VVPS
VIDYA VIKAS PUBLIC SCHOOL
Morabadi-Boreya Road, Ranchi -834006, Jharkhand. Phone: 06512910081 E-Mail: vvpsranchi@gmail.com
(An English Medium Co-Educational Sr.Sec.(+2) School-Affiliated to CBSE, New Delhi, Affiliation 3430297)

SPLIT UP SYLLABUS – CLASS - XII
2024-25
MATHEMATICS (041)

TEXT BOOK: MATHEMATICS PART-1 & PART-2 TEXT BOOK FOR CLASS XII (NCERT)
LABORATOARY MANUAL MATHEMATICS – XII (ARIHANT)
REFERENCE BOOKS: EXEMPLAR (MATHS PROBLEMS CLASS XII (NCERT)
RS AGARWAL MATHS BOOK FOR CLASS XII

MONTHS	NO. OF WORKING DAYS	TOPICS TO BE TAUGHT	ACTIVITIES	LEARNING OUTCOMES
APRIL	**23 DAYS**	**UNIT II : ALGEBRA** • **MATRICES** Concept notation, order, equality, types of matrices, zero and Identity matrix, transpose of a matrix, symmetric and skew symmetric matrices, Operation on Matrices. Concept of elementary row & column operation. Invertible matrices and proof of the uniqueness of inverse if it exists ;(Here all matrices have real entries). **II. DETERMINANTS** Determinants of a square matrix (up to 3 x 3 matrices), properties of determinants. Application of determinants in finding area of a triangle. Adjoint & Inverse of a matrix. Consistency, inconsistency and number of solutions of system of linear equation, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.		After studying this chapter one should be able to : **MATRIX** • Understand Matrix & its practical uses. • Understand different types of matrices including their notation. • Formation of matrices of different order. • Perform elementary transformation. **DETERMINANTS** 1. Evaluate determinants 2. Expand determinants of second and third order 3. Find inverse of matrix 4. Check the consistency of system of linear equations.
MAY	**15 DAYS**	UNIT I : **RELATION & FUNCTIONS**		

		1. **RELATION AND FUNCTIONS** Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, inverse of a function. II. **INVERSE TRIGNOMETRIC FUNCTIONS** Definition, range, domain, Principal value branch. Graphs of Inverse Trigonometric functions. Elementary properties of inverse trigonometric functions.	1. To verify that the relation R in a set L of all lines in a plane is symmetric but neither reflexive nor transitive. 2. To verify that the relation R in a set L of all lines in a plane is an equivalence relation.	1. Verify the equivalence relation in a given set. 2. Verify the given function is one-one, many-one, onto/not onto or one-one onto. 3. Determine whether a given operation is binary or not. 4. Find the inverse of trigonometric function. 5. Explain the concept of Principal value.
JUNE	**19 DAYS**	UNIT III : **CALCULUS** **CONTINUITY AND DIFFERENTIABILITY** Continuity and differentiability , derivatives of composite functions , chain rule , derivatives of inverse trigonometric function , derivatives of implicit function , concept of exponential and logarithmic functions. Second order derivatives. Rolles's and Lagrange's mean value theorem and their geometric interpretation.	3. To ify grange's an Value orem. 4. To verify Rolle's Theorem.	1. Check the continuity of a function at a point and in the interval. 2. Check the differentiability of a function. 3. Find the higher order derivatives. 4. Verify and check the Rolle's and Langrange's mean value theorem.
JULY	**25 DAYS**	**APPLICATION OF DERIVATIVES** Application of derivatives : rate of change of bodies , increasing/ decreasing functions , tangents & normal , use of derivatives in approximation , maxima & minima . Simple problems (that illustrate basic principles and understanding of the subject as well as real life situations).	5. To verify Rolle's Theorem. 6. To understand the concept of increasing and decreasing function. 7. To understand	1. Find the small change in value of a dependent variable when another independent variable undergoes a small change. 2. Derive the equation of tangents and normal to a curve at a given point. 3. Find out the interval in which function is increasing and decreasing.

			the concept of absolute maximum and minimum value.	
AUGUST	**23 DAYS**	**INTEGRALS** Integration as inverse process of differentiation. Integration of a variety of functions by substitution by partial fraction and by parts, definite integrals as a limit of a sum, Fundamental theorem of calculus. **APPLICATIONS OF THE INTEGRALS** Application in finding the area under simple curves, especially lines, areas of circles/parabolas/ellipses. Area between the two above-said curves.	8. To define the definite integral by limit of sum method and verify it by actual integration.	**INTEGRATION** 1. Understand indefinite integration as reverse process of differentiation. 2. Integrate the rational function using partial functions. 3. Integrate the product of functions using by parts. 4. Understand the idea of area under a curve as the limit of a sum. **APPLICATIONS OF THE INTEGRALS** 1. Understand the use of concept of symmetry in finding areas. 2. Understand the concept of finding area when curve is lying below x-axis.
SEPTEMBER	**23 DAYS**	**REVISION FOR HALF YEARLY** **+** **QUESTION PAPER DISCUSSION** **+** **DIFFERENTIAL EQUATIONS** Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Formation of differential equation by the method of Separation of variables, solution of homogeneous differential equation of first order and first degree.		**DIFFERENTIAL EQUATIONS** 1. Explain the meaning of differential equation. 2. Describe the order and degree of matrix. 3. Form the differential equation from the given equation of the curve. 4. Apply the concept of differential equations in general problems.

