NARAYANA IIT ACADEMY INDIA

46 YEARS OF EXCELLENCE

*CO SUPER CHAINA (MODEL-A) REVISION PROGRAMME TEACHING & EXAM SCHEDULE_2025-26

Code: 08-07-2025 @ 6:00PM

Revision Schedule		DATES	SYLLABUS		
			MATHEMATICS	PHYSICS	CHEMISTRY
PT-1	Teaching Schedule	28.07.25 TO 02.08.25	**Functions :** Real Valued Functions Of A Real Variable, Into, Onto And One-To-One Functions, Absolute Value, Polynomial, Rational, Trigonometric, Exponential And Logarithmic Functions, Even And Odd Functions, Sum, Difference, Product And Quotient Of Two Functions, Composite Functions, Inverse Of A Function **LIMITS**	**Heat & Thermodynamics:** Thermal expansion of solids, liquids and gases; Ideal gas laws; Specific heats (Cv and Cp for monoatomic and diatomic gases); Isothermal and adiabatic processes, bulk modulus of gases; Equivalence of heat and work; First law of thermodynamics and its applications (only for ideal gases); Second law of thermodynamics, reversible and irreversible processes, Carnot engine and its efficiency; **(Exclude: Heat Transfer & calorimetry)**	**PURIFICATION AND CHARACTERISATION OF ORGANIC COMPOUNDS** **Purification** - Crystallization, sublimation, distillation, differential extraction, and chromatography - principles and their applications. **Qualitative analysis** - Detection of nitrogen, sulphur, phosphorus, and halogens. **Quantitative analysis** (basic principles only) - Estimation of carbon, hydrogen, nitrogen, halogens, sulphur, and phosphorus. Calculations of empirical formulae and molecular formulae: Numerical problems in organic quantitative analysis

					Structure: Hybridisation of carbon; σ and π-bonds; Shapes of simple organic molecules; **IUPAC:** nomenclature of organic molecules (hydrocarbons, including simple cyclic hydrocarbons and their mono-functional and bi-functional derivatives only); **Isomerism:** Structural and geometrical isomerism; Stereoisomers and stereo chemical relationship (enantiomers, diastereomers, meso) of compounds containing only up to two asymmetric centres (R,S and E,Z configurations excluded); Conformations of ethane and butane (Newman projections only); (**Exclude:** Tautomerism) (**Note:** Strictly related from the topic " **Purification and characterization**":- 3 or 4 NCERT based JEE level q's must be given in the Exam)
EXAM SCHEDULE	**03.08.25**	**MODEL-A**	**P-I: PTA-1 (ADV MODEL)**	**PT-1 SYLLABUS ONLY**	
			P-II: GTM-1 (MAINS MODEL)	**TOTAL SYLLABUS**	

PT-2	**Teaching Schedule**	**04.08.25 TO 09.08.25**	**ITF :** Inverse Trigonometric Functions **(Principal Value Only)** **Sets & Relations**	**HEAT TRANSFER:** Heat conduction in one dimension; Elementary concepts of convection and radiation; Newton's law of cooling, Blackbody radiation: absorptive and emissive powers; Kirchhoff's law; Wien's displacement law, Stefan's law. **CALORIMETRY:** Calorimetry, latent heat; **Units and dimensions:** Units and dimensions, dimensional analysis **Error Analysis + Screw Gauge/ Vernier Calipers + All Experiments Of JEE Advance Syllabus:** Least count, significant figures; Methods of measurement and error analysis for physical quantities pertaining to the following **Experiments:** Experiments based on using Vernier calipers and screw gauge (micrometer), Determination of g using simple pendulum, Young's modulus by Searle's method, Specific heat of a liquid using calorimeter, focal length	**GOC:** aromaticity; Hydrogen bonding effects; Inductive, Resonance and Hyperconjugative effects; Acidity and basicity of organic compounds; Reactive intermediates produced during homolytic and heterolytic bond cleavage; Formation, structure and stability of carbocations, carbanions and free radicals. **Tautomerism** **Chemistry in Everyday Life:** Drug-target interaction; Therapeutic action, and examples (excluding structures), of antacids, antihistamines, tranquilizers, analgesics, antimicrobials, and antifertility drugs; Artificial sweeteners (names only); Soaps, detergents, and cleansing action. (**Note:** Strictly related from the topic " **Chemistry in Everyday Life:** ":- 3 or 4 NCERT based JEE level q's must be given in the Exam)

