaps, Saponification, degergents                                                                                                                            |
|           | Maths              | Complex Number             | 1  | Basics of Complex Numbers and Practice Session                                                                                                                                                                                                                                                                                                                                                                               |
|           | Maths              | Complex Number             | 2  | Theory and Practices Session Based Upon Concept of Locus                                                                                                                                                                                                                                                                                                                                                                     |
|           | Maths              | Complex Number             | 3  | Properties of Conjugate and Amplitude and Modulus with Practice Session                                                                                                                                                                                                                                                                                                                                                      |

|           |                                                              |                                         |                                    |                                                                                                        |
|-----------|--------------------------------------------------------------|-----------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------|
| 4-Feb-22  | Physics                                                      | String Waves & Sound Wave               | 5                                  | Till Standing Longitudinal Waves                                                                       |
|           | Physical Chemistry                                           | Gaseous State                           | 3                                  | Real Gases, Deviation From Ideal Behaviour, Vander Waals Equation, Compressibility Factor              |
|           | Physical Chemistry                                           | Gaseous State                           | 4                                  | Compressibility Factor in Different Conditions Liquefaction and Critical Constants Boyle's Temperature |
|           | Physical Chemistry                                           | Atomic Structure                        | 1                                  | Planck's quantum theory, Photo electric effect, Rutherford's model                                     |
|           | Maths                                                        | Complex Number                          | 4                                  | Rotational Theorem with Practice Session and same Part of Theory of nth Roots of Unity                 |
|           | Maths                                                        | Complex Number                          | 5                                  | nth Roots of Unity and Cube Roots of Unity With Practice Session                                       |
| 5-Feb-22  | Physics                                                      | String Waves & Sound Wave               | 6                                  | Resonance Column Interference Beats                                                                    |
|           | Physics                                                      | Wave Optics                             | 1                                  | Huygens Principle and Interference of Light                                                            |
|           | Physical Chemistry                                           | Atomic Structure                        | 2                                  | Bohr's model & Hydrogen spectrum                                                                       |
|           | Physical Chemistry                                           | Atomic Structure                        | 3                                  | Quantum mechanical model &                                                                             |
|           | Maths                                                        | JEE Main Topic (Mathematical Reasoning) | 1                                  | Complete Theory with Illustrations                                                                     |
| Maths     | JEE Main Topic (PMI, Height and Distance & Sets & Relations) | 1                                       | Complete Theory with Illustrations |                                                                                                        |
| 7-Feb-22  | Physics                                                      | Wave Optics                             | 2                                  | YDSE                                                                                                   |
|           | Physics                                                      | Wave Optics                             | 3                                  | Cases Similar to YDSE, Thin Film Interference                                                          |
|           | Physical Chemistry                                           | Atomic Structure                        | 4                                  | Schrodinger's wave equation                                                                            |
|           | Physical Chemistry                                           | Atomic Structure                        | 5                                  | Practice Session -1                                                                                    |
|           | Physical Chemistry                                           | Surface Chemistry                       | 1                                  | Adsorption & Absorption                                                                                |
|           | Maths                                                        | JEE Main Topic (Statistics)             | 1                                  | Complete Theory with Illustrations                                                                     |
| 8-Feb-22  | Physics                                                      | Wave Optics                             | 4                                  | Diffraction Polarisation and EM Waves                                                                  |
|           | Physics                                                      | Wave Optics                             | 5                                  | Discussion                                                                                             |
|           | Physical Chemistry                                           | Surface Chemistry                       | 2                                  | catalysis & their types                                                                                |
|           | Physical Chemistry                                           | Surface Chemistry                       | 3                                  | colloids and their classification, preparation of colloids                                             |
| 9-Feb-22  | Physics                                                      | Fluid Mechanics                         | 1                                  | Fluid Statics                                                                                          |
|           | Physics                                                      | Fluid Mechanics                         | 2                                  | Fluid Statics Problems, Fluid Dynamics                                                                 |
|           | Physical Chemistry                                           | Surface Chemistry                       | 4                                  | properties of colloids, Coagulation and protection of colloids, purification and Emulsions             |
|           | Physical Chemistry                                           | Surface Chemistry                       | 5                                  | Discussion Practice Session-1                                                                          |
| 10-Feb-22 | Physics                                                      | Fluid Mechanics                         | 3                                  | Fluid Dynamic, Surface Tension                                                                         |
|           | Physics                                                      | Fluid Mechanics                         | 4                                  | Surface Tension and Viscosity                                                                          |
| 11-Feb-22 | Physics                                                      | Error and Measurement                   | 1                                  | Significant Digits and Errors                                                                          |
|           | Physics                                                      | Error and Measurement                   | 2                                  | Vernier Callipers And Screw Gauge                                                                      |
| 12-Feb-22 | Physics                                                      | Semi Conductors and Communication       | 1                                  | Semi Conductor- Types, P-N Junction                                                                    |
|           | Physics                                                      | Semi Conductors and Communication       | 2                                  | P-N Diodes, Rectifier, Types of Diodes                                                                 |
| 14-Feb-22 | Physics                                                      | Semi Conductors and Communication       | 3                                  | Transistor                                                                                             |
|           | Physics                                                      | Semi Conductors and Communication       | 4                                  | Logic Gates and Problems                                                                               |
|           | Physics                                                      | Semi Conductors and Communication       | 5                                  | Communication System                                                                                   |

