

DELHI PUBLIC SCHOOL

Bokaro Steel City

TERM AND MONTH-WISE SPLIT-UP SYLLABI OF CLASS – XII FOR THE SESSION 2018-2019

SUBJECT – ENGLISH(CORE)

TEXT BOOK – 1. Literature Reader – Flamingo

2. Supplementary Reader – Vistas

3. Extended Reading – Silas Marner (Novel)

MONTH	W.D	BOOK/ARE A	CHAPTER	ACTIVITIES	REAL LIFE SITUATIONS
April	21	Flamingo-	1. The last lesson 2. Lost spring	1. Inclusive teaching German teacher to brief about German Language. 2. Project on Child Abuse	Fostering respect for differences and language. Freedom promotes creativity.
		Vistas -	1. The Tiger king		
		Writing Section	1. Note making 2. Classified Advt. 3. Notice 4. Report Writing	.	Poster making on Conservation of wildlife.
May	08	E.R.- Flamingo	Silas Marner Ch 1 & 2 1. An Elementary School Classroom in a Slum.	Article writing- 'Education for all.'	
June	15	E.R.- Flamingo	Silas Marner-3 1. Deep water	Inclusive- To invite the swimming instructor to tell the ways to overcome fear.	Fostering determination, courage and valour through anecdotes. To foster humanity against pseudo-nationalism and war
		Vistas E.R. -	1. The Enemy Silas Marner ch-4,5& 6 1. Factual description 2. Display Advt.		
July	21	Writing section Flamingo	1. The Rattrap 2. Indigo Keeping quiet	Discussion on the metaphor rattrap. History teacher to be invited to speak on indigo plantation and Champaran episode.	To describe the human predicament of temptation
		E.R.-	Ch- 7, 8, 9, 10 & 11 1.		
		Vistas	Should wizard hit mommy? Job Application, Letter placing order	To make a project –the world of fantasy is always different from the world of reality.	Importance of silence. Fostering individuality.-
August	22	Flamingo Vistas	1. A thing of beauty 1. On the face of it, 2. Evans tries an O level.	Article – Attitude determines Altitude.	Nature a perennial source of joy & happiness. To discuss on real life situations of crime and insensitivity
		E.R.-	Ch-12,13, 14, 15 1. Invitation 2. Letter seeking enquiry. 3. Letter lodging complain,		
Writing section					
September	19		Revision Half Yearly Examination		
Oct	15	Flamingo Vistas	Going Places Aunt Jennifer's Tgers Memories of Childhood	Role models are for motivation not be imitated	Fostering the idea that education is the most important tool against prejudice
		Writing section ER	Invitations Ch 16 & 17	Speech – Untouchability is a crime.	
Nov	23	E.R.-	Chs- 18,19, 20, 21 and conclusion	Revision & Pre Board Exam	

Subject : Mathematics

Text Books : 1. **Mathematics Part 1 and Part 2** - Textbook for Class XII(NCERT)

Reference Books: 1. Mathematics Class XII(Volume I and II) by Manjeet Singh,

Full Marks Pvt. Ltd.

2. Mathematics, A text book for CBSE XII (Volume I & II) by Gupta and Bansal, Sultan Chand Educational Publishers.

3. Mathematics XII by R P Singh (Volume I & II) V K Global Publications

Pvt.Ltd

Month	WD	Topics to be taught	Values
April	21	<p><u>Relations and Functions:</u> Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations</p> <p><u>Inverse Trigonometric Functions:</u> Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.</p> <p><u>Matrices:</u> Concept, notation, order, equality, types of matrices, zero matrix and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices, Addition, multiplication and multiplication with a scalar, simple property of addition, multiplication and multiplication with a scalar. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).</p>	Team Work
May	05	<p><u>Determinants:</u> Determinant of a square matrix (up to 3 x 3 matrices), properties of determinants.</p>	Resolution
June	15	<p><u>Determinants@cntd.):</u> Minors co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix</p> <p><u>Continuity and Differentiability:</u> Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretation.</p>	Responsibility
July	22	<p><u>Applications of Derivatives:</u> Applications of derivatives: rate of change of bodies, increasing/decreasing functions, tangents and normals, use of derivatives in approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).</p>	Discipline

		<p><u>Indefinite Integrals:</u> Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.</p> $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{a^2 - x^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c},$ $\int \frac{dx}{\sqrt{ax^2 + bx + c}}, \int \frac{(px + q) dx}{ax^2 + bx + c}, \int \frac{(px + q) dx}{\sqrt{ax^2 + bx + c}}$ $\int \sqrt{X^2 \pm a^2} dx, \int \sqrt{a^2 - x^2} dx, \int \sqrt{aX^2 + bx + c} dx,$ $\int (px + q) \sqrt{aX^2 + bx + c} dx$	
August	22	<p><u>Definite Integrals:</u> Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.</p> <p><u>Applications of the Integrals:</u> Applications in finding the area under simple curves, especially lines, circles/parabolas/ellipses (in standard form only), Area between the two above said curves (the region should be clearly identifiable).</p> <p><u>Differential Equations:</u> Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, solution of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type: $\frac{dy}{dx} + py = q,$ where p and q are functions of x or constants. $\frac{dx}{dy} + px = q,$ where p and q are functions of y or constants.</p>	Caring
September	01 09 06 03	<p>Differential equation contd. Revision for Half yearly examination Half-Yearly Examination. Discussion of Question Paper.</p> <p><u>Vectors:</u> Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors).</p>	Respect for Law
October	18	<p><u>Vectors:(contd.):</u> position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical interpretation and application of scalar(dot) product of vectors. Vector (cross) product of vectors. Scalar triple product of vectors.</p> <p>Three - dimensional Geometry:</p>	Sharing

		Direction cosines and direction ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes, (iii) a line and a plane. Linear Programming: Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, (bounded and unbounded) feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).	
November	16	Probability: Conditional probability, multiplication theorem on probability, independent events, total probability, Baye's theorem, Random variable and its probability distribution, mean and variance of random variable. Repeated independent (Bernoulli) trials and Binomial distribution. Revision for Pre-Board Examination.	Responsibility
December	20	Revision for Pre-Board Examination Pre-Board Examination 2018-2019 Discussion of pre-board question papers, CBSE sample papers.	
January	17	Comprehensive revision for board examination 2019.	

Subject : Physics

Prescribed Textbooks : 1. Physics for Class XII NCERT
2. Physics Laboratory Manual -XII (Arya Publications)

Reference Books : 1. New Simplified Physics (Vol. I & II) by S L Arora –Dhanpat Rai& Co.
2. Concept of Physics by H C Verma (Vol I & II)-Bharati Bhawan
3. Physics by Resnick and Halliday – Resnick , Halliday and Krane

Month	W.D	Chapters / Topics Taught	Projects/Activity/ Expt.
April + May	20 + 06	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. 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. Smart Board used to show the equipotential surfaces. e) Conductors and insulators, free charges and bound charges inside a conductor, Dielectrics and electric polarization, Capacitors and Capacitance, combination of capacitors	1. To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material 2. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current. 3. To verify the laws of combination (series/parallel) of resistance using meter bridge. 4. To compare the emf of two primary cells using potentiometer. 5. To determine the internal resistance of a

in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.

given primary cell using potentiometer.

Unit – II : Current Electricity :

- a) Electric current, flow of electric charges in a metallic conductor, drift velocity.

June 15 **Current Electricity (Contd.):**

- a) 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.

- 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.

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.

- e) Force on a moving charge in a uniform magnetic and electric fields, Cyclotron,

6. To find the value of v for different value of u in case of a concave mirror and to find the focal length,

7. To find the focal length of a convex mirror, using a convex lens.

Smart Board to explain Kirchhoff's Rules, and Potentiometer.