				of a concave mirror and a convex lens using u-v method, Speed of sound using resonance column, Verification of Ohm's law using voltmeter and ammeter, and specific resistance of the material of a wire using meter bridge and post office box.	
EXAM SCHEDULE	**10.08.25**	**MODEL-A**	**P-I: PTA-2 (ADV MODEL)**	**PT-2 SYLLABUS ONLY**	
			P-II: CTA-1 (ADV MODEL)	**PT-1 TO PT-2 SYLLABUS ONLY**	
PT-3	**Teaching Schedule**	**11.08.25 TO 16.08.25**		**Continuity, Differentiability Derivatives :** Continuity Of Composite Functions, Intermediate Value Property Of Continuous Functions, Derivative of a function, derivative of the sum, difference, product and quotient of two functions, chain rule, derivatives of polynomial, rational, trigonometric, inverse trigonometric, exponential and logarithmic functions. derivatives of implicit functions, derivatives up to order two	**Electrostatics, Gauss law (Excluding capacitors):** Coulomb's law; Electric field Coulomb's law; Electric field and potential; Electrical potential energy of a system of point charges and of electrical dipoles in a uniform electrostatic field; Electric field lines; Flux of electric field; Gauss's law and its application in simple cases, such as, to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell.	**HYDROCARBONS: Alkanes:** Homologous series; Physical properties (melting points, boiling points and density) and effect of branching on them; Preparation from alkyl halides and aliphatic carboxylic acids; Reactions: combustion, halogenation (including allylic and benzylic halogenation) and oxidation. **Alkenes, Dienes and Alkynes :** Physical properties (boiling points, density and dipole moments); Preparation by

					GRAVITATION: Law of gravitation; Gravitational potential and field; Acceleration due to gravity; Kepler's law, Geostationary orbits, Motion of planets and satellites in circular orbits; Escape velocity.	elimination reactions; Acid catalysed hydration Metal acetylides; Reactions of alkenes with KMnO4 and ozone; Reduction of alkenes and alkynes; Electrophilic addition reactions of alkenes with X2, HX, HOX, (X=halogen); Effect of peroxide on addition reactions; cyclic polymerization reaction of alkynes. **Benzene:** Structure; Electrophilic substitution reactions: halogenation, nitration, sulphonation, Friedel-Crafts alkylation and acylation; Effect of directing groups (monosubstituted benzene) in these reactions.
EXAM SCHEDULE	**17.08.25**	**MODEL-A**	**P-I: PTA-3 (ADV MODEL)**	**PT-3 SYLLABUS ONLY**		
			P-II: CTA-2 (ADV MODEL)	**PT-1 TO PT-2 SYLLABUS ONLY**		

PT-4	**Teaching Schedule**	**18.08.25 TO 23.08.25**		**Indefinite Integration:** integration as the inverse process of differentiation, indefinite integrals of standard functions. integration by parts, integration by the methods of substitution and partial fractions. $\int \sqrt{ax^2+bx+c}\,dx$ and $\int (ax+b)\sqrt{ax^2+bx+c}\,dx$	**Current Electricity + Capacitors + RC Circuits Capacitance;** Parallel plate capacitor with and without dielectrics; Capacitors in series and parallel; Energy stored in a capacitor. Electric current; Ohm's law; Series and parallel arrangements of resistances and cells; Kirchhoff's laws and simple applications; Heating effect of current.	**Alkyl Halides:** Rearrangement reactions of alkyl carbocation; Grignard reactions; Nucleophilic substitution reactions and their stereochemical aspects. **Aryl Halides** : Reactions: Fittig, Wurtz-Fittig; Nucleophilic aromatic substitution in haloarenes and substituted haloarenes (excluding benzyne mechanism and cine substitution). (**Exclude:** Grignard-reagent) **Polymers:** Types of polymerization (addition, condensation); Homo and copolymers; Natural rubber; Cellulose; Nylon; Teflon; Bakelite; PVC; Bio-degradable polymers; Applications of polymers. (**Note:** Strictly related from the topic " **Polymers :** ":- 3 or 4 NCERT based JEE level q's must be given in the Exam)
EXAM SCHEDULE	**24.08.25**	**MODEL-A**	**P-I: PTA-4 (ADV MODEL)**	**PT-4 SYLLABUS ONLY**		
			P-II: CTA-3 (ADV MODEL)	**PT-1 TO PT-3 SYLLABUS ONLY**		

