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AAKASH TEST PLANNER :
DAILY PRACTICE TEST SCHEDULE & SYLLABUS FOR CLASS-XI

DPT NAME	SYLLABUS
Chemistry Daily Test 1 for_Class_11th_Engg	Nature of Matter, Properties of matter and their measurement SI unit, Mass weight, Volume temperature, Need for standard reference, Scientific notation, Precision and accuracy : (i) Significant figure and calculation involving significant figure.
Chemistry Daily Test 10 for_Class_11th_Engg	(i) Hydrogen spectrum, (ii) Bohr theory with mathematical derivations, (iii) Basic question on Bohr theory.
Chemistry Daily Test 11 for_Class_11th_Engg	(i) Dual Behaviour of matter, (ii) De broglie equation, (iii) Heisenberg uncertainty principle
Chemistry Daily Test 12 for_Class_11th_Engg	(iv) Quantum mechanical model, (i) Introduction of quantum numbers, (iii) Shape of orbital,
Chemistry Daily Test 13 for_Class_11th_Engg	(ii) Introduction to Radial function (y), (i) Aufbau principle, Pauli's exclusion principle, Hund's rule, (ii) Electronic configuration, Electronic configuration of Half-filled and full-filled orbitals
Chemistry Daily Test 14 for_Class_11th_Engg	Periodic Properties: (i) Introduction to historical development for periodicity, (ii) Modern periodic law and prediction of periodic table, (iii) IUPAC naming of element (Z > 100), Location of element by using atomic number and vice versa,(i) Atomic radius (various types and variation), (ii) Ionic radius and prediction of trend by using isoelectronic species
Chemistry Daily Test 15 for_Class_11th_Engg	(ii) Ionic radius and prediction of trend by using isoelectronic species, (i) Ionisation energy and its general trends, (ii) Ionisation trend by using half-filled / full-filled orbital and screening effect (iii) Electron gain enthalpy, (iv) Electronegativity, (v) Metallic character and valency, (vi) Anomalous behaviour of 2nd period elements, (vii) Periodic trends and chemical reactivity.
Chemistry Daily Test 16 for_Class_11th_Engg	(i) What is chemical bond ? (ii) Types of chemical bond (Just introduction), (iii) Lewis dot structure (overview), (iv) Formal charge. (v) Ionic bonding (energetics), (vi) Properties of ionic solid, (i) Bond Parameters (bond length, bond anngle, bond energy), Resonance
Chemistry Daily Test 17 for_Class_11th_Engg	(ii) Introduce to concept of dipole moment. (iii) Fajan's rule, (iv) Percentage ionic character, (v) VSEPR theory (i) Covalent bonding (valence bond theory), (ii) Type of orbital overlap (s and p bond), (iii) Orbital overlap to explain simple molecules,
Chemistry Daily Test 18 for_Class_11th_Engg	(iv) Hybridisation concept in introduction(i) Overlap of hybridised orbital and orbital overlap diagram, (ii) Prediction of hybridisation state and shape of molecule.
Chemistry Daily Test 19 for_Class_11th_Engg	(i) Linear combination of atomic orbitals (ii) Molecular orbital theory (concept of bonding and anti-bonding orbital) and shape of molecular orbitals. (i) Filling of M.O. and energy diagram, (ii) Determine bond order and discuss magnetic property / bond length and bond stability (iii) H-bonding, (iv) Metallic bonding.

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DPT NAME	SYLLABUS
Chemistry Daily Test 2 for_Class_11th_Engg	Law of chemical combination : (i) Law of conservation of mass, (ii) Law of constant combination, (iii) Law of multiple proportion, (v) Gay Lussac's law, (vi) Avagdro law, (vii) Dalton's atomic theory Atomic mass : (i) Relative atomic mass, (ii) Average atomic mass, (iii) Molecular mass calculation using atomic mass.
Chemistry Daily Test 20 for_Class_11th_Engg	(I) Intermolecular force and thermal energy, (II) Gaseous state-(i) Introduce volume, pressure and temperature their various units and relation among them, (ii) Gas laws — (a) Boyle's law, (b) Charle's law, (c) Gay Lusac's law ; (d) Avogardo's law
Chemistry Daily Test 21 for_Class_11th_Engg	(III) Ideal gas introduction and ideal gas equation, Basic problem on them, (I) Ideal gas equation (numericals), (II) Dalton's law of partial pressure
Chemistry Daily Test 22 for_Class_11th_Engg	(III) Kinetic theory of gases, (IV) Kinetic energy and molecular speeds, (V) Maxwell boltzmann distribution of molecular speeds, (I) Graham's law of diffusion and effusion
Chemistry Daily Test 23 for_Class_11th_Engg	(II) Real gas and van der Waal equation (ideal gas equation correction), (III) Introduction of compressibility factor, (IV) Compressibility factor expression from van der Waal equation and its qualitative explanation.
Chemistry Daily Test 24 for_Class_11th_Engg	Liquefaction of gases, (v) Eudiometry. (vi) Liquid state : Vapour pressure, Surface tension, Viscosity
Chemistry Daily Test 25 for_Class_11th_Engg	Introduction to Basic Terms : (i) Types of system, (ii) State of a System, (iii) State function, (iv) State variable, (v) path function, (vi) Extensive intensive property, (vii) Thermodynamic process
Chemistry Daily Test 26 for_Class_11th_Engg	(viii) Internal Energy as a state function (ix) Pressure volume work (x) First law of thermodynamics with Enthalpy.
Chemistry Daily Test 27 for_Class_11th_Engg	(i) Heat capacity, (iii) Relation between Cp and Cv for an ideal gas, (iii) Isothermal reversible process, (iv) Reversible adiabatic process.
Chemistry Daily Test 28 for_Class_11th_Engg	(i) Measurement of DU and DH, (ii) Enthalpy change of a reaction, (iii) Standard enthalpy of formation (DH°f), (iv) Enthalpy change for different type of reaction.
Chemistry Daily Test 29 for_Class_11th_Engg	(i) Hess's law, (ii) Bond dissociation enthalpy, (iii) Kirchoff's equation.
Chemistry Daily Test 3 for_Class_11th_Engg	Formula representation of molecule : (i) Empirical formula, (ii) Molecular formula, (iii) Formula unit, Mole concept : (i) Introduction of mole concept with basic problems
Chemistry Daily Test 30 for_Class_11th_Engg	(i) Second law of thermodynamics, (ii) Spontaniety and Enthalpy change, (iii) Introduction to Entropy, (iv) Entropy change in various process.
Chemistry Daily Test 31 for_Class_11th_Engg	(i) Numericals based on entropy, (ii) Trouton's rule, (iii) Gibbs free energy change and spontaneity, (iv) Calculation of Gibbs energy for a reaction. (i) Thermodynamics of equilibrium state, (ii) Third law of thermodynamics.