Smart Board to explain direction of magnetic field.

Smart Board used to explain direction of force on a charge and a conductor moving in a magnetic field

July 22 **UNIT - III : Magnetic Effect of Current & Magnetism (contd.):**

- 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 field and magnetic elements, Para, Dia and Ferro magnetic substance with examples, Electromagnets and factors affecting their strengths, permanent magnets.

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, wattless current. AC

8. To find focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$.

9. To find the focal length of concave lens using a convex lens.

Smart Board to explain direction of induced emf.

Smart Board to explain the graph and phasor diagram related to ac circuit.

		generator and transformer.	Smart Board to explain em spectrum.
		<u>Unit – V : Electromagnetic Waves :</u>	
		a) Need for displacement current.	
		b) 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.	10. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
			11. To determine refractive index of a glass slab using a travelling microscope.
			12. To find refractive index of a liquid by using (i) concave mirror (ii) convex lens and plane mirror.
August	22	<u>Unit – VI : Optics :</u>	
		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.	Smart Board to explain optical instrument
		b) Scattering of light - blue colour of the sky and reddish appearance of the sunrise and sunset.	13. To draw the I-V characteristics curve of a pn- junction in forward bias and reverse bias.
		c) Optical instruments: Microscope and astronomical telescopes (reflecting & refracting) and their magnifying powers.	14. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
		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.	15. To convert the given galvanometer into an ammeter and voltmeter of desire range and to verify the same.
September	19	e) Interference : Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light	Smart Board to explain wavefront, YDSE interference fringes.
		Revision	
		<u>Half Yearly Examination+ Question Paper Discussion</u>	
		Diffraction due to single slit, width of central maximum, resolving power of microscope and astronomical telescope.	
October	18	f) Polarization; plane polarized light, Brewster's law, use of plane polarized light and polaroids.	
		<u>Unit – VII : Dual Nature of Matter and Radiation :</u>	
		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).	
		<u>Unit – VIII : Atoms and Nuclei :</u>	

Alpha – particle scattering experiment, Rutherford’s model of atom, Bohr’s model, energy levels, hydrogen spectrum. Composition and size of the nucleus, atomic masses, isotopes, isobars, isotones, Radioactivity – α , β , γ particles / rays and their properties, radioactive decay law, Mass – energy relation, mass defect, binding energy per nucleon, its variation with mass number, nuclear, fission and fusion.

November 16

Unit – IX : Electronic Devices :

Energy bands in solids (qualitative ideas only), conductors, insulators, Semi conductors, semi-conductor diodes, I-V characteristics in forward and reverse bias, diode as a rectifier, I-V characteristics of LED, photodiodes, solar cell and Zener diode, Zener diode as a voltage regulator.

Junction transistor, transistor actions, characteristics of a transistor, transistor as an amplifier (common emitter configuration) and oscillator. Transistor as a switch, Logic gates (OR, AND, NOT, NAND and NOR).

Unit – X : Communication Systems :

Elements of a communication system (block diagram only), bandwidth of signals (speech, TV and digital data), bandwidth of transmission medium, Propagation of electromagnetic waves in the atmosphere, Sky and space wave propagation, Need for modulation, Production and detection of an amplitude-modulated wave. Basic ideas about internet, mobile telephony and global positioning system (GPS)

One Project / demonstration experiment & six activities.

December 20
January 17

Revision for Pre- Board

Pre-Board Examination 2016 – 2017

Revision of complete syllabus, Sample papers and CBSE model question paper discussion.

Important :Moral Value Questions to be discussed in each chapter stressing on Good behaviour in human interaction, Sharing, Compassion, Empathy, Discipline, Responsibility, Respect for law and order, Conflict resolution, Teamwork, Honesty and integrity Courteous behavior, Fostering respect for difference, Sensitivity to environment etc. Other relevant parameters may also be discussed in each chapter.

Subject : Chemistry

Text Book :

1. Text Book of Chemistry Part I and II (NCERT)

Reference Books :

1. New Course Chemistry by Pradeep Jain (Pradeep Publication)
2. ABC of Chemistry (by Modern Publications)
3. New Era Chemistry (G.R. Bathla Pblcation)

Month

W.D.

Chapter wise Contents

Projects/Activities

April
+
May

21
+
05

Unit X : Haloalkanes and Haloarenes

Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation.

Haloarenes: Nature of C -X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only.

Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform freons, DDT.

Activities and Projects – Value based questions on the use of CH_2Cl_2 , CHCl_3 , CCl_4 , DDT, Freons, and other haloalkanes.

Unit XI: Alcohols, Phenols and Ethers

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Unit XII: Aldehydes, Ketones and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes: uses.

June 15 **Carboxylic Acids:** Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII: Organic compounds containing Nitrogen

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Activity and Project

– Detection of functional group present in different organic compounds.

-COOH, -CHO,
=CO, -NH₂, -OH,
phenolic -OH, -O-

July 22 **Unit I: Solid State**

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea). Unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties. Band theory of metals, conductors, semiconductors and insulators and n & p type semiconductors.

Unit II: Solutions

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties - relative lowering of vapour pressure, Raoult's law, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, van't Hoff factor.

Unit III: Electrochemistry

Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell -electrolytic cells and Galvanic cells, lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and emf of a cell, fuel cells, corrosion.

Activity and Project

Practice of road map of conversions and assignment on conversions.

- practice of word problems.

- practice of IUPAC nomenclature.

August 22 **Unit IV: Chemical Kinetics**

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions), concept of collision theory (elementary idea,

Activity and Projects

– Practice of
i) Reasoning questions
ii) HOT questions
iii) Preparation of ppt

no mathematical treatment).

on unit cell and
different crystal
lattices.

Unit V: Surface Chemistry

Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids, catalysis, homogenous and heterogenous activity and selectivity; enzyme catalysis colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion - types of emulsions.

Unit VI: General Principles and Processes of Isolation of Elements

Principles and methods of extraction - concentration, oxidation, reduction - electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron. Ellingham diagram

September 19 REVISION AND DOUBT CLEARANCE
HALF YEARLY EXAM-2018

October 18 Unit VII: p - Block Elements

Group 15 Elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties;

Nitrogen - preparation properties & uses; compounds of nitrogen, preparation and properties of ammonia and nitric acid, oxides of nitrogen (Structure only);

Phosphorus - preparation and properties of phosphine, halides PCl_3 , PCl_5 and oxoacids (elementary idea only).

Group 16 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties, dioxygen: Preparation, Properties and uses of sulphur dioxide, sulphuric acid. Industrial process of manufacture, properties and uses; oxoacids of sulphur (Structures only).

Group 17 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens, Preparation properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only).

Group 18 Elements: General introduction, electronic configuration, occurrence, trends in physical and chemical properties, uses.

Unit VIII: d and f Block Elements

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends of properties of the first row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $\text{K}_2\text{Cr}_2\text{O}_7$ and KMnO_4 .

Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences.

Actinoids - Electronic configuration, oxidation states

Activities and Projects-

i) Preparation of charts on E° of various metals.

ii) Study of the effect of concentration and temperature on the rate of reaction.

iii) collection of different ore and preparation of charts showing their extraction.

November 16 Unit IX: Coordination Compounds

Activity and Projects

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Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereo isomerism, importance of coordination compounds (in qualitative inclusion, extraction of metals and biological system). Structure and Stereo isomerism

Unit XIV: Biomolecules

Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen) importance.

Proteins - Elementary idea of α - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure.

Vitamins - Classification and functions.