PT-5	**Teaching Schedule**	**25.08.25 TO 30.08.25**		**Definite Integration:** definite integrals and their properties, fundamental theorem of integral calculus. definite integrals as a limit of sum Definite Integration	**Moving charges and Magnetism:** Biot–Savart's law and Ampere's law; Magnetic field near a current-carrying straight wire, along the axis of a circular coil and inside a long straight solenoid; Force on a moving charge and on a current-carrying wire in a uniform magnetic field. Magnetic moment of a current loop; Effect of a uniform magnetic field on a current loop; Moving coil galvanometer, voltmeter, ammeter and their conversions.	**Alcohols:** Physical properties; Reactions: esterification, dehydration (formation of alkenes and ethers); Reactions with: sodium, phosphorus halides, ZnCl2/concentrated HCl, thionyl chloride; Conversion of alcohols into aldehydes, ketones and carboxylic acids. **Phenols:** Physical properties; Preparation, Electrophilic substitution reactions of phenol (halogenation, nitration, sulphonation); Reimer-Tiemann reaction, Kolbe reaction; Esterification; Etherification; Aspirin synthesis; Oxidation and reduction reactions of phenol **Ethers:** Preparation by Williamson's synthesis; C-O bond cleavage reactions. **Grignard-reagent**
EXAM SCHEDULE	**31.08.25**	**MODEL-A**	**P-I: PTA-5 (ADV MODEL)**	**PT-5 SYLLABUS ONLY**		
			P-II: CTA-4 (ADV MODEL)	**PT-1 TO PT-4 SYLLABUS ONLY**		

PT-6	**Teaching Schedule**	**01.09.25 TO 06.09.25**		**Areas:** application of definite integrals to the determination of areas involving simple curves. **Differential Equations:** Solution of homogeneous differential equations, separation of variables method Formation of ordinary differential equations, linear first order differential equations.	**EMI and AC:** Electromagnetic induction: Faraday's law, Lenz's law; Self and mutual inductance; RC, LR and LC circuits with d.c. and a.c. sources.	**Aldehydes and Ketones:** Preparation of aldehydes and ketones from acid chlorides and nitriles; aldehydes from esters; benzaldehyde from toluene and benzene; Reactions: oxidation, reduction, oxime and hydrazone formation; Aldol condensation, Cannizzaro reaction; Haloform reaction; Nucleophilic addition reaction with RMgX, NaHSO3, HCN, alcohol, amine. **Carboxylic Acids:** Physical properties; Preparation: from nitriles, Grignard reagents, hydrolysis of esters and amides; Preparation of benzoic acid from alkylbenzenes; Reactions: reduction, halogenation, formation of esters, acid chlorides and amides.
EXAM SCHEDULE	**07.09.25**	**MODEL-A**	**P-I: PTA-6 (ADV MODEL)**	**PT-6 SYLLABUS ONLY**		
			P-II: CTA-5 (ADV MODEL)	**PT-1 TO PT-5 SYLLABUS ONLY**		