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DPT NAME	SYLLABUS
Chemistry Daily Test 32 for_Class_11th_Engg	Introduction to equilibrium : (i) Physical equilibrium, (ii) Chemical equilibrium, (iii) Law of mass action and equilibrium constant, (iv) Introduce Kc and Kp, (v) Relation between Kc and Kp, (vi) Homogeneous and hetrogeneous equilibria. Applications of equilibrium constant : (i) Predicting the extent of reaction, (ii) Predicting direction of reaction, (iii) Predicting equilibrium concentration, (iv) Solving problems based on them.
Chemistry Daily Test 33 for_Class_11th_Engg	(i) Relationship between equilibrium constant (K), reaction quotient (Q) and Gibb's free energy (G), (ii) Factors affecting equilibria (Lechatlier principle), (iii) Relative vapour density and degree of dissociation.
Chemistry Daily Test 34 for_Class_11th_Engg	Ionic equilibrium in solution : (i) Acids, bases and salts, (ii) Acids and bases- Arrhemius concept, Bronsted and Lowry concept and Lewis concept, (iii) Ionisation of water and Kw, pH scale, Effect of temperature on pH scale, (iv) pH of acids and bases (v) Ionisation constants of weak acids and weak bases (pH calculation).
Chemistry Daily Test 35 for_Class_11th_Engg	(i) Factors affecting acidic strength, (ii) Common ion effect in the ionisation of weak acids and weak bases, (iii) pH determinations of a (iv) Mixture of two weak acid, (v) Mixture of strong acid and weak acid, (i) Polyprotic weak acid,
Chemistry Daily Test 36 for_Class_11th_Engg	(ii) introduce the concept of salt hydrolysis, (iii) Salt of strong acid strong base, (i) Salt of weak acid strong base, (ii) Salt of weak base and strong acid, (iii) Salt of weak acid and weak base, (iv) Hydrolysis constant and pH determination. Buffer solution : (i) Types of buffer solution - Acidic buffer, Basic buffers and Salt buffers.
Chemistry Daily Test 37 for_Class_11th_Engg	(i) Buffer action, (ii) pH of a buffer solution, (iii) Buffer capacity. (iv) Acid-base titration-theory of indicators, pH curves.
Chemistry Daily Test 38 for_Class_11th_Engg	(v) Solubility and solubility product, (vi) Relation between solubility and solubility product. (i) Common ion effect on solubility of ionic salts, (ii) Different cases of calculating solubilities, (iii) Ionic product and solubility product (Precipitation).
Chemistry Daily Test 39 for_Class_11th_Engg	(i) Classical idea of oxidation and reduction reactions, (ii) Oxidising agent and reducing agent, (iii) Electronic concept of redox reactions, (iv) Oxidation numbers, (v) Rules for assigning oxidation number, (vi) Oxidation and reduction in terms of oxidation numbers. Types of redox reactions : (i) Combinations reaction, (ii) Decomposition reactions, (iii) Displacement reactions, (iv) Disproportionation reactions, (v) Fractional oxidation states, (vi) Balancing of redox reactions by oxidation number method and ion electron method
Chemistry Daily Test 4 for_Class_11th_Engg	Calculation based on mole concept : (i) Mass / Mass relation, Molar mass and concept of gram atom, gram molecule, (ii) Volume / Volume relation

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DPT NAME	SYLLABUS
Chemistry Daily Test 40 for_Class_11th_Engg	(i) Equivalent weight, (ii) Normality, Volumetric calculation of simple titrations Back titration, Double titration. Redox reactions as the basis of titrations involving : (i) Acidified KMnO4, (ii) Acidified K2Cr2O7 (iii) Iodo/Iodimetric titration, (iv) Volume strength of H2O2 Redox reactions and Electrode processes : (i) Function of salt bridge, (ii) standard electrode potential, (iii) Applications of electrochemical series.
Chemistry Daily Test 41 for_Class_11th_Engg	(i) Unique position of hydrogen as explained by resemblance with alkali metals and halogens, (ii) Isotopes of hydrogen, (iii) Preparation, properties, both physical and chemical and uses of hydrogen, (iv) Hydride - Ionic, Covalent and metallic, (v) Water- Structure, Physical and Chemical Properties,
Chemistry Daily Test 42 for_Class_11th_Engg	(i) Hard and soft water - Types of hardness, softening of water and degree of hardness, (ii) Hydrogen peroxide- Peparations, Structure, Physical and Chemical Properties, (iii) Volume Strength of H2O2, (iv) Heavy Water (D2O), (v) Dihydrogen as a fuel
Chemistry Daily Test 43 for_Class_11th_Engg	(i) s-block elements- Alkali and alkaline earth metals: diagnoal relationship, (ii) Group-1 elements: General discussion on physical and chemical properties, (iii) General characteristics of compounds of alkali metals (i) Anomalous properties of Lithium, (ii) Compounds of sodium and potassium,
Chemistry Daily Test 44 for_Class_11th_Engg	(iii) Alkaline earth metals- General discussion on physical and chemical properties (i) General characteristics of compounds of alkaline earth metals, (ii) Anomallous behaviour of beryllium, (iii) Compounds of calcium and magnesium
Chemistry Daily Test 45 for_Class_11th_Engg	(i) Boron family- Physical and chemical properties, (ii) Anomalous properties of boron, (iii) extraction of boron and its properties, (i) Compounds of boron,
Chemistry Daily Test 46 for_Class_11th_Engg	(ii) Compounds of aluminium, (i) Carbon family- Physical and Chemical properties, (ii) Allotropes of carbon, (iii) Compounds of Carbon and silicon
Chemistry Daily Test 47 for_Class_11th_Engg	General Introduction; Structural representation and classification of organic compounds; Nomendature: Rules of IUPAC nomenclature of alkanes and unsaturated hydrocarbons.IUPAC nomenclature of (i) Monofunctional and (ii) polyfunctional organic compounds,
Chemistry Daily Test 48 for_Class_11th_Engg	(iii) Monosubstituted benzene compounds and (iv) di, tri or higher substituted benzene compounds. Isomerism: Structural isomerism (i) Chain isomerism, (ii) Position isomerism, (iii) Functional and (iv) Metamerism, Tautomerism: Various types of tautomerism; General machanism of tautomerism; Unsaturation number
Chemistry Daily Test 49 for_Class_11th_Engg	Stereoisomerism: (i) Geometrical isomerism (ii) Conformational isomerism Conformations of ethane, butane and cyclohexane; Relative stability of conformers. Concepts of organic reaction machanism: (i) Fission of a covalent bond,

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DPT NAME	SYLLABUS
Chemistry Daily Test 5 for_Class_11th_Engg	Concept of limiting reagent : Use of stoichiometry in balanced equation and limiting reagent concept.
Chemistry Daily Test 50 for_Class_11th_Engg	(ii) Types of reagents : Electrophiles, nucleophiles. Electron displacement in covalent bonds: (i) Inductive effect (+I and –I), (ii) Electromeric effect (+E and –E) Resonance (+R and –R): Resonance energy; Application of inductive and resonance effects. Aromaticity; Hyperconjugation;
Chemistry Daily Test 51 for_Class_11th_Engg	Relative stability of (i) Carboncation, (ii) Free radical and (iii) Alkene Reaction intermediates: (i) Carbocations, (ii) Carbanions, (iii) Free radicals; Types of reactions. (i) Addition reaction, (ii) Elimination reaction, (iii) Substitution reaction and (iv) Rearrangement
Chemistry Daily Test 52 for_Class_11th_Engg	Methods of purification of organic compounds (i) Sublimation, (ii) Crystallisation, (iii) Distillation, (iv) Fractional distillation, (v) Distillation under reduced pressure, (vi) Steam distillation and (vii) Chromatography
Chemistry Daily Test 53 for_Class_11th_Engg	Qualitative analysis of organic compounds (i) Detection of carbon and hydrogen (ii) Lassaignes test for detection of nitrogen, Sulphur, halogens and phosphorus Quantitative analysis: (i) Estimation of carbon and hydrogen (Liebig's method), (ii) Estimation of nitrogen by dumas method and Kjeldahls method (iii) Estimation of halogens, Sulphur and phosphorus by carius method, (iv) molecular weight determination
Chemistry Daily Test 54 for_Class_11th_Engg	Introduction; Classification of hydrocarbons; Alkanes: (i) Nomenclature and Isomerism; (ii) Preparation of alkanes from unraturated hydrocarbons, alkyl halides, Carbonyl compounds and carboxylic acids. Properties of alkanes: Physical properties; Chemical properties; (i) Substitution reactions-halogenation, (ii) Combustion, (iii) Controlled oxidation, (iv) Isomerisation, (v) Aromatization and (vi) Pyrolysis
Chemistry Daily Test 55 for_Class_11th_Engg	Alkenes : Structure of double bond; Isomerism : Structural and geometrial; Preparation of alkenes from alkynes, alkylhalides, vicinal dihalides and alcohols (Saytzeff and Hoffmann rule) Physical properties and chemical properties of alkenes (i) Addition of hydrogen, halogen, hydrogen halides, (ii) Markovnikov addition, (iii) Peroxide effect and (iv) Addition of sulphuric acid and water
Chemistry Daily Test 56 for_Class_11th_Engg	Oxidation of alkenes by (i) Baeyer's reagent and (ii) acidified KMnO4; Ozonolysis; Polymerisation. Dienes and their addition reactions with halogen and hydrogen halide Alkynes : (i) Nomenclature, Isomerism, (ii) Structure of triple bond, (iii) Preparation of alkynes and (iv) physical properties and (v) Acidic, character alkynes. Addition reactions of alkynes : Addition of hydrogen, halogen, hydrogen halide, water; Polymerisation; Oxidation; Ozonolysis