OCTOBER	**19 DAYS**	**UNIT IV : VECTORS AND THREE DIMENSIONAL GEOMETRY** **VECTORS** Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratio of a vector. Types of vectors, position vector of a point , negative of a vector ,components of a vector , addition of vector , multiplication of vector , dot product of a vectors , cross product of vectors , scalar triple product of vectors. **THREE DIMENSIONAL GEOMETRY** Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Angle between two lines, two planes and a line and a plane. Distance of a point from a plane.	9. To measure the shortest distance between two skew lines and verify it analytically.	**VECTORS** 1. Define scalar and vector quantities. 2. Define types of vectors 3. Calculate the magnitude and scalar product of the vectors. 4. Find the ripple product of vectors and its application in finding the volume of parallelepiped. **THREE DIMENSIONAL GEOMETRY** 1. Find direction cosines and direction ratios of a line. 2. Find vector and Cartesian equations of a line. 3. Find angle and distance b/w a line and a plane.
NOVEMBER	**20 DAYS**	**UNIT V : LINEAR PROGRAMMING** **LINEAR PROGRAMMING** Introduction , related terminology such as constraints , objective function , optimization , different types of linear programming problems , graphical and mathematical formulation , graphical method of solution for problems in two variables , feasible and infeasible regions(bounded and unbounded) , optimal feasible solutions.	10. To explain the computation of conditional probability of a given event a, when event B has already occurred, through an example of throwing a pair of dice.	**LINEAR PROGRAMMING** 1. Graphical method to find solution of the linear programming problems. 2. Able to check the authenticity of solution in case of open feasible region. **PROBABILITY** 1. Find conditional probability involving different types of event. 2. Explain independent events and use multiplication

		UNIT VI: PROBABILITY **PROBABILITY** Conditional probability , multiplication theorem on probability , independent events , total probability , Bayes' theorem , random variable and its probability distribution , means and variance of random variable. Bernoulli's trails.		theorem to find probability. 3. Find probability distribution of a random variable, mean and variance of probability distribution of a random variable.
DECEMBER	**22 DAYS**	**REVISION + MOCK-1 EXAMINATION**	**PROJECT**	
JANUARY	**20 DAYS**	**MOCK-2 EXAMINATION**		
FEBRUARY	**22 DAYS**	**STUDY LEAVE + BOARD EXAM COMMENCEMENT**		

SUBJECT: CHEMISTRY
BOOK: NCERT

MONTH	No. OF WORKING DAYS	TOPIC	ACTIVITIES / EXPERIMENTS	LEARNING OUTCOMES	ART INTEGRATION
April	**23**	**Haloalkanes and haloarenes :** **Haloalkanes : Nomenclature, preparation, nature of C – X bond, physical and chemical properties, mechanism of substitution reactions.** **Haloarenes: Nomenclature, preparation, nature of C–X bond, physical and chemical properties, mechanism of substitution reactions (directive influence of halogen in monosubstituted compounds only)** **Uses and environmental effects of:** **CH_2Cl_2, $CHCl_3$, CCl_4, CH , freons, DDT.**	**Salt analysis: Detection of acid and basic radical in given salt (NH_4Cl)**	**Able to understand nomenclature, physical and chemical properties of alkyl and aryl halides.**	**Make a flow chart for the classification of haloalknaes.**

May	**15**	**Alcohols, phenols and ethers :** **Alcohols : Nomenclature, preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols. Mechanism of dehydration, uses of methanol and ethanol.** **Phenols: Nomenclature, preparation, physical and chemical properties, acidic nature of phenols, electrophilic substitution reactions, uses of phenols.** **Ethers: Nomenclature, preparation, physical and chemical properties, uses.**	**Detection of function group in a given organic compound. (phenol and alcohol)**	**Able to understand nomenclature, physical and chemical properties of alcohols, phenols and ethers.**	**Make a flow chart for the preparation and reactions of alcohol and phenols.**
June	**18**	**Aldehydes, ketones and carboxylic acids:** **Aldehydes and ketones: Nomenclature, preparation, nature of carbonyl group, physical and chemical properties, mechanism of nucleophilic addition reaction, reactivity of alpha H – atom in aldehydes.** **Carboxylic acids: Nomenclature, acidic nature, preparation, physical and chemical properties**	**Detection of functional group in a given organic compound (ketone).** **Detection of functional group in a given organic compound (carboxylic acid)**	**Able to understand nomenclature, physical and chemical properties of aldehydes, ketones and carboxylic acids.**	
July	**25**	**Organic compounds containing nitrogen** **Amines: Nomenclature, classification, structure, preparation, physical**	**Detection of functional group in a given organic**	**Able to understand nomenclature, physical and**	

		and chemical properties, identification of primary, secondary and tertiary amine. Cyanides and isocyanides. Diazonium salts: preparation, chemical properties.	compound (Amine)	chemical properties of amines and diazonium salts.	
		Solutions : Types of solutions, expressing concentration of solutions, solubility. Vapour pressure of liquid solutions. Raoult's law, ideal and non – ideal solutions, azeotropes. Colligative properties: Relative lowering in vapour pressure, elevation in boiling point, depression of freezing point, osmotic pressure. Abnormal molecular mass.	Titration of unknown solution of $KMnO_4$ with M/20 Mohr's salt solution.	Understanding Different types of solutions in our daily life and different methods for determining their concentrations.	
August	23	Electrochemistry : Redox reactions. Galvanic cells, electrode potential. Nernst equation. Effect of opposing potential on the cell reaction. Conductance of electrolytic solutions. Variation of conductivity and molar conductivity with concentrations. Kohraousch's law. Electrolytic cells and electrolysis. Batteries, fuel cell, corrosion.	Titration of unknown solution of $KMnO_4$ with N/20 oxalic acid solution.	Understanding Different types of cells and batteries used in our daily life and their applications.	
		Chemical kinetics : Rate of chemical reactions. Average and instantaneous rate, factors affecting rate of chemical reactions. Molecularity of reaction, order of	Titration of unknown solution of $KMnO_4$ with M/20 oxalic acid solution.	Understanding Effect of different factors on rate of reactions, experimental rate of	