PT-7	**Teaching Schedule**	**08.09.25 TO 13.09.25**		**Application of Derivatives:** geometrical interpretation of the derivative, tangents and normals, increasing and decreasing functions, maximum and minimum values of a function rolle's theorem and lagrange's mean value theorem. Rate of change of bodies, use of derivatives in approximation.	**EM WAVES:** Electromagnetic waves and their characteristics. Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, x-rays, gamma rays) including elementary facts about their uses **Diffraction, Polarization:** Diffraction due to a single slit. Polarization of light, plane polarized light; Brewster's law, Polaroids **YDSE:** Wave nature of light: Huygen's principle, interference limited to Young's double slit experiment.	**Amines:** Preparation from nitro compounds, nitriles and amides; Reactions: Hoffmann bromamide degradation, Gabriel phthalimide synthesis; Reaction with nitrous acid, Azo coupling reaction of diazonium salts of aromatic amines; Sandmeyer and related reactions of diazonium salts; Carbylamine reaction, Hinsberg test, Alkylation and acylation reactions. **Biomolecules:** Carbohydrates: Classification; Mono- and di-saccharides (glucose and sucrose); Oxidation; Reduction; Glycoside formation and hydrolysis of disaccharides (sucrose, maltose, lactose); Anomers. **Proteins:** Amino acids; Peptide linkage; Structure of peptides (primary and secondary); Types of proteins (fibrous and globular). **Nucleic acids:** Chemical composition and structure of DNA and RNA. **Vitamins** **POC:** Detection of elements (N, S, halogens); Detection and identification of the following functional groups: hydroxyl (alcoholic and phenolic), carbonyl (aldehyde and ketone), carboxyl, amino and nitro.
EXAM SCHEDULE	**14.09.25**	**MODEL-A**	**P-I: PTA-7 (ADV MODEL)**	**PT-7 SYLLABUS ONLY**		
			P-II: CTA-6 (ADV MODEL)	**PT-1 TO PT-6 SYLLABUS ONLY**		

PT-8	**Teaching Schedule**	**15.09.25 TO 20.09.25**		**Revision of Calculus**	**Ray Optics:** Rectilinear propagation of light; Reflection and refraction at plane and spherical surfaces; Total internal reflection; Deviation and dispersion of light by a prism; Thin lenses; Combinations of mirrors and thin lenses;	**Stoichiometry:** Concept of atoms and molecules; Dalton's atomic theory; Mole concept; Chemical formulae; Balanced chemical equations; Calculations (based on mole concept and stoichiometry) involving common oxidation-reduction, neutralisation, and displacement reactions; Concentration in terms of mole fraction, molarity, molality and normality. **Titrations** **Gaseous and Liquid State:** Gas laws and ideal gas equation, absolute scale of temperature; Deviation from ideality, van der Waals equation; Kinetic theory of gases, average, root mean square and most probable velocities and their relation with temperature; Law of partial pressures; Diffusion of gases. Intermolecular interactions: types, distance dependence, and their effect on properties; Liquids: vapour pressure, surface tension, viscosity.
EXAM SCHEDULE	**21.09.25**	**MODEL-A**	**P-I: PTA-8 (ADV MODEL)**	**PT-8 SYLLABUS ONLY**		
			P-II: CTA-7 (ADV MODEL)	**PT-1 TO PT-7 SYLLABUS ONLY**		

PT-9	**Teaching Schedule**	**22.09.25 TO 27.09.25**		**Vectors**: Addition of vectors, scalar multiplication, dot and cross products, scalar and vector triple products, and their geometrical interpretations.	**Optical instruments**: Magnification. Microscope and Astronomical Telescope (reflecting and refracting) and their magnifying powers. **Atomic Physics, X-rays:** Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum, Characteristic and continuous X-rays, Moseley's law	**Thermodynamics & Thermochemistry:** Intensive and extensive properties, state functions, First law of thermodynamics; Internal energy, work (pressure-volume only) and heat; Enthalpy, heat capacity, standard state, Hess's law; Enthalpy of reaction, fusion and vaporization, and lattice enthalpy; Second law of thermodynamics; Entropy; Gibbs energy; Criteria of equilibrium and spontaneity.
EXAM SCHEDULE	**28.09.25**	**MODEL-A**	**P-I: PTA-9 (ADV MODEL)**	**PT-9 SYLLABUS ONLY**		
			P-II: CTA-8 (ADV MODEL)	**PT-1 TO PT-8 SYLLABUS ONLY**		
29.09.25 TO 05.10.25				**DUSSHERA HOLIDAYS**		