| Time Saver Course for JEE Advanced<br>Lecture Plan - Physics |                                                              |                 |
|--------------------------------------------------------------|--------------------------------------------------------------|-----------------|
| S.No.                                                        | Chapter Name                                                 | No. of Lectures |
| 1                                                            | Electrostatics                                               | 4               |
| 2                                                            | Current Electricity                                          | 3               |
| 3                                                            | Capacitance                                                  | 2               |
| 4                                                            | Magnetic Effect of Current                                   | 3               |
| 5                                                            | EMI                                                          | 3               |
| 6                                                            | AC                                                           | 2               |
| 7                                                            | Modern Physics                                               | 5               |
| 8                                                            | Ray Optics                                                   | 5               |
| 9                                                            | KTG and Thermodynamics                                       | 2               |
| 10                                                           | Elasticity, Calorimetry, Thermal Expansion and Heat Transfer | 4               |
| 11                                                           | SHM                                                          | 2               |
| 12                                                           | Wave                                                         | 4               |
| 13                                                           | Wave Optics                                                  | 3               |
| 14                                                           | Fluid Mechanism                                              | 3               |
| 15                                                           | Mechanics                                                    | 5               |
| 16                                                           | Semiconductor                                                | 1               |
| <b>Total</b>                                                 |                                                              | <b>51</b>       |

| Time Saver Course for JEE Advanced<br>Lecture Plan - Chemistry |                                                       |                 |
|----------------------------------------------------------------|-------------------------------------------------------|-----------------|
| S.No.                                                          | Chapter Name                                          | No. of Lectures |
| 1                                                              | Solid State                                           | 2               |
| 2                                                              | Liquid Solution                                       | 2               |
| 3                                                              | Chemical Kinetics & Radioactivity                     | 3               |
| 4                                                              | Thermodynamics                                        | 3               |
| 5                                                              | Chemical & Ionic Equilibrium                          | 4               |
| 6                                                              | Redox Reaction & Electrochemistry                     | 3               |
| 7                                                              | Atomic structure                                      | 1               |
| 8                                                              | Gaseous state                                         | 1               |
| 9                                                              | Surface Chemistry                                     | 1               |
| 10                                                             | p-block                                               | 3               |
| 11                                                             | d-block                                               | 1               |
| 12                                                             | Periodic table & Chemical bonding                     | 3               |
| 13                                                             | Environmental Chemistry                               | 1               |
| 14                                                             | Coordination Compounds                                | 3               |
| 15                                                             | s-block & Hydrogen                                    | 1               |
| 16                                                             | Metallurgy                                            | 1               |
| 17                                                             | Salt Analysis                                         | 2               |
| 18                                                             | Carbonyl Compounds                                    | 2               |
| 19                                                             | GOC                                                   | 2               |
| 20                                                             | Hydrocarbons                                          | 2               |
| 21                                                             | Halogen derivatives                                   | 2               |
| 22                                                             | Carboxylic acid, oxidation and reduction              | 2               |
| 23                                                             | Aromatic Compounds                                    | 3               |
| 24                                                             | Amines                                                | 1               |
| 25                                                             | Free radical, alcohol and grignard reagent            | 2               |
| 26                                                             | Isomerism                                             | 2               |
| 27                                                             | Biomolecules, Polymers and Chemistry in Everyday Life | 3               |
| <b>Total</b>                                                   |                                                       | <b>56</b>       |

| Time Saver Course for JEE Advanced<br>Lecture Plan - Mathematics |                                       |                 |
|------------------------------------------------------------------|---------------------------------------|-----------------|
| S.No.                                                            | Chapter Name                          | No. of Lectures |
| 1                                                                | Solution of triangle                  | 3               |
| 2                                                                | Vector & 3D                           | 4               |
| 3                                                                | Quadratic Equation & Basics           | 3               |
| 4                                                                | Sequence & Series                     | 2               |
| 5                                                                | Trigonometry                          | 2               |
| 6                                                                | Function & ITF                        | 3               |
| 7                                                                | Limit, Continuity & Differentiability | 3               |
| 8                                                                | Method of differentiation             | 2               |
| 9                                                                | Indefinite Integration                | 1               |
| 10                                                               | Definite Integration                  | 2               |
| 11                                                               | Area Under Curve                      | 1               |
| 12                                                               | Differential Equation                 | 1               |
| 13                                                               | Application of derivatives            | 4               |
| 14                                                               | Point & Straight Line & Circle        | 3               |
| 15                                                               | Conic Section                         | 4               |
| 16                                                               | Matrix & Determinant                  | 2               |
| 17                                                               | Complex Number                        | 3               |
| 18                                                               | Permutation & Combination             | 3               |
| 19                                                               | Probability                           | 3               |
| 20                                                               | Binomial Theorem                      | 2               |
| <b>Total</b>                                                     |                                       | <b>51</b>       |

**Note-**

This Lecture Plan is an estimated plan by Faculty, actual Lectures may vary according to Chapters taught by Faculty. Lectures may increase or decrease in Chapters when taught by Faculty.