		reaction. Integrated rate equations (zero order and first order only). Pseudo first order reaction. Half life reaction. Temperature dependence of rate of chemical reaction. Collision theory, Activation energy, Arrhenius equation. Effect of catalyst.		reaction, molecularity of reaction, different types of order.	
September	23	HALF YEARLY EXAMINATION d and f block elements : General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties of first row of transition elements: metallic character, ionization enthalpies, oxidation states, ionic radii, colour, catalytic properties, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$. Lanthanoids: Electronic configuration, oxidation states, chemical properties and lanthanoid contraction. Actinoids: Electronic configuration, oxidation states and actinoid contraction.		Able to understand periodic trends of d and f block elements, their electronic configuration and chemical properties. Able to understand preparation and uses of d block and f block elements.	
October	19	Coordination compounds: Introduction, Werner's theory, ligands, coordination number, IUPAC		Able to understand the naming , formation and uses of	

		nomenclature, bonding, and isomerism, colour, magnetic properties and shapes.		**coordination complexes.**	
November	**20**	**Biomolecules : Saccharides, types of saccharides, aldose, ketoses, structure determination of saccharide (only glucose), preparation and chemical properties of glucose and fructose. Disaccharides: Sucrose, maltose, lactose. Polysaccharides (elementary idea). Protein: Amino acids, nucleoside, nucleotide, structure of protein, denaturation. Enzymes: Chemical action of enzymes, selectivity. Vitamins, types of vitamins and their uses.**	**Salt analysis: Detection of acid and basic radical in given salt ($BaCl_2$)**	**Able to understand different types of saccharides, their properties and uses. Able to understand the structural determination of glucose, cyclic structure of glucose and fructose. Able to understand formation of disaccharides and different structures of protein .**	
December	**22**	**REVISION+MOCK-1 EXAM**			
January	**20**	**MOCK-2 + PRACTICAL**			
February	**22**	**BOARD EXAM**			

PHYSICS

Prescribed Textbooks: 1. Physics for Class XII NCERT
Reference Books: 1. new simplified Physics (Vol. I & II) by S. L Arora(DHANPAT RAI AND CO.)
- Pradeep fundamental physics (K.l.GOMBER & k.L. GOGIA)
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Month	No of W.D.	Topics	Activity/ Experiment	Learning outcomes
April + May	23+15=38	Unit – I : Electrostatics a) Electric charges, conservation of charge, Coulomb's Law – Forces between two point charges, Forces between multiple charges. Superposition principle and continuous charge distribution.	• To determine resistance per cm of a given wire by plotting a graph of	Able to understand about the charge and its properties. Able to understand about the force due to multiple charge

		b) Electric Field – Electric field lines, electric field due to a point charge, Electric dipole, electric field due to a dipole at axial and equatorial positions, torque on a dipole in a uniform electric field. c) Electric Flux - Statement of Gauss's law and its application to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside) d) Electric Potential - Potential difference, electric potential due to point charge, a dipole and system of charges, equipotential surfaces, electric potential energy of a system of two point charges and of electric dipole in an electrostatic field. e) Conductors and insulators, free charges and bound charges inside a conductor, Dielectrics and electric polarization, Capacitors and Capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.	potential difference versus current • To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material	Able to understand about the electic field and dipole due to axial and equatorial position. Able to understand about flux and its application. Able to understand about the capacitance and and its conncetion in series and parallel. Able to understand about the energy stored in a capacitor.
June	18	Unit – II : Current Electricity Electric current, flow of electric charges in a metallic conductor, drift velocity Mobility and their relation with electric current, Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, Carbon resistors, colour code for carbon resistors, series and parallel combination of resistors, temperature dependence of resistance. b) Emf and potential difference of a cell, Internal resistance of a cell, combination of cells in series and parallel.	• To verify the laws of combination (series) of resistance using meter bridge • To compare the emf of two primary cells using potentiometer	Able to understand about the drift velocity Able to understand about Ohm's law and its V-I characteristics Able to understand about carbon resistors and its colour coding and its connection in series and parallel Able to understand about the Emf and potential difference of cell.

		c) Kirchhoff's Rules and simple applications, Wheatstone bridge, Metre bridge, d) Potentiometer - Principle and its application to measure potential difference and for comparing e.m.f. of two cells, measurement of internal resistance of a cell.		Able to understand about the Potentiometer and wheatstone bridge.
July	25	UNIT - III : Magnetic Effect of Current & Magnetism a) Concept of Magnetic field, Oersted's experiment b) Biot-Savart law and its application to current carrying circular loop c) Ampere's circuital law and its application to infinite long straight wire, straight and toroidal solenoid. Force between two parallel current – carrying conductors – definition of ampere. d) Force on current carrying conductors in a uniform magnetic field. Force between two parallel current, carrying conductors, definition of ampere.Torque experienced by current loop in uniform magnetic field, moving coil galvanometer – its current sensitivity and conversion to ammeter and voltmeter. Force on a moving charge in a uniform magnetic and electric fields, Cyclotron f) Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along the axis and perpendicular to its axis, Torque on a magnetic dipole (bar magnet) in a uniform magnetic field, Bar magnet as equivalent solenoid. Magnetic field lines, Earth's magnetic	• To determine the internal resistance of a given primary cell using potentiom eter • To determine resistance of a galvanom eter by half-deflection method and to find its figure of merit.	Able to understand about the concept of magnetic field. Able to understand about the Ampere's circuital law and its application. Able to understand about the force on current carrying conductors in a uniform magnetic field. Able to understand about the Galvanometer and its sensitivity. Able to understand about the Para,Dia and Ferro magnatic substances.