Nucleic Acids: DNA and RNA.

Unit XV: Polymers

Classification - natural and synthetic, methods of polymerization (addition and condensation), copolymerization, some important polymers: natural and synthetic like polythene, nylon polyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers.

Unit XVI: Chemistry in Everyday life

Chemicals in medicines - analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.

Chemicals in food - preservatives, artificial sweetening agents, elementary idea of antioxidants.

Cleansing agents - soaps and detergents, cleansing action.

December 17 REVISION AND DOUBT CLEARANCE

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Sample question papers and CBSE model question paper discussion

Preparation of Special Assignment

Pre – Board Examination

PRE-BOARD EXAM: 2017-2018.

Practical:

A. VOLUMETRIC ANALYSIS

- To calculate
- Molarity
 - strength
 - number of moles of water of crystallisation
 - Atomic weight of alkali metal

by titrating a) KMnO_4 vs $(\text{NH}_4)_2\text{SO}_4 \cdot \text{FeSO}_4 \cdot 6\text{H}_2\text{O}$.

b) KMnO_4 vs $\text{C}_2\text{O}_4\text{H}_2 \cdot 2\text{H}_2\text{O}$

B. Detection of the functional group in the given organic sample.

- $-\text{COOH}$
- $-\text{CHO}$

– i) collection of different type of fibres

ii) Preparation of charts to differentiate between natural and synthetic fibres.

iii) Preparation of charts showing different polymers and their monomers.

iv) Exhibition of Tyndall effect.

- iii) =CO
- iv) -NH₂
- v) Phenolic -OH
- vi) Alcoholic -OH

C. QUALITATIVE ANALYSIS

Cations- Pb⁺, Cu²⁺, Al³⁺, Fe³⁺, Ni²⁺, Zn²⁺, Co²⁺, Mn²⁺, Ba²⁺, Ca²⁺, Sr³⁺, NH₄⁺

Anions – Cl⁻, Br⁻, I⁻, CO₃²⁻, NO₃⁻, CH₃COO⁻, SO₄²⁻

Subject : Biology

Prescribed Text Book : Biology for Class XII by NCERT

- Reference Book :**
1. Elementary Biology for Class XII (Trueman's Pub.)
 2. Text Book of Biology for Class XII (Pradeep's Publication)
 3. Illustrated Biology (Sultan Chand)
 4. Objective Biology – Vol I & II (Dinesh Publications)
 5. GRB-Objective Biology
 6. Practical NoteBook for Class XII (Saraswati Publication)

Month	W.D.	Topics	Project/Activities
April	21	<p><u>UNIT - VI – Reproduction :</u></p> <p><u>Chapter – 1 : Reproduction in organisms :</u> Reproduction, a characteristic feature of all organisms for continuation of species, mode of asexual reproduction-binary fission, sporulation, budding, gemmule, fragmentation, vegetative propagation in plants.</p> <p><u>Chapter – 2 : Sexual reproduction in flowering plants :</u> Flower 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 and embryo, development of seed and formation of fruit, special modes – apomixis, polyembryony. Significance of seed dispersal and fruit formation.</p> <p><u>Chapter – 3 : Human Reproduction :</u> Male and female reproductive system, microscopic anatomy of testes and ovary, gametogenesis – spermatogenesis and oogenesis, menstrual cycle fertilization, , embryo development upto blastocyst formation, implantation, pregnancy and placenta formation (elementary idea)parturition(elementary idea) and lactation(elementary idea).</p> <p><u>Chapter – 4 : Reproductive Health :</u> Need for reproductive health and prevention of STD birth control--need and methods ,contraception.</p>	<ol style="list-style-type: none"> 1. Study of pollen germination on a slide. 2. Study of flowers adapted to pollination by different agencies(wind, insect, bird) 3. Study of pollen germination on stigma through a permanent slide. 4. To prepare a temporary mount of onion root tip to study mitosis. 5. To study controlled pollination-emasculation, bagging and tagging. 6. Identification of stages of gamete development i.e. T.S. of testes & T.S. of ovary through permanent slide. 7. To study meiosis in onion bud cell through permanent slides. 8. Identification of T.S. of Blastula through permanent slides.
May	05	<p><u>Chapter – 4 : Reproductive Health (contd.) :</u> Medical termination of pregnancy, amniocentesis; infertility and –ART-IVF,ZIFT,GIFT (elementary idea for general awareness)</p> <p><u>UNIT VII – Genetics and Evolution :</u></p> <p><u>Chapter – 5 : Principles of Inheritance and Variation :</u> Mendelian laws of inheritance</p>	

June	15	<p><u>UNIT VII – Genetics and Evolution :</u></p> <p><u>Chapter – 5 : Principles of Inheritance and Variation :</u> (contd.) Mendelian laws of inheritance, deviation from Mendelism ,incomplete dominance, codominance, multiple alleles and inheritance of blood groups, pleiotropy, elementary idea of polygenic inheritance, chromosome theory of inheritance; chromosomes and genes ; sex determination, linkage and crossing over; sexlinked inheritance; Mendelian disorders in humans, chromosomal disorders in humans.</p>	
July	22	<p><u>Chapter – 6 : Molecular Basis of Inheritance :</u> Search for genetic material ,The DNA, RNA world. Structure of DNA, DNA packaging ,Replication of DNA, central dogma, Transcription, Genetic code, Translation, Regulation of gene expression, lac operon, Human and rice genome project, DNA fingerprinting.</p> <p><u>Chapter – 7 : Evolution :</u> Origin of life ,biological evolution , evidences for biological evolution, Darwin’s contribution, modern synthetic theory of evolution, mechanism of evolution, Gene flow and genetic drift, Hardy-Weinberg principle, adaptive radiation, human evolution.</p>	<p>9. Study of Mendelian inheritance using seeds of different colour/size of any plant.</p> <p>10. Study of prepared pedigree charts of genetic traits such as rolling of tongue, blood groups, earlobes, widow’s peak and colour blindness.</p>
August	22	<p><u>UNIT – IX : Biotechnology :</u></p> <p><u>Chapter – 11 : Biotechnology – principles and processes :</u> Genetic Engineering (rDNA Technology)</p> <p><u>Chapter – 12 : Biotechnology and its Applications :</u> Application of biotechnology in health and agriculture, human insulin and vaccine production, stem cell technology, gene therapy, GMO’s-Bt crops, transgenic animals , Biosafety issues, biopiracy and patents.</p>	<p>11. Study the effect of three different temperature and three different pH on the activity of salivary amylase on starch.</p> <p>12. Isolation of DNA from available plant material such as spinach, green pea seeds ,papaya etc .</p>
September	19	<p>Revision Half-Yearly Examination</p> <p><u>UNIT – VIII : Biology in Human Welfare :</u></p> <p><u>Chapter – 8 : Human Health and Diseases :</u> Pathogens, parasites causing human diseases(malaria, dengue, chickengunia, filariasis,</p>	
October	18	<p>UNIT – VIII : Biology in Human Welfare :</p> <p>Chapter – 8 : Human Health and Diseases : Pathogens, parasites causing human diseases(malaria, dengue, chickengunia, filariasis,ascariasis, typhoid, pneumonia, common cold, amoebiasis, ringworm) and their control. Basic concepts of immunology-vaccines, cancer , HIV and AIDS, adolescence , drug and alcohol abuse.</p> <p>Chapter – 9 : Strategies for enhancement in Food Production :</p> <p>Plant breeding, tissue culture, single cell protein , biofortification, apiculture and Animal husbandry.</p>	<p>13. Study of disease causing organisms like Ascaris, Entamoeba, Plasmodium & Roundworm through permanent slides or specimen. Comment on symptoms of disease that they cause.</p>