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DPT NAME	SYLLABUS
Chemistry Daily Test 57 for_Class_11th_Engg	"Aromatic hydrocarbons: Structure of benzene; Resonance in benzene; Molecular orbital theory. Preparation of benzene. Electrophilic Aromatic substitution, General mechanism Nitration, Halogenation and sulphonation of benzene; Friedel craft's alkylation and acylation of benzene; Addition of H2 and Cl2 to benzene Ortho, Meta and para directing groups; Activating groups; Deactivating groups, Orientation in monosubstituted benzene."
Chemistry Daily Test 58 for_Class_11th_Engg	Atmospheric pollution, Gaseous Air pollutants; Greenhouse effect; Particulate pollutants; Smag; Ozone hole; Water pollution, Soil pollution, Industrial waste, Strategies to control environmental pollution.
Chemistry Daily Test 6 for_Class_11th_Engg	Concentration term : (i) Molarity, (ii) Molality, (iii) Mole fraction.
Chemistry Daily Test 7 for_Class_11th_Engg	Stoichiometry : (i) Problem on gravimetric and volumetric analysis, (ii) Principle of atom conservation; (iii) n-factor
Chemistry Daily Test 8 for_Class_11th_Engg	Equivalent mass : (i) Equivalent mass and gram equivalent, (ii) Normality, (iii) Relation between molarity and normality. Stoichiometry - Application of gram equivalent concept and percentage of free SO3 in oleum
Chemistry Daily Test 9 for_Class_11th_Engg	Atomic Structure: (i) Basic discovery and subatomic particles (Cathode rays, anode rays, Chadwick experiment), (ii) Rutherford experiment, (iii) Introduction to electromagnetic wave and introduce C = vl formula. (iv) Principle of quantization (Plank theory), (v) Black body radiation, (vi) Photoelectric effect
Mathematics Daily Test 1 for_Class_11th_Engg	Introduction, Sets, Representation of sets, Kinds of Sets, Analysis of two sets : Equal sets, Equivalent sets, Subsets, Intervals as subset of R.
Mathematics Daily Test 10 for_Class_11th_Engg	Exponential function, logarithmic function and their properties. Algebra of real function, replacement properties of function, Transformations of Graphs
Mathematics Daily Test 11 for_Class_11th_Engg	Angles, Important terms, system of measurement of angles, trigonometric function, Values of trigonometric function for some specific angles, Trigonometric ratios of allied angles, Domain and ranges of trigonometric function, Graph of trigonometric functions.
Mathematics Daily Test 12 for_Class_11th_Engg	Transformation formulae: trigonometric ratio of the sum and difference of two angles. Transforming product into sum or difference, Transforming the sum or difference into product. Trigonometric ratio of multiple angles, sub-multiple angles.
Mathematics Daily Test 13 for_Class_11th_Engg	Trigonometric equation: Types of trigonometric equation, Principal value, General solution of basic trigonometric equation.

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DPT NAME	SYLLABUS
Mathematics Daily Test 14 for_Class_11th_Engg	Statement of preposition, problem based on proving theorem or identities by the principle of mathematical induction problem based on showing that a given expression is divisible by an integer or by another expression, problem based on proving inequality by the principle of mathematical induction and target discussion
Mathematics Daily Test 15 for_Class_11th_Engg	Quadratic equation: Fundamental theorem of algebra nature of roots of quadratic equations ax2 + bx+ c= 0, Properties related to nature of roots of quadratic equations.
Mathematics Daily Test 16 for_Class_11th_Engg	Condition for common roots of quadratic equations.Quadratic expression y = ax2 + bx + c, Location of roots.
Mathematics Daily Test 17 for_Class_11th_Engg	Roots of an equation, analysis of cubic equation, formation of new equations with the help of given equation.Descartes rule, transformation of quadratic equation ax2 + bx + c = 0, Assignment discussion
Mathematics Daily Test 18 for_Class_11th_Engg	Introduction, square root of negative number, complex number, representation of complex number in an argand plane. Equality of complex number, Algebra of complex number, Identities,
Mathematics Daily Test 19 for_Class_11th_Engg	Conjugate of a complex number, Representation of conjugate of a complex number in an Argand plane, properties of conjugate, Modulus of a complex number, representation of modulus of a complex number on the Argand plane, properties of modulus, Properties of arguments of Complex Numbers, Polar representation of a complex numbers
Mathematics Daily Test 2 for_Class_11th_Engg	Power sets, Universe set, Venn diagram, Operation on sets : Union of sets, intersection of sets, disjoint sets, difference two sets, complement of a set, Algebra on sets.
Mathematics Daily Test 20 for_Class_11th_Engg	Introduction, inequalities, some rules to solve inequalities, inequalities related to modulus of a real numbers, Graphical solution of linear inequalities in two variables Type-1: Problem based on solution of system of linear inequalities Type-2: Problem based on finding system of linear inequalities when their solution set is given as a shaded region, Assignment discussion
Mathematics Daily Test 21 for_Class_11th_Engg	Introduction, A.P. nth term of AP, properties of A.P. Sum of n term of an AP
Mathematics Daily Test 22 for_Class_11th_Engg	Arithmetic mean, Geometric progression, nth term, sum of n term of GP Geometric mean,
Mathematics Daily Test 23 for_Class_11th_Engg	Introduction to H.P., Relation between AM, GM and HM, Arithmetic, Geometric series
Mathematics Daily Test 24 for_Class_11th_Engg	Sum of n terms of special series, method of difference, Exponential series logarithmic series.
Mathematics Daily Test 25 for_Class_11th_Engg	Introduction, Pascal triangle, Binomial theorem for a positive integer index, Some special forms of binomial theorem, problem based on direct expansion, General term in the expansion of (a + x)n, middle term in the expansion of (a + x)n

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DPT NAME	SYLLABUS
Mathematics Daily Test 26 for_Class_11th_Engg	Greatest binomial coefficient, numerically greatest term in the binomial expansion, use of differentiation and integration,
Mathematics Daily Test 27 for_Class_11th_Engg	Bino-binomial series.Multinomial expansion, binomial theorem for any index.
Mathematics Daily Test 28 for_Class_11th_Engg	Fundamental principle of counting, multiplication principle, addition principle, factorial notation,
Mathematics Daily Test 29 for_Class_11th_Engg	Permutation: Permutation of things not all distinct.Different types of problem based on Permutation, circular permutation
Mathematics Daily Test 3 for_Class_11th_Engg	Wavy Curve Method & Inequalities.
Mathematics Daily Test 30 for_Class_11th_Engg	Combination: Difference between a permutation and combination, Rank of a word in dictionary.Combination of different type of objects Special use of nCr
Mathematics Daily Test 31 for_Class_11th_Engg	Divisors, sum of the numbers formed by n distinct digits.Division into groups, Equal division of objects, Arrangement into group.
Mathematics Daily Test 32 for_Class_11th_Engg	Number of integral solution of on equation, application of multinomial expansion.Exponent of a prime number in a factorial, derangement.
Mathematics Daily Test 33 for_Class_11th_Engg	Introduction, distance formula, section formula area of triangle slope of line, Angle between two lines, condition for two lines to be parallel and perpendicular, Collinearly of three points
Mathematics Daily Test 34 for_Class_11th_Engg	Various forms of line: (i) Horizontal and vertical line, point slope form, Two point form, Slope intercept form, Intercept form Normal form, Parametric form, General equation and comparison with different form
Mathematics Daily Test 35 for_Class_11th_Engg	Distance of line from a point, distance between two parallel lines, Image of point with line, foot of perpendicular, Equation of the bisectors, Analysis of three lines, Transformation of axes
Mathematics Daily Test 36 for_Class_11th_Engg	Transformation of axes , Rotation of axes, Pair of straight line angle between lines, Point of intersection, parallel lines, joint equation of pair of straight lines joining origin and the points of intersection of a curve and a line
Mathematics Daily Test 37 for_Class_11th_Engg	Definition, different form of circle, general equation, centre radius, Diameter form parametric form, Circle and point length of intercept on the co-ordinate axes, line and circle, condition for tangency to the circle
Mathematics Daily Test 38 for_Class_11th_Engg	Equation of tangent normal to a circle, equation at chord having mid-point, equation of tangent drawn from external point, Director circle, equation of pair of tangent
Mathematics Daily Test 39 for_Class_11th_Engg	Analysis of two circles, Radical axis, Locus Problems
Mathematics Daily Test 4 for_Class_11th_Engg	Wavy Curve Method & Inequalities.