		field and magnetic elements, Para, Dia and Ferro magnetic substance with examples, Electromagnets and factors affecting their strengths, permanent magnets. transformer		
Aug.	23	Unit – IV : Electromagnetic Induction & Alternating Currents a) Electromagnetic Induction; Faraday's laws, induced e.m.f. and current, Lenz's Law, Eddy currents, self and mutual induction. b) Alternating currents, Peak and RMS value of alternating voltage/current, reactance and impedance, LC oscillations (qualitative treatment), LCR series circuit, resonant circuit, power in AC circuits, wattles current. AC generator and Need for displacement current. Unit – V : Electromagnetic Waves Electromagnetic waves and their characteristics (qualitative ideas only), Transverse nature of electromagnetic waves, Electromagnetic spectrum (radio waves, micro waves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.	• To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and toverify the same • To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same	Able to understand about the electromagnetic induction. Able to understand about the Faraday's law and induced Emf. Able to understand about the peak and RMS value of alternating current/voltage. Able to understand about the LC oscillations and LCR circuit. Able to understand about the waves. Able to understand about the spectrum
Sept.	23	Revision Half Yearly Examination Unit – VI : Optics a) Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and its applications, optical fibres , refraction at spherical surfaces, thin lens formula, lens maker's formula, magnification, lenses, power of a lens, combination of thin lenses in contact, refraction and dispersion of light through a prism.	• To find the value of v for different value of u in case of a concave mirror and to find the focal length • To find the focal length of a convex mirror,	Able to understand about the reflection, refraction Able to understand about mirror and lens And lens makers formula. Able to understand about the scattering of light and optical instruments. Able to understand about reflection and

		b) Scattering of light - blue colour of the sky and reddish appearance of the sunrise and sunset. c) Optical instruments: Microscope and astronomical telescopes (reflecting & refracting) and their magnifying powers. d) Wave Optics: Wave front and Huygens principle, reflection and refraction of plane waves of a plane surface using wave fronts, proof of laws of reflection and refraction using Huygens' principle e) Interference : Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light (Smart Board to explain Huygens principle , wavefront , YDSE interference fringes, diffraction ,Polarization) Diffraction due to single slit, width of central maximum, resolving power of microscope and astronomical telescope. f) Polarization: plane polarized light, Brewster's law, use of plane polarized light and polaroids	using a convex lens.	refraction on the basis of wave theory and Young's double slit experiment. Able to understand about the coherent and incoherent source Able to understand about the Astronomical telescope and microscope. Able to understand about the polarization.
		Unit – VII : Dual Nature of Matter and 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, Davisson- Germer experiment (Experimental details should be omitted, only conclusion should be explained).	• To find focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v. • To find the focal length of concave lens using a convex lens	Able to understand about the photoelectric effect. Able to understand about the debroglie hypothesis.
Oct.	19	Unit – VIII : Atoms and Nuclei Alpha – particle scattering experiment, Rutherford's model	• To determine angle of minimum	Able to understand about the Alpha particle scattering experiment

		of atom, Bohr's model, energy levels, hydrogen spectrum.Composition and size of the nucleus, atomic masses,isotopes, isobars, isotones, Radioactivity rays and their properties, radioactive decay law, Mass –energy relation, mass defect, binding energy per nucleon, itsvariation with mass number, nuclear, fission and fusion.	deviation for a given prism by plotting a graph between angle of incidence and angle of deviation	Able to understand about the Rutherford's and Bohr's model of atom. Able to understand about mass energy relation, nuclear fission and fusion.
Nov.	20	Unit – IX : Electronic Devices : Energy bands in solids (qualitative ideas only), conductors,insulators, Semi conductors, semi-conductor diodes, I-Vcharacteristics in forward and reverse bias, diode as a rectifier, special purpose of p-n junction diodes .L E D,, photodiodes, solar cell and Zener diode and their characteristics, Zener diode as a voltage regulator.	• To determine refractive index of a glass slab using a travelling microsco pe.	Able to understand about the conductor, insulator and semiconductor. Able to understand about the Forward and reverse biased and its V-I characteristics. Able to understand about the L.E.D. , solar cell.
Dec	22	Revision for MOCK-I , Revision of complete syllabus, Sample papers and CBSE model question paper discussion		
JANUARY	20	REVISION+ MOCK-II		
FEBRUARY	22	COMMENCEMENT OF BOARD EXAM		

INFORMATION TECHNOLOGY(802)

MONTHS	NO. WORKING DAYS	TOPICS TO BE TAUGHT	LEARNING OUTCOMES
APRIL	23 DAYS	**FUNDAMENTAL OF JAVA PROGRAMMING** Introduction to java , object oriented programming , java language elements , operators , control flow , array , class design	**Able to understand JAVA Programming language with Object oriented programming concept.**
MAY	15 DAYS	**EXCEPTION HANDLING IN JAVA** Exception handling , Assertions, Threads	**Students can able to understand the Java programming with the concept of exception handling.**
JUNE	18 DAYS	**ARRAYS & STRING IN JAVA**	**Students can able to understand the Java programming with the**

		Wrapper classes , string manipulation	**concept of two dimensional & 3 dimensional Arrays.**
JULY + AUGUST	25+23 DAYS	**OPERATING WEB BASED APPLICATIONS-II** Project management – Web based application development. Case Study : Online Game , Online Quiz , Online bill calculator	**Students can able to understand the concept of Operating web based application with certain examples like digital payment & digital marketing.**
SEPTEMBER	23 DAYS	**HALF YEARLY REVISION** **+** **QUESTION PAPER DISCUSSION** **+** **INTRODUCTION TO DATABASE**	**Revision + Half yearly exam**
OCTOBER	19 DAYS	**UNIT -1 DATABASE CONCEPTS-RDBMS TOOL** Basics of RDBMS, SQL creating and opening database, Creating and populating tables, Modifying the content and structure of table. Ordering and grouping. Operating with multiple tables**.**	**Able to understand the concept of database with the help of Structured query language like Creating and populating tables, Modifying the content and structure of table.**
NOVEMBER	20 DAYS	**EMPLOYABILITY SKILLS** Communication skills, Self-Management Skills, Information and communication Technology skills, Entrepreneurial skills , Green Skills.	**Able to understand certain skills like Basic etiquettes and business language of communication.**
DECEMBER	22 DAYS	**REVISION + MOCK-I**	
JANUARAY	20 DAYS	**MOCK-II**	
FEBRUARY	22 DAYS	**COMMENCEMENT OF ANNUAL EXAM**	