		Chapter – 10 : Microbes in Human Welfare : Role of microbes in household food processing, industrial production, sewage treatment, energy generation and as bio-control agents and bio-fertilizers. Antibiotics ,production and judicious use. UNIT – X : Ecology: Chapter - 13 : Organism and Population : Habitat and niche, population and ecological adaptations.Habitat and niche, population and ecological adaptations, population interactions, population attributes. Chapter – 14 : Ecosystem : Structure and function : Patterns, components; productivity and decomposition, energy flow, ecological pyramid, nutrient cycles, ecological succession, ecological services.	14. Study the presence of suspended particulate matter in air at two widely different sites. 15. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organisms.
November	16	Chapter – 15 : Biodiversity and Conservation : concept of biodiversity, patterns of biodiversity , biodiversity loss, conservation of biodiversity-hot spots, endangered organisms, extinction, Red Data Book, biosphere reserves, national parks, sanctuaries and Ramsar sites. Chapter – 16 : Environmental Issues : Air and water Pollution and its control, solid waste management, agrochemicals and their effects, Radioactive waste management, greenhouse effect and climate change, ozone layer depletion ,deforestation any one case study as success story addressing environmental issue(s).	16. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them. 17. Study the plant population density by quadrat method. 18. Study the plant population frequency by quadrat method. 19. To study two plants and two animals found in xeric conditions. Comment upon their morphological adaptations.
December	18	Revision Pre-Board Examination Discussion & Pre-board, Sample Question papers and CBSE model question paper discussion.	20. To study two plants and two animals found in aquatic conditions. Comment upon their morphological adaptations

Subject : Computer Science

Subject : CompSc

Text Book :- Text Book : Computer Science C++ for Class XII by SultanChand Publication

Reference Books : C++ by Venu Gopal (Tata Mcgrawhill Publication)

Month	W. Days	Topics to be covered	VALUE s	Activity/Anecdotes
April+may	21+05	Review : C++ covered in class XI Concept of OOPs – Class and objects, Data Encapsulation, Data hiding, Data Abstraction, Polymorphism, Inheritance, Implementation of Object Oriented Programming Concepts in C++. Networking: Concept of networking, server and node, Types of networking, Topology, Different network device, communicating medium, switching technique Internet : Communication protocol –HTTP, FTP, SLIP, PPP, TCP/IP Wireless and mobile computing	Integrity	Anecdote -stevejob story <u>Power point presentation</u>

		<p>technologies : GSM, TDMA,CDMA, WLL, EDGE</p> <p>Internet terminology and services : WWW, web browser, web site, web page, search engine, web address, web hosting, video conference, chatting, dedicated and non dedicated server</p> <p>Different types of software –OSS, shareware, proprietary software, free software, malware</p> <p>Scripting language-java script, vb-script, ASP,JSP</p> <p>LEARNING OBJECTIVE</p> <p>To understand working of various network devices</p> <p>To learn communication medium and its advantages and disadvantages</p> <p>To take security measures for network and internet connection and on line activity</p> <p>Video conferencing ,mailing, uploading and down loading</p> <p>Relation with other subject</p> <p>Physics-communication medium,bandwidth</p> <p>Attenuation</p> <p>Hots. Communication between smart phone and laptop</p> <p>Life skills/attitude-</p> <p>To gather and assess information to enhance knowledgebase</p> <p>To develop PAN</p> <p>Value- Knowledge sharing</p> <p>Eclass/smartboard- Power point presentation</p> <p>Inviting physics teacher to explain attenuation and bandwidth</p>	Team Work	
Jun	15	<p>Class & Objects: Definition of a class, Array of objects, objects as function argument, function returning the object, friend function, inline function, static data member and function</p> <p>Constructor: Special characteristics, Default constructor, parameterized and copy constructor, default argument constructor, Implicit and Explicit call to the constructor, constructor overloading, order of constructor execution in case of containership.</p> <p>Destructor: Special characteristics, Declaration and definitions of Destructor.</p>	<u>Discipline</u>	<p>Practical Demo in computer lab</p> <p>Error and output finding using smart board</p> <p>Programming (practical)</p>
July	22	<p>Inheritance: Definition and use, concept of inheritance- base class & derived classes, Accessibility mode, Accessibility of members from objects and within derived class(es), different types of inheritance, Defining parameterized constructor in base class and derive class and their order of invocations.</p> <p>File Handling : Need for data file, text file and</p>		<p><u>Anecdote-</u></p> <p>"Whats the object-oriented way to become wealthy?"</p> <p>Practical Demo in computer lab</p>

		binary file, basic file operation (creating file, writing in a file, searching data from file, appending data in file, deleting data from file), file accessing mode and function used for file handling		<p>Questionnaire and problem solving technique (inheritance)</p> <p>Programming (practical)</p>
August	22	<p>Data Structures: Arrays -Traversal, Searching (Linear, Binary Search), Insertion, deletion, sorting (insertion, selection, bubble sort), merging of two sorted arrays. Two Dimensional Arrays: Traversal, calculating address of an element (row major, column major), programming based on 2D array . Stacks : Definition, Operations on stack (Push and Pop) and its implementation in C++ using array, converting expressions from infix to postfix notation and evaluations of post fix expression, Queues : Definition, operation on queue(insertion, deletion) and its implementation in C++ using array, Circular Q.</p>		<p>Practical Demo in computer lab</p> <p>Error and output finding using smart board</p> <p>Programming (practical)</p>
September	19	Revision and Practical Exam. Half-Yearly Examination		
October	18	<p>Pointers & link List: Declarations and Initialization of pointers. Dynamic memory allocation /de allocation operators: new, delete, pointers and arrays : Array of pointers, Pointer to array, function having pointer as an argument, Function returning a pointer, self referential structures, This pointer Implementation of stack and queue using linked list.</p>		<p>Practical Demo in computer lab</p> <p>Output finding using smart board</p> <p>Programming (practical)</p>
November	16	<p>Database concepts and SQL : Data base and its advantage, DBMS, Components of data base and keys, Various DDL and DML commands of SQL Boolean Algebra: Basic logic gates and truth table,Principal of duality and basic postulates of BA, Basic theorem of B.A, Minterm/Maxterm, S.O.P form and P.O.S form canonical expression, minimal form, Simplification of Boolean expression using K-map, circuit diagram using</p>	Responsibility and discipline	<p><u>Database , table creation</u></p> <p><u>And applying query on the table</u></p>

		universal gate and other gates for an expression.		
December + January	20 + 17	Revision Pre-Board Examination Project		Project on selected topic using file handling

Subject : Informatics Practices

Text Book : Informatics Practices for Class XII by Sumita Arora, Dhanpat Rai Publication

Reference Books : Informatics Practices for Class XII by Reeta sahuo, Saraswati Publication