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DPT NAME	SYLLABUS
Mathematics Daily Test 40 for_Class_11th_Engg	Standard equation of parabola, parametric equation line as tangent, condition for tangency, Equation of tangent in different form, point of intersection of tangent
Mathematics Daily Test 41 for_Class_11th_Engg	Normal, co-normal points, properties of co-normal points, important points related to parabola, Equation of chord having mid-point (x1, y1) equation of pair of tangent
Mathematics Daily Test 42 for_Class_11th_Engg	Standard equation of ellipse, position of a point, line and ellipse, equation of tangent , Normal equation of chord having mid-point (x1, y1), pair of tangent
Mathematics Daily Test 43 for_Class_11th_Engg	Standard equation of hyperbola, Line and hyperbola equation of tangent, Equation of normal.
Mathematics Daily Test 44 for_Class_11th_Engg	Asymptotes, Rectangular hyperbola, Parametric form, Tangent, Normal.
Mathematics Daily Test 45 for_Class_11th_Engg	Square root of a complex number. Eular form, de moivre's theorem cube roots of unity.nth roots of unity
Mathematics Daily Test 46 for_Class_11th_Engg	Argument or amplitude Rotation of complex number.Geometry of complex numbers, section formulae, condition, for quadrilateral
Mathematics Daily Test 47 for_Class_11th_Engg	Straight line in Argand plane, circle, Important loci in Argand plane.
Mathematics Daily Test 48 for_Class_11th_Engg	Introduction to 3-D geometry, octant, distance formula, section formula
Mathematics Daily Test 49 for_Class_11th_Engg	Definition, idea of limits, indeterminate form limits of polynomial and rational function, 0/0 form, Limits of trigonometric function, 0 × ¥ form, ¥ – ¥ form,
Mathematics Daily Test 5 for_Class_11th_Engg	Practical problems on union and intersection of two sets. Assignment discussions.
Mathematics Daily Test 50 for_Class_11th_Engg	Derivative by first principle, algebra of derivative of function. Derivative of polynomial and trigonometric function.
Mathematics Daily Test 51 for_Class_11th_Engg	L’s Hospital rule, Assignment Discussion.
Mathematics Daily Test 52 for_Class_11th_Engg	Introduction, mathematical statement, New statement from old, negation of statement, compound statement, Special words/phrases AND or ‘OR’ implication, contra positive and converse
Mathematics Daily Test 53 for_Class_11th_Engg	Measure of dispersion, Mean deviation for ungrouped and grouped data, mean deviation about median, mean deviation about mean, Variance and standard deviation standard deviation of discrete frequency distribution, Analysis of frequency distribution
Mathematics Daily Test 54 for_Class_11th_Engg	Basic definition, Random experiment, Types of event exhaustive event, Mutually exclusive event
Mathematics Daily Test 55 for_Class_11th_Engg	Axiomatic approach of probability addition rule of probability, Miscellaneous problem based on P & C
Mathematics Daily Test 56 for_Class_11th_Engg	Important key related half angles, Analysis of the form y = asinx + b cosx.Conditional identities, Sum of trigonometrical series.

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DPT NAME	SYLLABUS
Mathematics Daily Test 57 for_Class_11th_Engg	Equation containing more than one variable: trigonometric equation containing more than one function in one variables, Trigonometric equation containing different functions and different variables, Trigonometric equation in which trigonometric function containing large exponent. Trigonometric inequalities, precautions in solving the equation.
Mathematics Daily Test 58 for_Class_11th_Engg	Properties of triangle, sine rule and cosine rule, Napier's analogy, projection formulae, Area of triangle in different form.Half angle formula,
Mathematics Daily Test 59 for_Class_11th_Engg	Circum centre incentre, Ortho centre, Centroid.Escribed circle, Regular polygon
Mathematics Daily Test 6 for_Class_11th_Engg	Introduction, Cartesian products of sets & Relations, Definition of function.
Mathematics Daily Test 7 for_Class_11th_Engg	Definition of domain, Range, Methods to find out domain
Mathematics Daily Test 8 for_Class_11th_Engg	Some basic functions and their graphs, Algebra of functions, Identity function constant function, polynomial function,
Mathematics Daily Test 9 for_Class_11th_Engg	Rational function, Irrational functions. Modulus function and their properties Signum function, Greatest integer, Fractional function
Physics Daily Test 1 for_Class_11th_Engg	What is physics, Scope & Excitement of physics, Physics technology and society, Fundamental forces in nature, Nature of physical laws
Physics Daily Test 10 for_Class_11th_Engg	Integration, Its physical significance, Important formulae,Application of Integration,
Physics Daily Test 11 for_Class_11th_Engg	Average and Instantaneous acceleration, Kinematics of non uniformly accelerated motion
Physics Daily Test 12 for_Class_11th_Engg	Uniformly accelerated motion
Physics Daily Test 13 for_Class_11th_Engg	Physics: Motion Under Gravity
Physics Daily Test 14 for_Class_11th_Engg	Graphs between position, velocity, acceleration and time for uniform and nonuniform accelerated motion,Relative velocity in one Dimension only
Physics Daily Test 15 for_Class_11th_Engg	Motion in a Plane: Scalars & Vectors, Multiplication of vectors by real numbers, Addition & subtraction of vectors–graphical method (triangle law & paralleogram Law),Resolution of vectors, Vector addition and subtraction using resolution
Physics Daily Test 16 for_Class_11th_Engg	Motion in a plane with constant acceleration. Projectile motion, Ground to ground Projection, Maximum height, Range, Time of flight,
Physics Daily Test 17 for_Class_11th_Engg	Equation of trajectory for Ground to Ground projection, Horizontal /Oblique projection from a height
Physics Daily Test 18 for_Class_11th_Engg	Projectile motion along inclined plane
Physics Daily Test 19 for_Class_11th_Engg	Relative motion,
Physics Daily Test 2 for_Class_11th_Engg	Concept of measurement of physical quantity, International system of units, measurement of physical parameters like length, mass and time.
Physics Daily Test 20 for_Class_11th_Engg	Kinematics of uniform and nonuniform circular Motion

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AAKASH TEST PLANNER :
DAILY PRACTICE TEST SCHEDULE & SYLLABUS FOR CLASS-XI

DPT NAME	SYLLABUS
Physics Daily Test 21 for_Class_11th_Engg	Laws of motion: The law of inertia, Newton's first law of motion, Momentum, Newton's second law of motion,Impulse, Newton's third law of motion, Conservation of linear momentum
Physics Daily Test 22 for_Class_11th_Engg	Common forces in mechanics (Weight, tension, normal reaction, Spring force),Motion of connected bodies,
Physics Daily Test 23 for_Class_11th_Engg	Motion of a body on an inclined plane, Pulley block system
Physics Daily Test 24 for_Class_11th_Engg	Problems on pulley block system (including movable pulley)
Physics Daily Test 25 for_Class_11th_Engg	Problems involving Movable Wedge
Physics Daily Test 26 for_Class_11th_Engg	Friction, Static & kinetic friction, Motion on a fixed rough surface
Physics Daily Test 27 for_Class_11th_Engg	Miscellanous problems on friction (one block over the other)
Physics Daily Test 28 for_Class_11th_Engg	Inertial & non inertial frames, Pseudo force, Solving problems in non-inertial frames
Physics Daily Test 29 for_Class_11th_Engg	Circular motion and banking of roads
Physics Daily Test 3 for_Class_11th_Engg	Dimensions of various physical quantities. Principle of Homogeneity
Physics Daily Test 30 for_Class_11th_Engg	Scalar product of vectors, Work (Positive, negative and Zero Work), Kinetic energy, Work energy theorem
Physics Daily Test 31 for_Class_11th_Engg	Work done by a cosntant and variable force, Power
Physics Daily Test 32 for_Class_11th_Engg	Problems based on work-energy theorem, Calculating work using Graphs like F-S, F-t
Physics Daily Test 33 for_Class_11th_Engg	Conservative and non conservative forces. Concept of potential energy, Gravitational and spring potential energy
Physics Daily Test 34 for_Class_11th_Engg	Conservation of mechanical energy, Vertical circular motion
Physics Daily Test 35 for_Class_11th_Engg	Head on elastic and inelastic collision
Physics Daily Test 36 for_Class_11th_Engg	Oblique elastic & Oblique inelastic collisions
Physics Daily Test 37 for_Class_11th_Engg	Centre of mass of discrete particle system, Center of mass for continuous mass distribution
Physics Daily Test 38 for_Class_11th_Engg	Motion of centre of mass, Linear momentum of system of particles,
Physics Daily Test 39 for_Class_11th_Engg	Miscellaneous Problems on Conservation of linear momentum and mechanical energy.
Physics Daily Test 4 for_Class_11th_Engg	Dimensional Analysis and its Application
Physics Daily Test 40 for_Class_11th_Engg	Rigid body, Rigid body constraint for velocity and acceleration, Vector product of two vectors, Torque
Physics Daily Test 41 for_Class_11th_Engg	Equilibrium of a rigid body, Shifting of normal reaction and toppling,
Physics Daily Test 42 for_Class_11th_Engg	Moment of inertia for discrete particle system, Uniform symmeteric bodies,Theorems of perpendicular and parallel axis.
Physics Daily Test 43 for_Class_11th_Engg	Dynamics of rotational motion about a fixed axis.
Physics Daily Test 44 for_Class_11th_Engg	General motion of a rigid body, Kinematics of Rolling motion, Dynamics of Rolling Motion