FINE ARTS

SL NO.	MONTH	NO OF WORKING DAYS	TOPIC	ACTIVITY	LEARNING OUTCOMES

1	April	23	The Rajasthanni and Pahari School of miniature painting. • Introduction	Water color drawing on paper.	Element of art explain in details.
2	May	15	The rajashthani school . • Origin and development • Sub –school • Main feature of Rajasthani shool.	Glass painting.	Encourages creative expression of observation in art.
3	June	18	The pahari school . • Origin and development • Sub –school • Main feature of pahari shool.	Poster making.	Students will be Able to observe And draw a variety Of natural.
4	July	25	The Mughal School of miniature painting. • Origin and Development • Main features of Mughal School • Period	Still life drawing by pencil shading.	Development of skill and technique.
5	August	23	The Deccan School of Miniature Painting • .Origin and Development • .Main Features of Deccan School • .Sub-school	Canvas painting by acrylic colour.	How to make canvas Painting step-by-step.
6	September	23	REVISION + QUESTION PAPER DISCUSSION + The Bengal school of Painting • .Origin and Development • .Main Features of Bengal School	Free hand drawing .	Improvement hand coordination.
7	October	19	Modern trends in Indian Art Paintings: • Rama Vanquising the Pride of the Ocean • Mother & Child	New year card making.	Development of Fine motor skill.

			• Haldi Grinders • Mother Teresa		
8	November	20	Graphics Print • Children • Devi • Off Walls • Man ,Woman and Tree Sculptures: • Triumph of labour. • Santhal family • Cries Un-Heard & Ganesha	Revision.	
9	December	22	REVISION + MOCK-1	Revision.	
10	January	20	PRACTICAL+ MOCK-2	Revision.	
11	February	22	COMMENCEMENT OF BOARD EXAM		

PHYSICAL EDUCATION

Class 12 Subject: Physical education				
Month	W.D	Topic to be taught	Activities	Learning outcomes

V.V.P.S
Architect of Mankind

April + May	38 days	**Unit-1** **Planning in sports** • Meaning and objectives of planning • Various committees and their responsibilities • Tournaments – knockout league • Draw a fixture • Specific sports programs. **Unit -2** **Sports and nutrition:** • Balance diet and nutrition • Nutrition and non nutrititive components of diet • A healthy weight **Unit-3** **Yoga and life style** Asanas as preventive measures	# khokho (Learn the basic and advanced skill of the above game)	Students know about how to plan to achieve a goal • Know to make fixture of matches in knockout and league tournament • Know about the sports programs. • Know about the balance diet and macro -micro nutrients • know about the different components of diet • know about the pitfalls of dieting and food myths • students known how to prevent obesity ,diabeteis ,asthama, hypertension ,backpain with the help of yoga asanas

Architect of Mankind

June + July	18+25=43	**Unit-4** **Physical education and sports for cwsn** • Concept of disability and disorder • Types of diabeties their cause and nature • Types of disorder their causes and nature • Disability etiquettes **Unit -5** **Children and women in sports** • Strategies to make physical activities accessible for children with special needs • Motor development • Different stages of growth and development • Postural deformities • Special consideration • Female athlete triad	# kabaddi (learn the basic and advanced skill of the above game)	• know about the difference b/w disability and disorder • their causes and nature • know about the etiquettes • learn the strategies to make physical activities for children with special needs • know about the motor development and force affecting it • Lean exercise guideline for growth and development Know about the different postural deformities and corrective measures.
Aug + Sept.	23+23=46	**REVISION + HALF YEARLY PAPER DISCUSSION** + **Unit-6** **Test and measurement and in sports** Motor fitness test **Unit-7** **Physiology and injuries in sports physiological** • Cardio-respiratory system • Muscular system • Physiological changes • Sports injuries • Treatment • First aid	# General fitness and chess (Learn about warming up and free hand exercise)	• Learn about the motor fitness test and the items it includes and how to take a fitness test • Know the components of physical fitness • Learn the effects of exercises on cardio respiratory system • Know about the changes due to ageing • Learn about the injuries in sports Learn about the first aid

Oct + Nov	19+20=39	**Unit -8** **Biomechanics and sports** • Biomechanics in sports • Types of movements • Newton law of motion • Friction and sports **Unit-9** **Psychology and sports personality** Motivation Aggression in sports **Unit 10** **Training in Sports** Concept of Talent Introduction to SportsTraining Cycle Types & Methods toDevelop Types & Methods toDevelop Circuit Training	volleybal,basketball (Learn the basic and advanced skill of the above) # Practical (Badminton advanced skill and terminology	• Known the meaning and importance of biomechanics • Learn about the different types of movements • Learn about the application in sports of Newton's law of motion • Know the definition and types of personality • Learn about the types of motivation • Learn about the aggression and how to control the aggression in sports
DEC	22	**REVISION+ MOCK-1**		
JAN	20	**MOCK-2 + PRACTICAL**		
FEB	22	**COMMENCEMENT OF BOARD EXAM**		