Month	W. Days	Topics to be covered	VALUES	
April+may	21+05	<p>Web application development: URL, Web Server, Communicating with the web server, concept of Client and Server Side. HTML based web pages covering basic tags - HTML, TITLE, BODY, H1..H6, Paragraph (P), Line Break (BR), Section Separator (HR), FONT, TABLE, LIST (UL, OL), FORM; Creating and accessing static pages using HTML and introduction to XML</p> <p><u>NETWORKING AND OPEN STANDARDS</u> Computer Networking: Networking - a brief overview, Identifying computers and users over a network (Domain Name, MAC 'Media Access Control' and IP address), domain name resolution, Network Topologies, Types of network - LAN, MAN, WAN, PAN; Wired Technologies - Co- Axial, Ethernet Cable, Optical Fiber; Wireless Technologies - Blue Tooth, Infrared, Microwave, Radio Link, Satellite Link; Network Devices - Hub, Switch, Repeater, Gateway - and their functions; Network security - denial of service, intrusion problems, snooping; Open Source Concepts: Open Source Software (OSI norms), common FOSS examples (Gnu/Linux, Firefox, OpenOffice), common open standards (open document format, Ogg Vorbis) Indian Language Computing: character encoding, UNICODE and Indian Language, different types of fonts (open type vs true type, static vs dynamic), Entering Indian Language Text - phonetic and keymap</p>	<p>Honesty & Integrity</p> <p>Team Work</p>	Power point presentation

		based.		
Jun	15	<p>Review of Class XI (SQL)</p> <p>-All DML Commands, Grouping Records: -GROUP BY clause & Group functions - MAX(), MIN(), AVG(), SUM(), COUNT()); using COUNT(*), DISTINCT clause with COUNT, Group Functions and Null Values.</p> <p>Displaying Data From Multiple Tables: Equi-Join and Cartesian Products; Selection, projection, union, intersection</p>	<u>Conflict resolution</u>	
July	22	<p>Review of Class XI(java)</p> <p>-Controls(textfield etc)</p> <p>-if,switch,Loops</p> <p>-User defined method</p> <p><u>IT APPLICATIONS</u> features of e-Governance, e-Business and e-Learning</p> <p>Front-end Interface - Introduction; content and features; identifying and using appropriate component (Text Box, Radio Button, CheckBox, List) for data entry, validation and display; Back-end Database - Introduction and its purpose; exploring the requirement of tables and its essential attributes; Front-End and Database Connectivity - Introduction, requirement and benefits</p>	<u>Fostering respect for difference</u>	<p>Practical Demo in computer lab</p> <p>Error and output finding using smart board</p> <p>Programming (practical)</p>
August	22	<p><u>Commonly used libraries:</u> String class and methods: toString(), concat(), length(), toLowerCase(), toUpperCase(), trim(), substring() Math object: pow(), round() Simple GUI Objects: Dialog Accessing MySQL database using JDBC to connect with database.</p> <p><u>Programming Fundamentals</u> Access specifier for classes, Members and methods, Concept of package Inheritance: need and implementation, Method Overloading and Overriding, Abstract Class</p>	Sensitivity to environment	<u>WEB Application development</u>
September	19	Revision + Practical Exam. & Half-Yearly Examination		

October	18	Database Fundamentals Concept of Database Transaction, Committing and revoking a Transaction using COMMIT and REVOKE,		
November	16	<u>All DDL commands-</u> Adding and removing constraint-Foreign Key;PRIMARY KEY , NOT NULL and default constraints, Enabling and Viewing Constraints, Viewing the Columns Associated with Constraints; ALTER TABLE for adding and removing a column, ALTER TABLE for modifying data types of a column,changing name of columns DROP Table ,truncate table;	<u>Responsibility and discipline</u>	
December + January	20 + 17	Revision Pre-Board Examination Project		Customized project on selected topic using database connectivity

Subject : W.Ed (Computer) C – Language

Text Books – No Books

Portion for Half Yearly Examination

Month	W. Days	Topics to be covered	VALUES IMBIBED	Activity
April+May	21+5	<u>Getting Started with C</u> <ul style="list-style-type: none"> • What is C • C character set • Tokens - Keywords - Identifiers - Literals - Separators - Operators • C Program Structure • Header files • Compiling in C - 	Integrity	
June	15	<u>Operators ,Identifiers & Data types</u> <ul style="list-style-type: none"> • Operators <ul style="list-style-type: none"> - Arithmetic operator - Relational Operators - Logical Operators • Data types in C <ul style="list-style-type: none"> -Primitive datatypes -Naming rules of an identifier • Variable(Declaration and initialization) • Basic structure of C program 	Teamwork	
July	22	<u>Console Input and Output :</u>		Practical Demo in

		<ul style="list-style-type: none"> • Preprocessor Directive • Reading and Writing using printf () and scanf () functions. • format specifiers 		computer lab
August	22	Program Control Statements: Selection Constructs - If statements and its variants, Switch Statements	Responsibility and discipline	Practical Demo in computer lab
September	19	Assignments and Revision Assessment		
October	18	Program Control Statements: Iteration Constructs: - For loop and its variants, While loop , Do while loop	Teamwork and collaboration	
November	16	Library Functions : pow(),sqrt()	Honesty & Integrity	
December	20	Revision & Assignment		
January	17	Assessment		

Subject : Physical Education

MONTH	No Of W.D.	UNIT/ CHAPTE R	DISCRIPTION
APRIL TO JULY	21+05+15+ 22	UNIT- I	Planning in Sports Meaning & Objectives Of Planning Various Committees & its Responsibilities (pre; during & post) Tournament - Knock-Out, League Or Round Robin & Combination Procedure To Draw Fixtures - Knock-Out (Bye & Seeding) & League (Staircase & Cyclic) Intramural & Extramural - Meaning, Objectives & Its Significance Specific Sports Programme (Sports Day, Health Run, Run For Fun, Run For Specific Cause & Run For Unity)
		UNIT- II	Sports & Nutrition Balanced Diet & Nutrition: Macro & Micro Nutrients Nutritive & Non-Nutritive Components Of Diet Eating For Weight Control - A Healthy Weight, The Pitfalls Of Dieting, Food Intolerance & Food Myths Sports nutrition & its effect on performance (fluid & meal intake, pre, during & post competition) Food supplement for children
		UNIT III	Yoga & Lifestyle Asanas as preventive measures Obesity: Procedure, Benefits & contraindications for Vajrasana, Hastasana, Trikonasana, Ardh Matsyendrasana Diabetes: Procedure, Benefits & contraindications for Bhujangasana, Paschimottasana, Pavan Muktasana, Ardh Matsyendrasana Asthema: Procedure, Benefits & contraindications for Sukhasana, Chakrasana,

			Gomukhasana, Parvatasana, Bhujangasana, Paschimottasana, Matsyasana Hypertension: Tadasana, Vajrasana, Pavan Muktasana, Ardha Chakrasana, Bhujangasana, Sharasana Back Pain: Tadasana, Ardh Matsyendrasana, Vakrasana, Shalabhasana, Bhujangasana
AUGUST TO SEPT.	22+ 19	UNIT- IV	Physical Education & Sports for Differently-Abled Concept of Disability & Disorder Types of Disability, its causes & nature (cognitive disability, intellectual disability, physical disability) Types of Disorder, its cause & nature (ADHD, SPD, ASD, ODD, OCD) Disability Etiquettes Advantage of Physical Activities for children with special needs Strategies to make Physical Activities assessable for children with special need.
		UNIT- V	Children & Sports Motor development & factors affecting it Exercise Guidelines at different stages of growth & Development Advantages & disadvantages of weight training Concept & advantages of Correct Posture Causes of Bad Posture Common Postural Deformities - Knock Knee; Flat Foot; Round Shoulders; Lordosis, Kyphosis, Bow Legs and Scolioses Corrective Measures for Postural Deformities
		UNIT VI	Women & Sports Sports participation of women in India Special consideration (Menarch & Menstrual Dysfunction) Female Athletes Triad (Oestoperosis, Amenoria, Eating Disorders) Psychological aspects of women athlete Sociological aspects of sports participation
OCT. to DEC.	18 + 16+20	UNIT - VII	Unit-VII : Test & Measurement in Sports Computation of Fat Percentage - Slaughter - Lohman Children Skinfold Formula: Triceps & Calf Skinfold (Male 6 to 17 yrs - % body fat = (0.735 X sum of skinfold) + 1.0 (Female 6 to 17 yrs - % body fat = (0.610 X sum of skinfold) + 5.0 Measurement of Muscular Strength - Kraus Weber Test Motor Fitness Test - AAPHER General Motor Fitness - Barrow three item general motor ability (Standing Broad Jump, Zig Zag Run, Medicine Ball Put - For Boys: 03 Kg & For Girls: 01 Kg) Measurement of Cardio Vascular Fitness - Harvard Step Test/Rockport Test - Computation of Fitness Index: Duration of the Exercise in Seconds x 100 5.5x Pulse count of 1-1.5 Min after Exercise Rikli & Jones - Senior Citizen Fitness Test 1.Chair Stand Test for lower body strength 2.Arm Curl Test for upper body strength 3.Chair Sit & Reach Test for lower body flexibility 4.Back Scratch Test for upper body flexibility 5.Eight Foot Up & Go Test for agility