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AAKASH TEST PLANNER :
DAILY PRACTICE TEST SCHEDULE & SYLLABUS FOR CLASS-XI

DPT NAME	SYLLABUS
Physics Daily Test 45 for_Class_11th_Engg	Rotational kinetic energy and work energy theorm for rigid body.
Physics Daily Test 46 for_Class_11th_Engg	Angular momentum of a particle and system of particles. Angular momentum of rigid body
Physics Daily Test 47 for_Class_11th_Engg	Conservation of angular momentum, Angular Impulse, Instantaneous axis of rotation
Physics Daily Test 48 for_Class_11th_Engg	Universal law of Gravitation, The gravitational constant, Acceleration due to gravity upon the Earth's surface, Variation of g due to height, depth, shape and rotation of the earth.
Physics Daily Test 49 for_Class_11th_Engg	Gravitational field, Gravitational field due to bodies of different shapes: Point mass, thin spherical shell, solid sphere, uniform ring
Physics Daily Test 5 for_Class_11th_Engg	Accuracy & Precision of instruments, Errors (with its types), Propagation of errors in different operations like sum, difference, product and division
Physics Daily Test 50 for_Class_11th_Engg	Gravitational potential energy, Gravitatonal Potential energy of an object in the field of earth, Escape velocity
Physics Daily Test 51 for_Class_11th_Engg	Gravitatonal Potential, Relationship between field and potential, Gravitational potential due to different bodies: point mass, spherical shell, Solid sphere, ring
Physics Daily Test 52 for_Class_11th_Engg	Earth's satellite, Energy of satellite, Geostationary & polar satellite, Weightlessness, Kepler's laws of planetary motion.
Physics Daily Test 53 for_Class_11th_Engg	Elastic behaviour of solids, Stress and Strain, Hook's Law, Stress strain curve, Elastic moduli, Elastic potential energy, Poisson's ratio, Application of elastic behaviour of materials.
Physics Daily Test 54 for_Class_11th_Engg	Pressure, density, Pascal’s law, Variation of pressure with depth, Hydrostatic paradox, Hydraulic lift, Hydraulic brakes, Force and torque due to hydrostatic pressure.
Physics Daily Test 55 for_Class_11th_Engg	Archimede's principle, Liquids in accelerated containers, Container having vertical acceleration, Container having horizontal acceleration, Horizontally accelerated U-tube, Pressure in a rotating frame.
Physics Daily Test 56 for_Class_11th_Engg	Streamline flow, Equation of continuity, Bernoulli's principle, Applications of Bernoulli's theorem
Physics Daily Test 57 for_Class_11th_Engg	Surface tension, Surface energy, angle of contact, Excess pressure, Capillary rise, Viscosity, Stoke's law, Terminal velocity, Reynolds number, Poiseuille's formula
Physics Daily Test 58 for_Class_11th_Engg	Introduction, Temperature & Heat, Measurement of temperature, Thermal expansion, Linear expansion, Volume expansion, Relation between volume expansion and linear expansion
Physics Daily Test 59 for_Class_11th_Engg	Specific heat capacity, Latent heat, Calorimetry, Heat transfer – Conduction, Fourier's law of heat conduction, Steady state heat conduction, thermal resistance,
Physics Daily Test 6 for_Class_11th_Engg	Significant figures and different operations with significant figures, Rules of Rounding off
Physics Daily Test 60 for_Class_11th_Engg	Growth of ice in pond, Convection, radiation, Black body, Newtion's law of cooling, Stefan's law, Kirchhoff's law, energy distribution of black body radiation, Wein's displacement law

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AAKASH TEST PLANNER :
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DPT NAME	SYLLABUS
Physics Daily Test 61 for_Class_11th_Engg	Physics: Introduction, Thermal equilibrium, Zeroth law of thermodynamics, Thermodynamic state variables and equation of state. Heat, internal energy and work, Calculating work done by a gas, Calculating work done by indicator diagram, First law of thermodynamics.
Physics Daily Test 62 for_Class_11th_Engg	Specific heat capacity, Calculating molar heat capacity of a gas, Various Thermodynamic processes, Polytropic process (Pva = Constant), Heat engines, Refrigerators & heat pumps, Second law of thermodynamics, Reversible and irreversible process,Carnot's Engine.
Physics Daily Test 63 for_Class_11th_Engg	Introduction, Molecular nature of matter, Behaviour of gases, Gas Laws, Kinetic theory of an ideal gas, Pressure exerted by a gas, Law of equipartition of energy, Specific heat capacity, Mean free path.
Physics Daily Test 64 for_Class_11th_Engg	Introduction, Periodic & oscillatory motions, Simple harmonic motion and uniform circular motion, Velocity and acceleration in simple harmonic motion, Force law for simple harmonic motion, Energy in simple harmonic motion, Calculation of time period of spring block system
Physics Daily Test 65 for_Class_11th_Engg	Combination of springs, SHM of two particle system, Angular SHM, Simple pendulum and physical pendulum, Torsion pendulum, Other examples on linear SHM, Damped simple harmonic motion,Forced oscillations & resonance.
Physics Daily Test 66 for_Class_11th_Engg	Progressive wave and it's types [Transverse & longitudinal]; Wave pulse; Wave function and equation of a plane progressive harmonic wave, Phase difference, Path difference; Particle velocity, Particle acceleration, Velocity of transverse wave in string, Velocity of longitudinal waves (sound wave); Intensity and loudness, power transmitted in waves
Physics Daily Test 67 for_Class_11th_Engg	Super Position of Waves, Reflection and refraction of waves, Standing waves and it's wave function ; Standing waves in string and Organ pipe, Resonance tube and end correction, Interference of sound waves ; Beats; Doppler effect ; Mixed problem on Doppler effect and beats
Physics Daily Test 7 for_Class_11th_Engg	Concept of position, path length, displacement, average velocity & average speed, Instantaneous velocity and speed.
Physics Daily Test 8 for_Class_11th_Engg	Differentiation, Its physical significance, Important formulae for Differentiation
Physics Daily Test 9 for_Class_11th_Engg	Application of Differentiation