PT-10	**Teaching Schedule**	**06.10.25 TO 11.10.25**		**Vectors:** Addition of vectors, scalar multiplication, dot and cross products, scalar and vector triple products, and their geometrical interpretations. **3-D:** Distance between two points, direction cosines and direction ratios, equation of a straight line in space, skew lines, shortest distance between two lines, equation of a plane, distance of a point from a plane, angle between two lines, angle between two planes, angle between a line and the plane, coplanar lines.	**Complete Nuclear physics:** Atomic nucleus; α, β and γ radiations; Law of radioactive decay; Decay constant; Half-life and mean life; Binding energy and its calculation; Fission and fusion processes; Energy calculation in these processes. **Dual nature of matter & Radiation:** Dual nature of radiation. Photoelectric effect. Hertz and Lenard's observations; Einstein's photoelectric equation: particle nature of light. Matter waves-wave nature of particle, de Broglie relation.	**Chemical and Ionic Equilibrium:** Law of mass action; Significance of ΔG ΔG^0 in chemical equilibrium; Equilibrium constant (Kp and Kc) and reaction quotient, Le Chatelier's principle (effect of concentration, temperature and pressure); Solubility product and its applications, common ion effect, pH and buffer solutions; Acids and bases (Bronsted and Lewis concepts); Hydrolysis of salts.
EXAM SCHEDULE	**12.10.25**	**MODEL-A**	**P-I: PTA-10 (ADV MODEL)**	**PT-10 SYLLABUS ONLY**		
			P-II: CTA-9 (ADV MODEL)	**PT-1 TO PT-9 SYLLABUS ONLY**		

PT-11	**Teaching Schedule**	**13.10.25 TO 18.10.25**		**Matrices:** Matrices as a rectangular array of real numbers, equality of matrices, addition, multiplication by a scalar and product of matrices, transpose of a matrix, determinant of a square matrix of order up to three inverse of a square matrix of order up to three, properties of these matrix operations, diagonal, symmetric and skew-symmetric matrices and their properties, solutions of simultaneous linear equations in two or three variables. Existence of non zero matrices whose product is zero matrix. Elementary row transformation proof of uniqueness inverse of matrix. Properties of Determinants, consistency, inconsistency of number of solutions of system of equations. **DETERMINANTS**	**Kinematics:** Kinematics in one and two dimensions (Cartesian coordinates only), projectiles, Relative velocity. Kinematics	**Chemical Kinetics:** Rates of chemical reactions; Order and molecularity of reactions; Rate law, rate constant, half-life; Differential and integrated rate expressions for zero and first order reactions; Temperature dependence of rate constant (Arrhenius equation and activation energy); **Solutions:** Henry's law; Raoult's law; Ideal solutions; Colligative properties: lowering of vapour pressure, elevation of boiling point, depression of freezing point, and osmotic pressure; van't Hoff factor.
EXAM SCHEDULE	**19.10.25**	**MODEL-A**	**P-I: PTA-11 (ADV MODEL)**	**PT-11 SYLLABUS ONLY**		
			P-II: CTA-10 (ADV MODEL)	**PT-1 TO PT-10 SYLLABUS ONLY**		

PT-12	**Teaching Schedule**	**20.10.25 TO 25.10.25**		**Quadratic Equations:** Quadratic Equations In Real And Complex Number System And Their Solutions, Relation Between Roots And Coefficients Nature Of Roots, Formation Of Quadratic Equation With Given Roots **Sequences And Series:** Arithmetic, Geometric And Harmonic Progressions, Arithmetic, Geometric? And Harmonic Means, Sums Of Finite Arithmetic And Geometric Progressions, Infinite Geometric Series, Sums Of Squares And Cubes Of The First N Natural Numbers **Logarithms:** Logarithm And Their Properties	**NLM:** Newton's laws of motion; Inertial and uniformly accelerated frames of reference; **Friction:** Static and dynamic friction	**Electrochemistry:** Electrochemical cells and cell reactions; Standard electrode potentials; Electrochemical work, Nernst equation; Electrochemical series, emf of galvanic cells; Faraday's laws of electrolysis; Electrolytic conductance, specific, equivalent and molar conductivity, Kohlrausch's law; Batteries: Primary and Secondary, fuel cells; Corrosion.
EXAM SCHEDULE	**26.10.25**	**MODEL-A**	**P-I: PTA-12** (ADV MODEL)	**PT-12 SYLLABUS ONLY**		
			P-II: GTM-2 (MAIN MODEL)	**TOTAL SYLLABUS**		