SUBJECT: BIOLOGY BOOK: NCERT					
Months	W. D.	Chapter	Topic	Learning Outcomes	Activities/Practical
April	23	**Chapter-1: Sexual Reproduction in Flowering Plants**	lower structure; Development of male and female gametophytes; Pollination-types, agencies and examples; Outbreeding devices; Pollen-Pistil interaction; Double fertilization; Post fertilization events-Development of endosperm	1. differentiates organisms, phenomena and processes based on certain characteristics and salient features, such as, reproduction in organisms, reproductive parts of commonly available flowers; autogamy and geitonogamy, 2. applies scientific terminology for organisms, processes,	1. Study pollen germination on a slide. 2. Flowers adapted to pollination by different agencies (wind, insects, birds). 3. Controlled pollination - emasculation, tagging and bagging.

			and embryo, Development of seed and formation of fruit; Special modes-apomixis, parthenocarpy, poly embryony; Significance of seed and fruit formation.	and phenomena based on internationally accepted conventions such as, parthenocarpic fruits polyembryony parthenogenesis, pericarp, microsporangia, geitonogamy, aluminous seeds, apomixis, 3. Draws labelled diagrams, flow charts, concept maps, graphs, such as, reproductive parts of flowers.	
May	15	**Chapter-2: Human Reproduction**	Male and female reproductive systems; Microscopic anatomy of testis and ovary; Gametogenesis-spermatogenesis & oogenesis; Menstrual cycle; Fertilisation embryo developmen t upto blastocyst formation, implantation; Pregnancy and placenta formation (Elementa ry idea); Parturition (Elementary idea); Lactation (Elementary idea).	1. relates processes and phenomena with causes and effects, such as menstruation and hygiene; pregnancy and embryonic development,	1. identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice). 2. T.S. of blastula through permanent slides (Mammalian).
June	18	**Chapter-3: Reproductive Health**	Need for reproductive health and prevention of sexually transmitted diseases (STD); Birth control – Need and Methods, Contraception and Medical Termination of Pregnancy (MTP); Amniocentesis; Infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (Elementary idea for general awareness).	1.applies scientific terminology for organisms, processes, and phenomena based on internationally accepted conventions such as, medical termination of pregnancy (MTP); Acquired Immuno Deficiency Syndrome (AIDS);	

		Chapter-13: Organisms and Populations	Organisms and environment: Habitat and niche, Population and ecological adaptations; Populati on interactions- mutualism, competition, predation, parasitism; Population attributes growth, birth rate and death rate, age distribution.	1.explains efficiently systems, relationships, processes and phenomena, such as; adaptations in animals living in xeric and hydric conditions, 2. makes linkages at the interface of Biology with other disciplines by relating various interdisciplinary concepts such as;, population growth curve. 3. applies/ makes efforts to conserve environment realizing the interdependency and inter-relationship in the biotic and abiotic factors of environment, such as, by appreciating use of weed plants in the study	
July	25	**Chapter-14: Ecosystem**	Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy; nutrient cycles (carbon and phosphorous); ecological succession; ecological services - carbon fixation, pollination, seed dispersal, oxygen release (in brief).	1.applies scientific terminology for organisms, processes, and phenomena based on internationally accepted conventions such as, biomass; ecological pyramids; biomagnifications, 2. draws labelled diagrams, flow charts, concept maps, graphs, such as, decomposition cycle in terrestrial ecosystem, nutrient cycles,; ecological pyramids.	1.Study the plant population density by quadrat method. 2. Study the plant population frequency by quadrat method
		Chapter-15: Biodiversity and its Conservation	concept of biodiversity; patterns of biodiversity; importance of biodiversity; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, national	1. . analyses and interprets graphs and figures such as, species-area relationship graphs, 2. exhibits ethics and values of honesty, objectivity, rational thinking and freedom from myth and superstitious 88 beliefs while taking decisions, respect for life, etc., such as, reports and records experimental data accurately, ethical	1. Models specimen showing symbolic association in root modules of leguminous plants, Cuscuta on host, lichens.

			parks, sanctuaries and Ramsar sites.	arguments for conservation of biodiversity and conducts plantation drive of endangered species?	
August	23	**Chapter-5: Principles of Inheritance and Variation**	Mendelian Inheritance; Deviations from Mendelism- Incomplete dominance, Co-dominance, Multiple alleles and Inheritance of blood groups, Pleiotropy; Elementary idea of polygenic inheritance; Chromosome theory of inheritance; Chromosomes and genes; Sex determination - in humans, birds, honey bee; Linkage and crossing over; Sex linked inheritance - Haemophilia, Colour blindness; Mendelian disorder in humans - Thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.	1.applies scientific terminology for organisms, processes, and phenomena based on internationally accepted conventions such as, mutation; pleiotropy; sex determination; syndrome; 2. explains efficiently systems, relationships, processes and phenomena, such as; sexually transmitted infections, mendalian and chromosomal disorders, human genome project, replication of retrovirus, 3. makes linkages at the interface of Biology with other disciplines by relating various interdisciplinary concepts such as; using mathematical models of monohybrid and dihybrid cross; pedigree analysis; molecular basis of DNA and RNA,	1. Prepare a temporary mount of onion root tip to study mitosis 2. Mendelian inheritance using seeds of different colour/sizes of any plant. 3. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour blindness
		Chapter-6: Molecular Basis of Inheritance	Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; Transcription, genetic code, translation; Gene expression and regulation - Lac Operon; Genome and human genome project; DNA fingerprinting.	1.differentiates organisms, phenomena and processes based on certain characteristics and salient features, such as transcription and translation;; genotype and phenotype; 2. describes contribution of scientists/researchers all over the world in systematic evolution of concepts, scientific discoveries and inventions in the field of biology based on historical scientific	1. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