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Sr. No.	Test Name	Test Date	Test Syllabus
1	FT-01	8-May-20	**Physics : Electric Charges and Field :**Electric charges, Conductors and insulators, Charging by induction, Charging by friction, Properties of electric charge., Coulomb's law, Vector form of Coulomb's law, principle of superposition, forces between multiple charges, Electric field, Electric field due to a point charge, superposition principle, Electric field due to a group of charges, Motion of a charged particle in uniform electric field, Electric field of a continuous charge distribution, volume, surface and linear charge distribution, Electric field due to a linear charge distribution like a straight rod, Electric field on the axis of a disk, ring and other cases of interest, Electric lines of force, properties of lines of force, lines of force due to a positive and negitive point charge. Electric flux, Gauss's Law and application, Calculating electric field using Gauss's law. Electric field due to a point charge, An infinite linear charge distribution, A hollow cylinder of charge, Charged solid cylinder, A shell of charge, Uniform sphere of charge, An infinite thin non conducting sheet **Chemistry : Solid State:** Introduction : Three states of mater, Classification of solids : (i) Characteristic properties, (ii) Difference between crystalline and amorphous solids, (iii) Classification of crystalline solids; Structure of solids : (i) Basic definifions, (ii) Types of unit cells, Seven crystal systems and Bravais lattice, Calculation of effective number of particles in a unit cell.,Elements of symmetry in cube : (i) Centre of symmetry, (ii) Plane of symmetry, (iii) Axis of symmetry, Close-packed structures : (i) 1-D close packing, (ii) 2-D close packing, (iii) 3-D close packing, (AAA… type packing).,ABAB……type packing, (i) hexagonal close packing, (ii) Cubic close packing and voids, Packing efficiency.,Radius ratio in ionic solids : r^+/r^- in voids; Density, Coordination number,Types of crystal structure : (i) AB type, (ii) AB_2 and A_2B type, (iii) Spinel and inverse spinel structures; Effect of temperature and pressure, Imperfection in solids : (i) Stoichiometric defects, (ii) Non-stoichiometric defects; Magnetic and electrical properties of solids, **Mathematics : Relations and Functions:** Relation : Definition, Domain, Range, Total number of relations, Composition & inverse of relations, Types of relation, Reflexive, Symmetric, Transitive, Equivalence, Examples,Function : Domain,Range, Graph, Example,Type of Functions : One-one, Many One, Onto, Into, Examples,
2	FT-02	22-May-20	**Physics : Electric Charges and Field :** Electric dipole, Dipole moment, Electric field due to an electric dipole on axial line, equatorial line and at any other point., Electric dipole in a uniform electric field, Potential energy associated with dipole, Dipole in non-uniform electric field, Dipole oscillation **Electrostatic Potential and Capacitance:** Electrostatic potential energy , Electrostatic potential energy of two and more point charges, Electrostatic potential, Potential difference, Potential due to a point charge, Potential due to system of charges, Potential due to continuous charge distribution *e .g .*, Uniformly charged disc/ring, Relation between electric field and potential, Electric potential of an Annulus, Potential due to a spherical shell, Uniform sphere of charge, Infinite long linear charge, Equipotential surface, Equipotenital surface due to a point charge and electric dipole, a long linear charge, Plane sheet of charge., Electrostatics of conductors : A conductor placed in electric field, A charged isolated conductor. Electric field near the surface of conductor, The role of sharp points on conducting surfaces **Chemistry : Solutions:** Introduction : (i) Basic definitions, (ii) Type of solutions; methods of expressing strength of solutions; Solubility : (i) Solid in liquid, (ii) Gas in liquid (with Henry's law), (iii) Liquid in liquid,Vapour pressure of solution : (i) Factors affecting vapour pressure, (ii) Raoult's law, (iii) Ideal solutions.,Non-ideal solutions, (iv) Classification of non-ideal solutions, Composition of vapour; Azeotropic mixture, Colligative properties : (i) Relative lowering of vapour pressure.,(ii) Elevation in boiling point, (iii) Depression in freezing point, (iv) Osmotic pressure, van't Hoff factor and abnormal molecular mass : (i) Association of solute, (ii) Dissociation of solute, **Mathematics : Relations and Functions:**Composite Function, Inverse of a Function,Even/odd Functions,Periodic function,Binary Operation and its Types,,Miscellaneous question, Assignment discussion,

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Sr. No.	Test Name	Test Date	Test Syllabus
3	FT-03	5-Jun-20	**Physics : Electrostatic Potential and Capacitance:** Conductor with cavity, Electrostatic pressure, Grounding of conductors, Dielectrics and polorisation, Capacitor and Capacitance, Types of capacitors-Parallel plate Capacitor, spherical capacitor, Cylindrical capacitor, Charging of a capacitor, Energy stored in a capacitor, Force between the plates of a parallel plate capacitor, Grouping of capacitors, Capacitors with dielectrics, Sharing of charge and common potential, Laws for solving complex circuits of capacitors, Van De Graff Generator **Chemistry : Electrochemistry;** Introduction ; Electrolytic conductance :(i) Conductors, (ii) Ohm's law, (iii) Resistance, (iv) Conductance, (v) Cell constant, (vi) Molar and equivalent conductance,(vi) Molar and equivalent conductance, Variation of conductance with concentration, Kohlrausch's law and its application, ,Coductometric titration (Preceptation reaction, Strong acid - strong base reaction, Weak acid-weak base reaction, weak acid-strong reaction),Electrolysis : (i) Electrolytic cell, (ii) Product of electrolysis, (iii) Faraday's law of electrolysis, **Mathematics : Inverse Trigonometric Functions:** Principal value, Graphical representation, Properties, Converting one inverse function into another, example, Sum, difference formula of inverse function, Solution of inverse trigonometric equations. Miscellaneous question, Assignment discussion
4	TE-01	12-Jun-20	**Syllabus of FT-01 to FT-03**
5	FT-04	3-Jul-20	**Physics : Current Electricity:** Electric current, Electric current in conductors, Ohm's law , Factors affecting resistance of a conductor, Current density and electric field, Drift of electrons and the origin of resistivity, mobility, limitations of Ohm's law, Resistor colour codes, Temperature dependence of resistivity, Calculating resistance for different shapes, Electrical energy, Power, Combination of resistors, Cells, emf and internal resistance of a cell, Maximum power transfer theorem, Cells in series and parallel, Kirchoff's laws., Earthing or grounding in an electric circuit **Chemistry : Electrochemistry:** Electrochemical cell : (i) Cell representation (ii) Working of a cell, (iii) Function of salt bridge, (iv) Electrode potential and emf of a cell,Electrochemical series and its application; (i) Nernst's equation, Applications of Nernst's Equation,Equilibrium Constant,Concentration Cell, Thermodynamic Relationship of a cell,Standard electrodes : Gas-gas ion electrode, Metal-metal ion electrode, Metal-metal insoluble electrodes, Redox electrode. Batteries, Fuel Cell, Corrosion, **Mathematics : Matrices :** Defination Types of matrices Operations on Matrices- Equality of matrices, Algebra of matrices-Addition, Subtraction, Multiplication by scalar, matrix multiplication & Properties, Trace of a matrix, Transpose of a matrix ; Symmetric, Skew Symmetric, Elementry row transformation **Determinants :** Determinants of matrix of order one, two, three, Properties of Determinant, product of Determinant ,Applications of Determinants-Areas, Minor and Co-factors, Adjoint of a matrix, Inverse of a matrix, Applications of Determinants and Matrices, Inverse of a matrix, Applications of Determinants and Matrices

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Sr. No.	Test Name	Test Date	Test Syllabus
6	FT-05	17-Jul-20	**Physics : Current Electricity:** Wheatstone bridge, Equivalent resistance of complex networks, Metering circuits, Galvanometer, Ammeter, Conversion of galvanometer to ammeter, Voltmeter, Conversion of galvanometer to voltmeter, Error in the measurement by ammeter/voltmeter, Meter bridge, potentiometer application of potentiometer, Sensitivity of potentiometer, R-C circuit, Steady state R-C circuit, Transient R-C circuit, Charging and discharging of a capacitor through resistance, Complex RC circuit **Chemistry : Chemical Kinetics and Nuclear Chemistry:** Introduction ; Rates of chemical reaction: (i) Rate, (ii) Average and instantaneous rate, (iii) Law of mass action, (iv) Rate law or rate equation of a reaction, (v) units of rate of a reaction, Order and molecularity. Integrated rate law : (i) Zero order, (ii) First order, (iii) Half-life, (iv) n^{th} order, Graphical method.,Numericals on some first order reactions : (i) In terms of concentrations, (ii) in terms of pressure, (iii) in terms of volumetric analysis, (iv) in terms of optical rotation,Order of reaction from reaction mechanism, Parallel reaction,Factors affecting rate of a chemical reaction : (i) Concentration of reactant, (ii) Nature of reactant and product, (iii) Exposure to radiation (photochemical reactions), (iv) Temperature (Arrhenius equation), (v) Catalyst, (vi) Surface area,Nuclear chemistry : (i) Properties of a^-, b^-, g^- rays, (ii) Group displacement law, (iii) Nuclear stability, (iv) Rate of radioactive decay, (v) Types of nuclear reactions, (vi) Radio-carbon dating, **Mathematics : Determinants:** Solution of equations- Using Inverse and Cramer's rule., Assignment disscussion, **Limit and Continuity:** Limits, Indeterminate forms, Evaluation of limit, L' Hospital rule, Continuity, Definition, Examples
7	FT-06	7-Aug-20	**Physics : Moving Charges and Magnetism:** Magnetic field due to a current element (Biot-Savart law), Magnetic field Surrounding a thin straight current-carrying conductor, Magnetic field due to a loop of current on its axial point at centre, Magnetic field due to an arc at its centre, Magnetic field due to different combined structures, Ampere's circuital law. Applications of Ampere's law (a) magnetic field due to a straight infinite current-carrying wire, (b) Magnetic field inside a long straight current-carrying conductor, (c) Magnetic field inside a hollow straight current-carrying conductor, (d) Magnetic field due to an infinite plane sheet of current, (e) Magnetic field due to a long solenoid, (f) Magnetic field of a toroid" "Magnetic force (Lorentz force), Direction of magnetic force (Fleming's left hand rule), Properties of magnetic force on charge, Magnetic force on a current-carrying conductor. Force between two parallel current-carrying wires. Force between two perpendicular current carrying wires. Motion of charged particle in a Magnetic field, when (a) $\theta = 0°, 180°$ straight line, (b) $\theta = 90°$, circular path, finding r, T, F, (c) $\theta \neq 0°, 90°, 180°$, Helix. Finding radius, pitch, (d) Deviation of charged particle in a magnetic field, (e) Time spent by a charged particle in magnetic field **Chemistry : Surface Chemistry, General Principles and Processes of Isolation of Elements** **Mathematics : Differentiability, Method of Differentiation:** Differentiability : Definition, LHD, RHD, Chain rule, Differentiation of composite, Implicit, Inverse Trigonometric function. Differentiation of logarithmic, Parametric forms, 2^{nd} Order derivative, Rolle's theorem, LMVT, Examples, Functional equations and assignment discussion.
8	TE-02	14-Aug-20	**Syllabus of FT-04 to FT-06**