PT-13	**Teaching Schedule**	**27.10.25 TO 01.11.25**		**Binomial Theorem:** Binomial Theorem For A Positive Integral Index, Properties Of Binomial Coefficients **Statistics:** Measure of central tendency and dispersion, mean, median, mode, mean deviation, standard deviation and variance of grouped and ungrouped data, analysis of the frequency distribution with same mean but different variance, random variable, mean and variance of the random variable	**Circular motion+ Work power energy:** Uniform circular motion, Kinetic and potential energy; Work and power; mechanical energy.	**Solid State:** Classification of solids, crystalline state, seven crystal systems (cell parameters a, b, c, α, β, γ), close packed structure of solids (cubic and hexagonal), packing in fcc, bcc and hcp lattices; Nearest neighbours, ionic radii and radius ratio, point defects. **Atomic Structure:** Bohr model, spectrum of hydrogen atom; Wave-particle duality, de Broglie hypothesis; Uncertainty principle; Qualitative quantum mechanical picture of hydrogen atom: Energies, quantum numbers, wave function and probability density (plots only), shapes of s, p and d orbitals; Aufbau principle; Pauli's exclusion principle and Hund's rule
EXAM SCHEDULE	**02.11.25**	**MODEL-A**	**P-I: PTA-13 (ADV MODEL)**	**PT-13 SYLLABUS ONLY**		
			P-II: CTA-11 (ADV MODEL)	**PT-1 TO PT-12 SYLLABUS ONLY**		

PT-14	**Teaching Schedule**	**03.11.25 TO 08.11.25**		**Permutations & Combinations**	**COM, Momentum & Collision:** Systems of particles; Centre of mass and its motion; Conservation of linear momentum, Impulse; Elastic and inelastic collisions.	**Surface Chemistry:** **Adsorption:** Elementary concepts of adsorption: Physisorption and Chemisorption, Freundlich adsorption isotherm; **CATALYSIS:** Homogeneous and heterogeneous, activity and selectivity of solid catalysts, enzyme catalysis and its mechanism. **Colloids:** types, methods of preparation and general properties; Elementary ideas of emulsions, surfactants and micelles (only definitions and examples). **Environmental chemistry:** Atmospheric pollution; water pollution; soil pollution; industrial waste; strategies to control environmental pollution; green chemistry.
EXAM SCHEDULE	**09.11.25**	**MODEL-A**	**P-I: PTA-14 (ADV MODEL)**	**PT-14 SYLLABUS ONLY**		
			P-II: GTA-1 (ADV MODEL)	**TOTAL SYLLABUS**		

PT-15	**Teaching Schedule**	**10.11.25 TO 15.11.25**		**Probability:** addition and multiplication rules of probability, conditional probability **bayes theorem, independence of events**, computation of probability of events using permutations and combinations.	**Rotational dynamics-I:** Rigid body, moment of inertia, parallel and perpendicular axes theorems, moment of inertia of uniform bodies with simple geometrical shapes; Torque; Dynamics of rigid bodies with fixed axis of rotation; Equilibrium of rigid bodies; (**Exclude** Rolling, Angular Momentum & Collisions)	**Classification of Elements and Periodicity in Properties:** Modern periodic law and the present form of periodic table; electronic configuration of elements; periodic trends in atomic radius, ionic radius, ionization enthalpy, electron gain enthalpy, valence, oxidation states, electronegativity, and chemical reactivity. **d-Block Elements:** Oxidation states and their stability; standard electrode potentials; interstitial compounds; alloys; catalytic properties; applications; preparation, structure, and reactions of oxoanions of chromium and manganese. **f-Block Elements:** Lanthanoid and actinoid contractions; oxidation states; general characteristics.
EXAM SCHEDULE	**16.11.25**	**MODEL-A**	**P-I: PTA-15 (ADV MODEL)**	**PT-15 SYLLABUS ONLY**		
			P-II: CTA-12 (ADV MODEL)	**PT-1 TO PT-14 SYLLABUS ONLY**		