				events/ timelines etc; such as; Mendalian genetics to Morgans work for linkage and recombination, Hershey and Martha Chase's experiment to establish the concept that the DNA is genetic material, Watson and Crick model of DNA, etc	
September	23	**Chapter-7: Evolution**	Origin of life; Biological evolution and evidences for biological evolution (Paleontological, comparative anatomy, embryology and molecular evidence); Darwin's contribution, Modern Synthetic theory of Evolution; Mechanism of evolution - Variation (Mutation and Recombination) and Natural Selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; Adaptive Radiation; Human evolution.	1.differentiates organisms, phenomena and processes based on certain characteristics and salient features, such as, divergent and convergent evolution; homologous and analogous organs;	1. Flash cards models showing examples of homologous and analogous organs.
			Revision+ Half yearly question paper discussion		
October	19	**Chapter-8: Human Health and Diseases**	Pathogens; parasites causing human diseases (Malaria, Filariasis, Ascariasis, Typhoid, Pneumonia, common cold, amoebiasis, ring worm); Basic concepts of immunology - vaccines; Cancer, HIV and AIDs; Adolescence, drug and alcohol abuse.	1.differentiates organisms, phenomena and processes based on certain characteristics and salient features, such as, cytokinesis in plant and animal cells, innate and acquired immunity, vaccination and immunisation, 2. relates processes and phenomena with causes and effects, such as, diseases with symptom.	1. Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides or specimens. Comment on symptoms of diseases that they cause.

		Chapter-10: Microbes in Human Welfare	In household food processing, industrial production, sewage treatment, energy generation and as biocontrol agents and biofertilizers. Antibi otics; production and judicious use.	1.appreciates technological applications and processes in Biology towards the improvement in the quality of life and sustainable development, such as; microbial fermentation for industrial production, waste water treatment, biogas production technology,	
November	20	**Chapter-11: Biotechnology - Principles and Processes**	Genetic engineering (Recombinant DNA technology).	1. applies scientific terminology for organisms, processes, and phenomena based on internationally accepted conventions such as, plasmid; vectors. 2. Makes linkages at the interface of Biology with other disciplines by relating various interdisciplinary concepts such as; recombinant DNA technology.	
		Chapter-12: Biotechnology and its Application	Application of Biotechnology in health and agriculture: Human insulin and vaccine production, gene therapy; Genetically modified organisms- Bt crops; Transgenic Animals; biosafety issues, biopiracy and patents.	1.applies scientific terminology for organisms, processes, and phenomena based on internationally accepted conventions such as, genetically modified organisms (GMO);	
December	22	Revision Pre- board Examination	Solve Previous years papers + Other Sample papers	recapitulate different topics clarify doubts	
January	20	Subject Enrichment Activity/Practical + Revision	Solve Previous years papers + Other Sample papers	Recall and remember all the concepts. Understand and evaluate the errors and mistakes done in the paper and would be able to improve upon the same through correction.	

February	22	Revision Pre- board Examination	Solve Previous years papers + Other Sample papers	Revise and reinforce all the concepts already learnt.	
March	23	Board Exams		Recall and remember all the concepts.	

ENGLISH CORE (301)

TEXT BOOKS: FLAMINGO & VISTAS (NCERT)

REFERENCE BOOKS: FULL MARKS ASSIGNMENTS IN ENGLISH FOR CLASS XII
WRITING BOOK
(ARIHANT)

Month	Working Days	Chapter/Topic	Activities	Learning Outcome
April	23	1. Flamingo-P-1-My Mother at 66	1.Warm up questions (on Ageing) 2. PPT presentation on phases of human life.	To enable the students to i) realise that ageing is a natural process and is going to envelope one and all ii) identify the figures of speechand enhance their vocabulary. iii) appreciate the theme and the style of writing of the poet. To be able to comprehend the poem. Students will be able to i) understand that language is a key to prison ii) know the meanings of new phrases iii)know the importance of mother tongue iv) understand the wastefulness of war v) enhance thinking, analytical, literary skills vi) understand linguistic chauvinism. Learn to write to the point business letters in appropriate formal language, precise form and content pertaining to various situations.
		2. Flamingo-L-1- The Last Lesson	1. Warm up questions on war and importance of mother tongue. 2. Report Writing – Franco-Prussian war 3. Subject Integration – link to the map of Germany and France of then times. 4. Craft/Design a flag using the colour of French & German Flags.	
		3. Application for a Job	1. Collect Sample Resume/CV 2. Practice Questions.	
May	15	1. Vistas-L-1-The Third Level	1. Comprehension questions will be asked to test the understanding.	Comprehension questions will be asked to test the understanding. To enable the students toi) communicate their ideas with a lot of conviction. ii) appreciate the theme and the message conveyed. iii) sensitizes the reader to the miserable plight of the poorest of the poor iv) understand the urgent need to end the vicious circle of exploitation through education, awareness, co-operative organization and empowerment v) focus on the use of figures of speech in writing.
		2. Flamingo-L-2-Lost Spring	1. Warmup questions on Dreams of the poor, Problems of child labour, Education is the only weapon to better the lot. 2. Poster Making (Art Integration) – Create a poster on 'Child Labour Eradication. 3. Comprehension questions to test the understanding.	

		3. Advertisement Writing - Classified Adv.- To Let, Tuitions, Lost and Found, Kennel, Travel & Tours, Matrimonials	4. Subject Integration – Social Values and constrains (Article Writing) 1. Collection – Advertisement Samples. 2. Art Integration – Design Advertisements. 3. Subject Integration – History of Advertisements.	1. To Learn to Write Advertisements (Classifieds & Commercials) 2. Role of Advertisements in day to day life.
June		1. Vistas-L-2- The Tiger King 2. Vistas-L-3- The Enemy	1. 'GD - 'Count Your Blessings' Individual presentation - summarise the story in your own words. Paint - paint the portrait of the Tiget King 1. Warm up questions on war, enemy, day to day life and treatment towards people you don't like. 2.	1. To learn acceptance. Develop problem solving skills. To be able to summarise the story and develop a synopsis. 1. To learn acceptance. Develop problem solving skills. To be able to summarise the story and develop a synopsis.