			6.Six Minute Walk Test for Aerobic Endurance
		UNIT- VIII	Physiology & Sports Gender differences in physical & physiological parameters. Physiological factor determining component of Physical Fitness Effect of exercise on Cardio Vascular System Effect of exercise on Respiratory System Effect of exercise on Muscular System Physiological changes due to ageing Role of physical activity maintaining functional fitness in aged population
		UNIT IX	Sports Medicine Concept, Aims & Scope of Sports Medicine Sports injuries: Classification, Causes & Prevention First Aid - Aims & Objectives Management of Injuries: Soft Tissue Injuries: (Abrasion, Contusion, Laceration, Incision, Sprain & Strain) Bone & Joint Injuries: (Dislocation, Fractures: Stress Fracture, Green Stick, Communated, Transverse Oblique & Impacted)
		UNIT- X	Kinesiology, Biomechanics & Sports Projectile & factors affecting Projectile Trajectory Newton's Law of Motion & its application in sports Aerodynamics Principles Friction & Sports Introduction to Axes & Planes Types of movements (Flexion, Extension, Abduction & Adduction) Major Muscles involved in running, jumping & throwing
		UNIT- XI	Psychology & Sports Understanding Stress & Coping Strategies (Problem Focussed & Emotional Focussed) Personality; its definition & types - Trait & Type (Sheldon & Jung Classification) & Big Five Theory Motivation, its type & techniques Self-esteem & Body Image Psychological benefits of exercise Meaning, Concept & Types of Aggressions in Sports
		Unit XII	Training in Sports Strength - Definition, types & methods of improving Strength - Isometric, Isotonic & Isokinetic Endurance - Definition, types & methods to develop Endurance - Continuous Training, Interval Training & Fartlek Training Speed - Definition, types & methods to develop Speed - Acceleration Run & Pace Run Flexibility - Definition, types & methods to improve flexibility Coordinative Abilities - Definition & types Circuit Training & High Altitude Training; Introduction & its impact
			Practical 01.Physical Fitness - AAHPER 02.Skills of any one Team Game of choice from the given list*

		<p>03.Viva</p> <p>04.Record File**</p> <p>*Athletics, Basketball, Football, Handball, Hockey, Kho Kho, Rifle Shooting, Unified Basketball (Differently- Abled Children) & Volleyball</p> <p>**Record File shall include:</p> <p>Practical-1: Modified AAHPER administration for all items.</p> <p>Practical-2: Conduct Barrow 3 Item Test on 10 students.</p> <p>Practical-3: Procedure for Asanas, Benefits & Contraindication for any two Asanas each lifestyle disease. Practical-4: Procedure for administering Senior Citizen Fitness Test for 5 elderly family members.</p> <p>Practical-5: Any one game of your choice out of the list above. Labelled diagram of field & equipment Rules, Terminologies & Skills).</p> <p>Note:</p> <p>1.It is suggested that Unit No. III & VII may be taught by following the Principle of Learning by Doing.</p> <p>2.Content is designed to complete the syllabus between 120-140 period.</p>
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Subject: Swimming

MONTH	No Of W.D.	UNIT /CHAPTER	DESCRIPTION
MARCH	23	SWIMMING CAMP	i) Preparation for swimming competetions.
APRIL to JUNE	21+5+15	CHAPTER -1	i) General & specific warming up on ground and in the swimming pool ii) Checking of waterman ship. iii) Selection of swimming team of performance basis iv) Rules & regulations of swimming. v) Demonstration of four basic skills of swimming. vi) Preparation of swimming demonstration. vii) Videos and power point presentation.
JULY to SEPT	22+22+19	CHAPTER-2	i) Stroke correction. ii) Swimming START, TURNING & GLIDING practice. iii) Types and kind of START practice. iv) Time trials. v) Competition in groups. vi) Videos and power point presentation.
OCT & NOV	18+16	CHAPTER -3	i) Medley relay & relay race practice.

- ii) Sequence of stroke in relay & individual medley
- iii) TURNING correction.
- iv) Time trials.
- v) Competition in groups.
- vi) Videos and power point presentation.

Subject :- Economics

Text Book : Economics for Class – XII NCERT

Reference Book : Introductory Microeconomics & Macroeconomics – V.K. Publications.

Month	W.Day	Topics	Learning Objective, Anecdotes & Value education Project/Activity
April	20	<p><u>Introduction of Micro Economics</u>, distinction between Micro & Macro.</p> <p><u>Central problems of an economy</u> – what, how and for whom, PPC and opportunity cost. Distinguish between positive and normative perspectives.</p> <p><u>Consumers behaviour and demand</u> – Consumer's equilibrium – through utility and indifference curve, condition of consumer's equilibrium. Demand – Meaning and factors affecting demand, market and individual demand, change in demand.</p> <p><u>Elasticity of demand</u> – Meaning and factors affecting elasticity of demand and measurement of price elasticity – (a) Percentage change method</p>	<p>Understand the concept of micro and macro “Post-it Notes”-a short story</p> <p>Economic value: Distribution of resources in different goods to get maximum satisfaction</p> <p>Understand difference between planned and unplanned economy</p> <p>Inclusive Teaching : B.St – Law of diminishing marginal utility.</p>
May	06	<p><u>Elasticity of demand (contd.)</u> – (b) Geometric method and (c) Total expenditure method.</p>	<p>On a chart paper movement along and shifts in demand curve to be shown with the help of a diagram.</p>
June	15	<p><u>Production Behaviour and Supply</u> –</p> <p><u>Production function</u> : Total Product, Average and Marginal Product, Returns to a factor, Cost and Revenue : Short run costs – relations, Producer's equilibrium - Meaning and their relationship, Marginal cost approach. TR and TC approach.</p>	<p>“The Whole World Came Together”-an anecdote</p> <p>Preparation of individual and market supply schedule on a chart paper alongwith the diagram.</p>
July	21	<p><u>Supply</u> : Meaning and determinants of supply, market and individual supply schedule, Movement along and shift in supply curve, Price elasticity of supply. Measurement of price elasticity of supply.</p> <p><u>Forms of Market and Price determination</u> – Meaning of market, Perfect competition – Meaning and features, Market equilibrium and determination of equilibrium price, Effects of shifts in demand and supply. Non competitive Markets – Monopoly, Oligopoly and Monopolistic competition – their meaning and features.</p> <p><u>Introduction – Macro Economics :</u></p> <p><u>National Income</u> : Circular flow of income, concepts.</p>	
August	23	<p><u>National Income</u> :Leakages and injections.Basic concept of stock and flow,Concept and aggregates related to Income.Measurement of National Income,Income method,Product</p>	<p>Economic value: Income of a nation from different sources and its measurement</p>

method, Expenditure method, concept of Compensation of employees and operating surplus

Money and Banking – Money – meaning and functions Supply of money – meaning and four measures, Central Bank – meaning and functions, Commercial Bank – meaning and credit creation.