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9	FT-07	28-Aug-20	**Physics : Moving Charges and Magnetism:** Motion of charged particle in combined electric and magnetic fields, (a) V, E and B all parallel to each other, (b) V, E and B all perpendicular to each other, (c) E is parallel to B and particle velcoity is perpendicular to both these fields Current loop as a magnetic dipole, Torque on a current loop in a uniform magnetic field, The magnetic dipole moment of revolving electron, The moving coil galvanometer **Magnetism and Matter:** Bar magnet, Magnetic Field Lines, Pole strength, Bar magnet as an equivalent solenoid, Magnetic dipole moment of a bar magnet, Magnetic field due to a bar magnet (a) On axial position, (b) On normal bisector, Dipole in uniform magnetic field, Torque on a magntic dipole in uniform magnetic field, Work done in rotating dipole in uniform magnetic field, Potential energy of dipole in uniform magnetic field Tangent law, Deflection galvanometer, Gauss's law, Earth's Magnetism, Geographic meridian, Magnetic meridian, Magnetic declination and dip, Horizontal and vertical component of earth magnetic field, Relation between horizontal component, Vertical component and angle of dip Magnetization and magnetic intensity, Magnetic susceptibility, Magnetic permeability, Relative permeability, Magnetic properties of material (a) Diamagnetism (b) Paramagnetism (c) Ferromagnetism (d) Hysterisis (e) Curie's law, Hard and soft magnets, Permanent magnet and electromagnets Chemistry : p- Block elements (group 15 – 18) : Physical properties of group - 15, Anomalous behaviour of nitrogen, Chemical properties and trends in chemical reactivity, Dinitrogen,Ammonia, Oxides of nitrogen, nitric acid, allotrophes of phosphorous, Compounds of phosphorous (PH_3, PCl_3, PCl_3 oxoacids P),Physical and chemical properties fo 16th group elements, Dioxygen (Preperation and properties), oxides, ozone, Allotropes of “S”, Compounds of S (oxoacids, H_2S, SO_2, SO_3, $Na_2S_2O_3.5H_2O$),Physical and chemical properties fo 17^{th} group F_2, Cl_2, Br_2 and I_2. (Preperation and properties),HX, Oxoacids of halogens bleaching powder, Interhalogen compounds, Psuedohelogens, Physical properties of 18^{th} group elements, Compound of Xe **Mathematics : Applications of Derivatives:** Derivative as rate measurer- Rate of change of quantities, Marginal rate, related rates **,** Equation of tangent & Normal, Length of tangent, Normal, Sub-tangent, Subnormal, Angle between two curves, Examples,Errors and approximation, Monotonicity - Increasing and Decreasing function,Definition of local maxima & minima, Absolute maxima & minima,First order Derivative test, Second order derivative Test,Word problem on Maxima & Minima ,

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Sr. No.	Test Name	Test Date	Test Syllabus
10	FT-08	11-Sep-20	**Physics : Electromagnetic Induction:** The experiments of Faraday and Henry, Magnetic flux, Faraday's law of inducton, Lenz's law, Lenz's law and conservation of energy, Methods to change the magnetic flux,Induced emf, induced current and induced charge in different cases, Field induction, induced electric field, Induced electric field in a cylindrical region, Examples based on calculation of emf induced in rods placed in various positions in the cylindrical region, Motional EMF, Eddy currents, Inductance and inductor, Self inductance, Potential difference across an inductor, energy stored in an inductor, energy density, Grouping of Inductors, *L-R* circuit (growth of current and decay of current), steady state *LR* circuit, steady state *LCR* - circuits, Current in various branches just after closing and just after opening the switch, Time constant of complex *LR* circuits, Mutual inductance, Mutual inductance of co-axial solenoids, AC generator, Migration of birds **Chemistry : d & f - Block elements (group 15 – 18), Co-ordination Compounds, Qualitative analysis, Some basic concept of organic chemistry:** Electronic Effects (Electromeric, Inductive, Resonance and hyperconjugation), Intermediates and their stability, Comparison of acidic strength of acids, Comparison of basic strength of bases, Isomerism **Mathematics : Indefinite Integration:** Indefinite Integrals Introduction basic concepts, Standard result, Algebra of Integration, Methods of integrations, Integration of some particular functions., Partial fraction, Integration by parts, Special Integral of Type : Integration of Irrational function, Reduction formula problem discussion
11	FT-09	25-Sep-20	**Physics : Alternating Current :** AC voltage applied to a series LCR circuit, Resonance, sharpness of resonance, Parallel resonance circuit, Power in AC circuit (the power factor) Choke coil, LC oscillation, Transformer. **Electromagnetic Waves :** Introduction, Ampere circuital law and its contradiction, Displacement current, Consequences of displacement current, Maxwell equation, Sources of electromagnetic waves, Relation between Electric field, Magnetic Field and speed of light, Intensity of electromagnetic waves; Intensity due to a point source, Electromagnetic Spectrum. **Ray Optics and Optical Instruments:**Concept of rays; Laws of reflection; Plane mirrors; (reflection from plane surface); Image formation and characteristics of image; Speed of image of moving object, Number of images due to two inclined mirrors; Field of view and minimum size of mirror to view full image of the persons; Minimum size of mirror to view full length of wall behind the person, Field of view, Reflection from curved surface; Pole, principal axis, centre of curvature, etc.; Mirror equation; (graph between 1/v and 1/u, between v and u); Magnification ; (lateral as well as longitudinal); Co-ordinates of image if point object is not at principal axis; Image speed when object is moving. **Chemistry : Haloalkanes and Haloarenes:** Haloalkanes and Haloarenes : Introduction, Classification, IUPAC nomenclature, Preparation of haloalkanes from alcohols, from hydrocarbons, halogen exchange; from Arenes and from Diazonium salt.,Physical and chemical properties of haloalkanes, Ambident nucleophiles.,Stereochemical aspects of nucleophilic substitution reactions – Optical isomerism, specific rotation, chiral carbon, elements of symmetry, enantiomers, diastereomers, relative and absolute configuration.,Mechanism of S_N1, S_N2, E_1 and E_2 reactions, Reactions of Haloarenes : Nucleophilic substitution, Electrophilic substititution, Reaction with metals; polyhalogen compounds, **Mathematics : Definite Integration:** Introduction- Definite integral as the limit of a sum, Properties of definite integrals, Estimation of integrals, Gamma Function, Reduction formula, Miscellaneous Problem. **Application of Integrals:** Area under simple curve, Curve sketching, Basic problems, Miscellaneous Problems and assignment discussion
12	TE-03	9-Oct-20	**Syllabus of FT-07 to FT-09**