PT-16	**Teaching Schedule**	**17.11.25 TO 22.11.25**		**Complex Numbers:** algebra of complex numbers, addition, multiplication, conjugation properties of modulus and principal argument, triangle inequality, cube roots of unity geometric interpretations. polar representation	**Rotational dynamics-II: (Angular Momentum & Collisions & Rolling)** Angular momentum; Conservation of angular momentum; Rolling without slipping of rings, cylinders and spheres; Collision of point masses with rigid bodies	**Chemical Bonding and Molecular Structure:** Orbital overlap and covalent bond; Hybridisation involving s, p and d orbitals only; Molecular orbital energy diagrams for homonuclear diatomic species (up to Ne2); Hydrogen bond; Polarity in molecules, dipole moment; VSEPR model and shapes of molecules (linear, angular, triangular, square planar, pyramidal, square pyramidal, trigonal bipyramidal, tetrahedral and octahedral). **Group-18:** Preparation and properties of the Xenon fluorides
EXAM SCHEDULE	**23.11.25**	**MODEL-A**	**P-I: PTA-16 (ADV MODEL)**	**PT-16 SYLLABUS ONLY**		
			P-II: GTM-3 (MAIN MODEL)	**TOTAL SYLLABUS**		

PT-17	**Teaching Schedule**	**24.11.25 TO 29.11.25**		**Revision of Algebra**	**SHM (Including Forced and Damped Oscillations, Resonance)** Linear and angular simple harmonic motions. Forced and Damped Oscillation(1D) and resonance	**Coordination Compounds:** Werner's theory; Nomenclature, cis-trans and ionization isomerism, hybridization and geometries (linear, tetrahedral, square planar and octahedral) of mononuclear coordination compounds; Bonding [VBT and CFT (octahedral and tetrahedral fields)]; Magnetic properties (spin-only) and colour of 3d-series coordination compounds; Ligands and spectrochemical series; Stability; Importance and applications; Metal carbonyls. **Hydrogen:** Position of hydrogen in periodic table, occurrence, isotopes, preparation, properties and uses of hydrogen; hydrides – ionic, covalent and interstitial; physical and chemical properties of water, heavy water; hydrogen peroxide-preparation, reactions, use and structure; hydrogen as a fuel.
EXAM SCHEDULE	**30.11.25**	**MODEL-A**	**P-I: PTA-17 (ADV MODEL)**	**PT-17 SYLLABUS ONLY**		
			P-II: CTA-13 (ADV MODEL)	**PT-1 TO PT-16 SYLLABUS ONLY**		

PT-18	**Teaching Schedule**	**01.12.25 TO 06.12.25**		**Straight line:** Two dimensions: cartesian coordinates, distance between two points, section formulae, shift of origin. equation of a straight line in various forms, angle between two lines, distance of a point from a line; lines through the point of intersection of two given lines, equation of the bisector of the angle between two lines, concurrency of lines; centroid, orthocentre, incentre and circumcentre of a triangle.locus problems. **CIRCLES-I:** equation of a circle in various forms, equations of tangent, normal and chord. parametric equations of a circle (Except system of circles)	**String and Sound Waves:** Wave motion (plane waves only), longitudinal and transverse waves, superposition of waves; Progressive and stationary waves; Vibration of strings and air columns; Resonance; Beats; Speed of sound in gases; Doppler effect (in sound)	**Metallurgy:** Metal ores and their concentration; extraction of crude metal from concentrated ores: thermodynamic (iron, copper, zinc) and electrochemical (aluminium) principles of metallurgy; cyanide process (silver and gold); refining **Group-13:** Oxidation state and trends in chemical reactivity of anomalous properties of boron with respect to other elements in their respective groups. Reactivity towards acids, alkalis, and halogens; preparation, properties, and uses of borax, orthoboric acid, diborane, boron trifluoride, aluminium chloride, and alums; uses of boron and aluminium.
EXAM SCHEDULE	**07.12.25**	**MODEL-A**	**P-I: PTA-18 (ADV MODEL)**	**PT-18 SYLLABUS ONLY**		
			P-II: GTA-2 (ADV MODEL)	**TOTAL SYLLABUS**		