September 10+6+3

Revision.
Half Yearly Exam.
Discussion of Question Papers.

October 15

Government Budget and Economy – Meaning, objectives and components, Classification of receipts – revenue and capital.
Government Budget and Economy - Classification of expenditure – revenue and capital expenditure. Various measures of Government deficits – Revenue deficit, Fiscal deficits, Primary deficit, meaning and implications.
Determination of Income and Employment – Aggregate demand and its components. Propensity to consume and propensity to save (average and marginal) Determination of equilibrium level of income.

Economic value: Different income and expenditure of the government and their implications in budget Importance of savings and investment in the development of an economy

November 23

Investment multiplier – meaning. Meaning of full employment and involuntary unemployment. Problems of excess and deficient demand, Measures to correct them – change in government spending and availability of credit.
Balance of Payment – Meaning and components, Balance of payment deficit – Meaning, Foreign exchange rate – Meaning of fixed and flexible rates and managed floating determination of exchange rate in a free market.

Economic value: Change in economy with the change in the rate of foreign exchange rate

December 16

Revision of complete syllabus, Discussion of Sample papers and CBSE model question paper.

Pre-Board Examination

January 16

Discussion of Pre-Board Question papers.

Subject: - Accountancy XII

Text Book : Accountancy for Class – XII NCERT

Reference Book : Double Entry Book Keeping (T.S. Garwal)

Month	W.Day	Topics	Project/ smart board/ inclusive teaching
April	21	<p><u>Unit 1. Topics</u> <u>Accounting for Partnership firms:</u> <u>Fundamentals:</u> *Partnership: Features, Partnership deed. *Provision of the Indian Partnership Act, 1932 in the absence of Partnership deed. *Preparation of profit and loss appropriation account. *Fixed and Fluctuating capital accounts</p>	Smart Board

		<p>*Guarantee of profits.</p> <p>*Past adjustments</p> <p>*Goodwill: Nature, factors affecting methods of valuation:- Average profit, super profit and capitalisation of average and super profit.</p>	
May	5	<p><u>Accounting for partnership firms:-</u></p> <p><u>Reconstitution:</u></p> <p>*Change in the profit sharing ratio among the Existing partners: Sacrificing ratio, Gaining ratio,</p>	Smart Board
June	15	<p><u>Accounting for partnership firms:-</u></p> <p><u>Reconstitution</u></p> <p>Revaluation of assets and liabilities, treatment of reserves and accumulated profits, preparation of balance sheet</p> <p>*Admission of a partner: Preparation of revaluation account, Treatment of goodwill (as per AS-26), Adjustment of capital accounts and preparation of balance sheet.</p>	Smart Board
July	22	<p><u>Accounting for partnership firms:-</u></p> <p><u>Reconstitution</u></p> <p>*Retirement and Death of a partner:</p> <p>Preparation of revaluation account, Treatment of goodwill (as per AS-26), Adjustment of capital accounts and preparation of balance sheet.</p> <p>Preparation of loan account, preparation of deceased partners capital account and executor's account.</p> <p><u>Dissolution of partnership firm:</u> Types of dissolution of a firm. Settlement of accounts, preparation of realisation account, capital account of partners and cash/bank account, preparation of memorandum balance sheet.</p>	Smart Board
August	22	<p>Unit 2. Topics</p> <p><u>Accounting for companies:</u></p> <p><u>Accounting for share capital:</u> Meaning of share and share capital, nature and types, Issue of equity and preference share, over subscription and under subscription of shares, Issue at par, premium, calls in arrear and calls in advance (excluding interest), Forfeiture of share and reissue.</p> <p>Issue of share other than cash., Disclosure of share capital in the company's balance sheet.</p> <p><u>Accounting for Debentures:</u> Issue of debenture at par, premium, discount. Issue of debenture for consideration other than cash. Issue of debentures with terms of redemption.</p> <p>Debentures as collateral security and interest on debentures.</p> <p><u>Redemption of debentures:</u> <u>sources of finance for the redemption of debentures:</u> Redemption from the proceeds of fresh issue of shares and debentures. Redemption of debentures out of capital. Redemption of debentures out of profits.</p> <p><u>Methods of Redemption:</u> Lump sum, Draw of lots, purchase in the open markets immediate cancellation and as an investment.</p>	Smart Board
September	19	Revision & Discussion on Question paper	
October	18	<p>Unit3. Topics</p> <p>Analysis of financial statement</p>	<ul style="list-style-type: none"> • Develop the understanding of major headings and subheadings

		<p>Financial statement of a company: statement of profit and loss and balance sheet in the prescribed form of company's balances sheet as per schedule III of company's act 2013.</p> <p>Financial statement analysis: Objectives and limitations and benefits.</p> <p>Tools for financial statement analysis:</p> <p>Ratio analysis: Objectives, classification and computation:</p> <p>Liquidity ratios: Current ratio and quick ratio</p> <p>Solvency ratios: Debt/Equity, Total assets to debt ratio, proprietary ratio, Interest coverage ratio.</p> <p>Activity ratios: Inventory turnover ratio, Trade payable turn over ratio,, Receivable turnover ratio, Working capital turnover ratio.</p> <p>Profitability ratios: Gross profit ratio, Net profit ratio, Operating ratio, Return on Investment.</p>	<p>(as per Schedule III to the Companies Act, 2013) of balance sheet as per the prescribed norms / formal.</p> <ul style="list-style-type: none"> • State the meaning, objectives and limitations of financial statement analysis. • describe the meaning of different tools of 'financial statements analysis'. • Develop the understanding of preparation of comparative and common size financial statements. • Know the meaning, objectives and significance of different types of ratios. • develop the understanding of computation of current ratio and quick ratio. • Develop the skill of computation of debt equity ratio, total asset to debt ratio, proprietary ratio and interest coverage ratio. • Develop the skill of computation of inventory turnover ratio, trade receivables and trade payables ratio and capital turnover ratio. • Develop the skill of computation of gross profit ratio, operating ratio, operating profit ratio, net profit ratio and return on investment.
November	16	<p>Tools for financial statement analysis</p> <p>Comparative statements, common size statements,</p> <p>Unit 4:Cash flow statement</p> <p>Meaning, objectives, preparation of cash flow statement.</p> <p>Preparation of cash flow statement.</p> <p>Financial statement of non profit organisation:</p> <p>Concept, features, distinctions between income and expenditure account and profit and loss account.</p> <p>Preparation of Income and Expenditure account and balance sheet of opening date and closing date. (with adjustment)</p> <p>Preparation of comprehensive problems on income and expenditure account.</p> <p>Project work: Project file.</p> <p>Revision</p>	<ul style="list-style-type: none"> • State the meaning and objectives of cash flow statement. • Develop the understanding of preparation of Cash Flow Statement using Indirect method as per AS 3 with given adjustments.
December	20	<p>Revision of complete syllabus, Discussion of Sample papers and CBSE model question paper. Pre-Board Examination</p>	
January	17	<p>Discussion of Pre-Board Question papers.</p>	

Subject :- Business Studies

Text Book : Business Studies – for Class XII - NCERT.

Ref. Book : Business Studies - XII by Poonam Gandhi.