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Sr. No.	Test Name	Test Date	Test Syllabus
13	FT-10	30-Oct-20	**Physics : Ray Optics and Optical Instruments :** Refraction at plane surface, laws of refraction; Finding refracted ray, given incident ray vector; Apparent depth; Apparent depth in the case of multi-layer of media, Total internal reflection; (critical angle); Mirage, optical fibres; Shift due to a slab, Path of a ray of light in a medium of variable refractive index, Refraction from spherical surfaces; Refraction from single spherical surface; (relation between image distance and object distance), Lenses; Lens - maker's formula; Different types of lenses, *e.g* ., Biconvex, Biconcave, Plano convex etc., Lenses; Lens formula, Image formation due to lens ; (convex and concave); Magnification of image due to lens, Lens Constant.; Displacement method to determine the focal length of a convex lens. Power of a lens; Power of a combination of thin lenses in contact; Equivalent focal length; (power) of a combination of two lenses separated by a distances; Behaviour of lens silvered on one face, Prism; Expression for deviation due to prism; Deviation due to thin prism; Minimum deviation and calculation of refractive index with the help of minimum deviation; Condition for no emergence of ray from prism; Dispersion and deviation due to prism, dispersive power; Condition for dispersion without deviation and deviation without dispersion, Optical Instruments; Simple microscope; (magnification in normal adjustment and adjustment for least distance); Compound microscope; (magnification in both adjustments - normal as well as for least distance) tube length; Telescope; (magnification in both adjustments), tube – length **Chemistry : Alcohols, Phenols and Ethers:** Alcohols and phenols : Introduction, Classification, Nomenclature, Structure of functional group, Preparation of alcohols,Preparation of phenols, Physical properties of alcohols and phenols, Chemical properties of alcohols,Chemical reactions of phenol – Nitration, halogenation, sulphonation; Kolbe's reaction, Reimer Tieman reaction, reduction, oxidation, Claisen rearrangement.,Coupling reaction of phenol; Ethers : Classification, naming and preparation of ethers, Chemical reactions of ethers, Electrophilic substitution of aryl ethers, Preparation of expoxides, Reactions of epoxides, **Mathematics : Differential Equations:** Order Degree of differential equation, Examples, Formation of a differential equation, Variable seprable, Homogeneous differential equation. Reducible to homogeneous differential equation,, Linear differential equation, Bernoulli's equation, Inspection method, Orthogonal trajectory examples, Miscellaneous questions **Vectors :** Types of vectors, Addition of Vectors and Properties, Multiplication by Scalar, Components of Vector, Section Formula, Scalar Triple product, Volume of parallelepiped, Tetrahedron, Examples, Vector triple product and its application, Solution of vector equation, Assignment discussion

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Sr. No.	Test Name	Test Date	Test Syllabus
14	FT-11	20-Nov-20	**Physics : Wave Optics :** Wave Optics; Concept of wavefront and ray; Huygen's construction; Explanation of laws of reflection and refraction; Behaviour of mirrors, lenses and prisms according to wave – model. Coherent and Inchorent source of light, Interference of light – Mathematical analysis, Young's Double slit experiment, locations of bright and dark fringes, Shape of fringes on screen, fringe-width; Effect on fringe - width if colour of light changed, if experimental set - up is dipped in liquid; Intensity variation, fringe visibility. Interference; Interference experiment with bi-chromatic light, coincidence of two bright fringes or dark fringes; Optical path, displacement of fringes due to introduction of a transparent slab in the path of waves, Diffraction, Resolving power of optical instruments, validity of ray optics, Polarization, Intensity of transmitted light, Law of Malus, Brewster's Law, **Dual Nature of radiation and Matter :** Introduction, Electron Emission; Photoelectric effect; Work function; Stopping potential, its dependence on intensity and frequency of incident light; Failure of wave-model of light to explain out the above mentioned experimental findings, Hallwach and Lenard's observation, experimental study of photoelectric effect, laws of photoelectric emmision, Einstein's theory of photons; Einstein's photo-electric equation, Problems based on photoelectric effect, Radiation pressures; (when light falls normally / obliquely) ; Matter - waves and de-Broglie wave-length ; Davisson – Germer experiment, Compton effect, **Chemistry : Aldehydes, Ketones and Carboxylic acids:** Aldehydes and Ketones : Introduction, Nomenclature and structure, Preparation of aldehydes and ketones from alcohols, hydrocarbons and acid halides,Preparation continued from cyanides, esters and carboxylic acids, Preparations of aromatic aldehydes and ketones,Physical properties of aldehydes and ketones, Chemical reactions – Nucleophilic addition of HCN, $NaHSO_3$, Grignard's reagent, alcohols and ammonia derivatives,Reduction reactions : Reduction to alcohols; reduction to hydrocarbons, Oxidation reactions by Tollen's reagent and Fehling solution; Haloform reaction; Baeyer-Villeger oxidation, Reaction due to a-hydrogen : Aldol condensation; Cannizzaro reaction; Electrophilic substitution of aromatic carbonyl compounds, Perkin reaction, Pinnacol – Pinnacolone rearrangement, Beckmann rearrangement **Mathematics : 3D Geometry:** Direction cosines, direction ratios, Angle between two lines , Skew lines, Shortest distance between skew lines and parallel lines **Plane:** Various equations of the plane, Family of planes, Coplanar lines, angle between planes **Plane and line:** Angle, Distance of a point from a plane and from a line. Image of a point with respect to a plane **Linear Programming:** Solution of inequalities using graphical approach, formation of LPP optional, Solution of LPP

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AAKASH TEST PLANNER :
FORTNIGHTLY & TERM EXAM FOR CLASS-XII (JEE)

Test Planner (FT, TE & ST) for Second Step-2020-21

Sr. No.	Test Name	Test Date	Test Syllabus
15	FT-12	4-Dec-20	**Physics : Atoms :** Atomic structure; Thomson model; Rutherford's α-scattering exp.; atomic spectra, Bohr's model; (radius, speed of electron, energy); Line spectra of hydrogen atom. De Broglie's explanation of bohr's second postulate of quantization, Examples based on above concepts, Atomic excitation due to collision, X-rays; Coolidge tube arrangement; Characteristic and continuous X-rays; Minimum wavelength of continuous X-rays; Moseley's law and its derivation according to Bohr's model, Nucleus; Nuclear forces; Nuclear stability curve; **Nuclei :** Nuclear binding energy and examples on its calculation; Mass defect; Packing fraction; Nuclear reactions; a, b, g – decays, Natural Radioactivity and Law of radioactive decay; Half – life; Average life; Activity; (its units); Examples based on above concepts; Determination of age of rock; Carbon – dating, Radioactive decay series; Successive disintegration and radioactive equilibrium; Examples based on above concepts; Problems based on nuclear collisions and reactions, **Semiconductor Electronics : Materials Devices And Simple Circuits :** Classification of insulators, conductors and semiconductors, Intrinsic semiconductors, Extrinsic Semiconductors, Energy bands, PN type semi conductors, PN Junction, Semiconductor Diode, Application of Junction Diode as a rectifier (Half wave Rectifier and Full Wave Rectifier) Special purpose PN Junction Diode, Junction Transistor, Transistor as a device(Switch, Amplifier and oscillator), Digital electronics and logic gates, **Communication Systems :** Introduction, Elements of communication system; Basic Teminology used in electronic communication system, band width of signals, band width of transmission medium, modulation and its necessity, types of modulation, Amplitude modulation, Demodulation detection of amplitude modulated wave, Different communication systems (Ground wave, Space wave, Sky wave, Satellite communication), **Experimental Physics :** Experiments based on vernier callipers, Screw Gauge **Chemistry : Carboxylic acids** : Nomenclature and structure of carboxyl group, Preparation of carboxylic acids, Physical properties; Chemical reactions : Acidic strength, formation of acid halides, esters, anhydrides and amides; Decarboxylation and HVZ reaction,Derivatives of carboxylic acid : Preparation and properties of acid halides, anhydrides, Esters and Amides, **Amines, Biomolecules, Polymers, Chemistry in Everyday Life** **Mathematics : Probability:** Basics of probability, Problem on P & C, Independent events, Total probability : Examples, Bayes' theorem, Probability distribution of a random variable,Mean & Variance of distribution, Binomial Distribution
16	TE-04	11-Dec-20	**Syllabus of FT-10 to FT-12**