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July	18	1. Writing Skills - Invitation - formal, informal and reply to invitation 2. Comprehension (Unseen Passages) 3. Flamingo-L-3-Deep Water 4. Flamingo-L-4-Rattrap 5. Flamingo-L-8-Going Places	Display - Showing various types of invitations (formal and informal) Collection - collection of different types of invitations. Analysis - analysing and listing the points important from the point of view of invitations and replies to invitations. Collection – of unseen passages from newspapers or magazines Debate - What could be fun for one may turn out to be a lifetime scary experience for the other. About the author - connect to the real story of the author. Reading - read the chapter aloud. Crafting - craft a rattrap Classroom discussion - suitability fo the title of the chapter. Central theme of the chapter - use of metaphor to understand the concept. Project File – Research about two not so popular communities of the country and present their characteristics in the form of a project. Article Writing – to express your opinion on a given matter. Comprehension exercises to help drill in understanding of chapter	To recollect (through revision), the format of formal and informal letters. To be able to apply the previously acquired knowledge regarding letters, while writing invitations (formal and informal) and replies to invitatioins. To understand the style used while framing invitations. To learn to analyse by reading and answer the questions based on the analysis of the passage read. To facilitate making connections between similar situations in different storylines/life experiences through the genre of theatre/drama that is more credible and realistic to comprehend the mother's stereotype and understand her significant role in family bonding. To develop problem solving skills. To enhance the reading skills. To skimm and scan the words according to their meaning. To be able to express through discussions. To get an insight into the life and works of the middle class caught in a web of mediocrity and the desire of young ones dreaming to escape it. An objective study to assess the form and style of tackling issues of social discontent. Leading to an escapist mind set. Acquire an ability to form opinions and express them with clarity.
August		1. Vistas-L-3-Journey to the End of the Earth	About the author - background information. Speech - on 'Facing challenges' and 'Acceptance' Presentation - PPT presentation on the story	Fostering determination, courage, strength and valour through anecdotes

		2. Flamingo-L-5-Indigo 3. Falmingo-Poem-2-Keeping Quiet 4. Writing Skills – Notice Writing	Metaphor - Connecting to the chapter with the help of a powerpoint presentation. Report Writing - Incidents during that period of history About the author – presentation Collection - collect notices Group activity to focus on the 5 Ws of notice writing.	Importance of Silence. Fostering Individuality. Inculcating Leadership Skills. To Describe the human predicament of temptation. To deal with the fast pacing world and its changes. To infer and answer contextual questions. Format, key points to be remembered. Importance of notices.
September	25	1. Flamingo-Poem 3-A Thing of Beauty Vistas-L-5-On the Face of It 2. Writing Skills-Articles and Report Writing	Article Writing - on The theme of the poem 'Nature's Beauty) Group activity - Poetry writing (on nature) Class discussion - on the title of the poem. Video – Presentation on people with challenges (eg: Stephen Hawking) Discussion – title of the chapter Reading – a loud (with correct tone, modulation, pronunciation and expression) Writing – write an article on “Let’s Face it” Newspaper articles - class discussion on them. Visual representation of the key points of writing.	To be able to read and infer. Nature - a perennial source of joy and happiness. Recitation - with proper tone. Strengthening of vocabulary. To draw a comparative study between human life and natur Would be able to apply literal, interpretative and critical level in analyzing a short story. Would be able to learn problem solving skills. To gather positive thinking skills. About the author and the background of the story. Relate to the current scenarios

		Conduction of Half Yearly Examination & Revision.		To develop interest towards writing. Understand format and the key points to be remembered. To be able to employ her communicative skills, with a range of styles, and engage in a discussion in an analytical and creative manner. Learn to derive information from facts.
October		1. Flamingo-L-6-Poets and Pancakes	About the author - background information. What's in the box activity - to take up the theme of the chapter as a point of discussion. Solo Presentation - summarising the chapter. Group work - reflecting on the suitability of the title of the chapter. Video Presentation - History of Gemini Studios.	To get acquainted to the procedures involved in film and TV series production. To understand the artistic element involved in the field of producing sereals, movies or documentaries. .
		2. Vistas :- Memories of Childhood	Role Play – Presentation of characters from stories studied Comprehend story through drilling exercises and summary.	Learn to appreciate one's stand against social and racial indiscrimination and support social justice
		3. Flamingo-Poem-4-A Roadside Stand	Read out poem on similar theme. Figures of Speech with examples. Powerpoint presentation.	Development of optimistic attitude To revise the poetic devices used in the poem. To Infer from the given text and able to anser reference to context questions.
November	23	1. Vistas – a) The cutting of my long hair b) we too are human beings		Feel a sensitivity to empathize with issues that c To read to infer and summarise

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		1. Flamingo-L-7- The Interview	Video Presentation - on famous interviews. Role play - focusing on key points of an interview Article writing - role of interviews	To understand the basic concepts related to interviews. To be able to look at journaism as a career option. To understand the flow of an interview. oncern humanity
		2. Flamingo-Poem-5-Aunt Jennifer's Tigers	Class Discussion - The title and the theme of the poem. Video Presentation - of the poem and the adversities borne by the females in the society. Recitation - aloud. Poetic Devices - identifying and listing.	To be able to infer and answer contextual questions. To identify the poetic devices. To understand the comparisons drawn in the poem. To relate to the adversities faced by women in married life.
		3. Writing Skills – Letter to Editor and Letter on Verbal/visual inputs	Writing Sample letters Practicing from previous year's question papers	To write to the point business letters in appropriate formal language, precise form and content pertaining to various situations.
December		Revision		
January	23	Pre-Board Examination		
February	22	Board Examination		
March	23	Board Examination		

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