PT-19	**Teaching Schedule**	**08.12.25 TO 13.12.25**		**CIRCLES-II:** System of Circles **PARABOLA:** In Standard Form, Focus, Directrix, Parametric Equations, **Equations Of Tangent And Normal, Locus Problems.**	**Fluid Statics & Dynamics:** Pressure in a fluid; Pascal's law; Buoyancy; Streamline flow, equation of continuity, Bernoulli's theorem and its applications.	**S-Block:** Alkali and alkaline earth metals-reactivity towards air, water, dihydrogen, halogens, acids; their reducing nature including solutions in liquid ammonia; uses of these elements; general characteristics of their oxides, hydroxides, halides, salts of oxoacids; anomalous behaviour of lithium and beryllium; preparation, properties, and uses of compounds of sodium (sodium carbonate, sodium chloride, sodium hydroxide, sodium hydrogen carbonate) and calcium (calcium oxide, calcium hydroxide, calcium carbonate,calcium sulphate). **Group-17:** Oxidation state and trends in chemical reactivity of anomalous properties of fluorine with respect to other elements in their respective groups. Reactivity towards hydrogen, oxygen, and metals; preparation/ manufacture, properties, and uses of chlorine, hydrogen chloride and interhalogen compounds; oxoacids of halogens, bleaching powder.
EXAM SCHEDULE	**14.12.25**	**MODEL-A**	**P-I: PTA-19 (ADV MODEL)**	**PT-19 SYLLABUS ONLY**		
			P-II:CTA-14 (ADV MODEL)	**PT-1 TO PT-18 SYLLABUS ONLY**		

PT-20	**Teaching Schedule**	**15.12.25 TO 20.12.25**		**Ellipse And Hyperbola:** In Standard Form, Their Foci, Directrices And Eccentricity, Parametric Equations, Equations Of Tangent And Normal, Locus Problems.	**Elasticity:** Modulus of rigidity and bulk modulus in mechanics **Surface tension:** Surface energy and surface tension, angle of contact, drops, bubbles and capillary rise. **Viscosity:** Viscosity (Poiseuille's equation excluded), Stoke's law; Terminal velocity,	**Group 15:** Oxidation state and trends in chemical reactivity of anomalous properties of nitrogen with respect to other elements in their respective groups. Reactivity towards hydrogen, oxygen, and halogen; allotropes of phosphorous; preparation, properties, and uses of dinitrogen, ammonia, nitric acid, phosphine, phosphorus trichloride, phosphorus pentachloride; oxides of nitrogen and oxoacids of phosphorus. **Group 16:** Oxidation state and trends in chemical reactivity of anomalous properties of oxygen with respect to other elements in their respective groups. Reactivity towards hydrogen, oxygen, and halogen; simple oxides; allotropes of sulfur; preparation/manufacture, properties, and uses of dioxygen, ozone, sulfur dioxide, sulfuric acid; oxoacids of sulfur.
	21.12.25 Sunday	**MODEL-A**	**P-I: PTA-20 (ADV MODEL)**	**PT-20 SYLLABUS ONLY**		
			P-II: GTM-4 (MAIN MODEL)	**TOTAL SYLLABUS**		

PT-21	**Teaching Schedule**	**22.12.25 TO 27.12.25**		**Trigonometry:** Trigonometry Upto Transformations, Periodicity, Etreme values, & Trigonometric Equations	**Semiconductors:** semiconductor diode:- V characteristics in forward and reverse bias; diode as a rectifier; I-V characteristics of LED. the photodiode, solar cell and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor: transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR. AND. NOT. NAND and NOR). Transistor as a switch. (INCLUDING: All JEE MAINS Experiments of Semiconductors) **Magnetism & matter:** Current loop as a magnetic dipole and its magnetic dipole moment. Bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements. Para-, dia- and ferromagnetic substances. Magnetic susceptibility and permeability. Hysteresis. Electromagnets and permanent magnets.	**QUALITATIVE ANALYSIS:** Principles of qualitative analysis: Groups I to V (only Ag+, Hg2+, Cu2+, Pb2+, Bi3+, Fe3+,Cr3+, Al3+, Ca2+, Ba2+, Zn2+, Mn2+ and Mg2+); Nitrate, halides (excluding fluoride),sulphate and sulphide. **Group-14:** Oxidation state and trends in chemical reactivity of anomalous properties of carbon with respect to other elements in their respective groups. Reactivity towards water and halogen; allotropes of carbon and uses of carbon; preparation, properties, and uses of carbon monoxide, carbon dioxide, silicon dioxide, silicones, silicates, zeolites.
	28.12.25	**MODEL-A**	**P-I: PTA-21 (ADV MODEL)**	**PT-21 SYLLABUS ONLY**		
			P-II: GTA-3 (ADV MODEL)	**TOTAL SYLLABUS**		