Month **Topics**

Projects / inclusive teaching

April (21)	<p>Part–A: Principles & Functions of Management. <u>Chapter – 1 : Nature & Significance of Management</u> Management - concepts, objectives & importance Nature of Management – science, art & profession Levels of Management – top, middle & lower. Management functions – planning, organizing, staffing, directing and controlling Coordination – nature & importance.</p>	<p>Inclusive – Mr. Nirmalya (Arts) will brief the students on how there is a similarity between dance and management. Video on Management</p>
	<p><u>Chapter – 2 : Principles of Management</u> Meaning – nature & significance. Fayol's Principles of Management Taylor's scientific management – principles & techniques</p>	<p>Students will study their own school and see whether principles of management have been adopted here or not and to what extent. They also need to identify areas requiring attention.</p>
	<p><u>Chapter – 3 : Business Environment</u> Meaning & Importance Dimensions – economic, social, legal, political and technological, Economic environment in India Impact of Government policy changes on business & industry Policies of privatization, liberalization and globalization. Demonetization : Concept and features</p>	<p>Inclusive- Dr. Manisha Tiwari will brief the students about economic reforms and their implications on business org. Motivational video</p>
May (8)	<p><u>Chapter – 4 : Planning</u> Meaning, features, importance, limitations Planning process Types of plans – single use and standing plans – objectives, goals, strategy, policy, procedure, method, rule, budget & programme.</p>	<p>Students will be asked to identify the different plans being followed in their school like goal, objective, policy etc.</p>
June (15)	<p>Limitations : internal and external</p>	<p>Submission of Project work</p>
	<p><u>Chapter – 5 : Organizing</u> Meaning, importance, steps in organizing Structure of Organization – functional & divisional structures Types - formal & informal organization Delegation – meaning, elements & importance, Decentralization – meaning & importance. Difference between delegation and decentralization Principles of organizing</p>	<p>Students will be asked to identify the steps, activities and resources required for having a house function in school.</p>
July (22)	<p><u>Chapter – 6 : Staffing</u> Meaning, need, importance, staffing as part of HRM Steps in staffing process Recruitment – meaning, sources Selection – meaning, process, Training & Development – meaning, need & methods.</p>	<p>Case studies of staffing policies being followed in different org. will be taken up.</p>

	<p><u>Chapter – 7 : Directing</u> Meaning, importance & principles, Elements of direction</p> <ul style="list-style-type: none"> • Supervision – meaning, functions • Motivation – meaning, importance, Maslow's theory of motivation, Financial & Non-financial incentives • Leadership – meaning, importance, qualities, styles – authoritative, democratic and laissez faire • Communication – meaning, importance, formal & informal communication, barriers to effective communication and how to overcome these barriers 	<p><u>Inclusive-</u> Eminent social personality and Mrs. E. Sharmila will be asked to give tips on leadership and effective communication. Anecdote</p> <p>The students will be asked to identify their goal, review their performance to find deviations and prepare a response to check deviation</p>
<p>August (22)</p>	<p><u>Chapter – 8 : Controlling</u> Meaning, nature & importance, relationship between planning & controlling Steps in the process of control Techniques of controlling – modern & traditional Budgetary control</p> <p>Part B - Business Finance and Marketing <u>Chapter – 9 : Financial Management</u> Meaning, role, objectives of financial management Financial, Investment & Dividend decision – meaning & factors affecting these decisions. Financial planning – meaning & importance Capital structure – meaning, factors affecting capital structure Fixed & working capital – meaning & factors affecting their requirement.</p> <p><u>Chapter – 10 : Financial Markets</u> Concept of Financial Markets : money market – nature & instruments. Capital markets – nature & types – Primary & secondary markets Difference between capital & money market Stock exchange – meaning, functions, NSEI, OTCEI, trading procedure SEBI – objectives & functions.</p>	<p>Any Brokerage firm will be called to brief the students about the intricacies of stock markets.</p>
<p>September (19)</p>	<p>Depository services and Demat account Revision</p> <p>Half-Yearly Examination</p> <p><u>Chapter – 11 : Marketing</u> Meaning, functions, role, Marketing philosophies. Distinction between marketing & selling.</p>	
<p>October (18)</p>	<p>Marketing mix – concept & elements Product – nature & classification, branding, labeling, packaging Physical distribution – meaning & role, channels – types & factors, choice Promotion – meaning & role, mix, role of advertising, Personal</p>	<p>Students will be asked to conduct a survey and present a report on the different marketing strategies being followed by different business organizations.</p>
<p>November (16)</p>	<p>selling, sales promotion & objections to advertising Publicity – role Price – factors influencing price. Public relations – concept and role</p> <p><u>Chapter – 12 : Consumer Protection</u> Importance of consumer protection and consumers rights.</p>	<p>Submission of PPT on selected project</p>

Consumers Rights – who can file a case and against whom
 Consumers Responsibilities, ways & means of consumer's
 protection. Consumer awareness & legal redressal with special ref.
 to Consumer protection Act, 1986.
 Role of consumer organization & NGOs.

December (20)	Revision of all chapters. Solving previous years Board-Exam question papers. Solving sample papers. Pre-board Exam
January (17)	Discussion on Pre-board Examination question paper and sample papers.

Subject :- Hindustani Vocal Music

Month	W. D.	Topics
April	21	<ul style="list-style-type: none"> • Definition of the following Alankar • Varna • Meed • Khatka • Kan Introduction of Raag Bhairav with Bandish
May+June	05+15	Taal Ek taal, Jhap taal with dugun practice with hand bits, Notation of Raag Bhairav with bandish with 8 and 16 matra tune. Learning Outcomes: Times Theory and classification of Raag
July	22	Taal Rupak with Dugun. Biography of Ustad Abdul Karim Khan and ustad Fayyaz Khan.
August	22	Raag malkuns Introductions and description with Bandish Notation of Raag malkuns and bhamni in Teen taal
September	19	Revision Half Yearly
October	18	Definition of Murki, Gamak, Murchana, Grama laya and taal Raag Bageshwari, Introduction with Bandishand 8 and 16 mantra Taan and sargam
November	16	History of ancient Hindustani music with special reference to Sangeet Ratnakar and sangeet parijat. Notation on Raag Bhairavi/Bageshwari.
December	20	Biography on Pd. Krishan Shankar Rao and Ustad Bade Ghulam Ali Khan Introduction on Raag Bhairavi with Bandish 8 and 16 Mantra taan sargam
January	17	Revision on Taal – Tilwada, Dhamur Taal with dugun, Practices with Hand's beat and revision of Raag Bhairvi and Bageshwari
February	21	Annual Examination

Subject : Fine Arts

Month	W.D.	Particulars
April	21	Theory – Introduction to Indian Minature painting Pract. – Still life
May +June	05+1 5	Theory : Rajasthani and Pahari schools of Minature painting Pract. – Still life
July	22	Theory – Mughal and Deccan School of Minature painting Pract. – Nature study
August	22	Theory – Era in Indian Art Pract. – Nature study
September	19	Theory – evolution of the Indian National Flag Pract. – Human sketching
October	18	Theory – Bengal school of Painting Pract. – Use of water colour

November	16	Theory: Introduction to Modern trends in Indian Art Pract – Use of water colour
December	20	Theory: Paintings of the contemporary (Modern) Indian art Pract. – Composition in water colour

Subject : Physical Education (General)

Month	W.D	Topics to be Covered
April, may & june	20+6+ 15	CHAPTER – 1 : General fitness, chess, badminton, volleyball and football 1. Students will be learning about warming up (general & specific) & free hand exercises & how to improve their motor skills abilities & fitness. 2. Students will be learning about basic & advanced skills of above mentioned games. 3. Selection will be done on the basis of their performance and command on the skills for inter house, Inter DPS & cluster tournaments. 4. Students will learn the rules and regulations of above mentioned games. 5. Students will use the learnt skills in real match situations. 6. Students will be learning about the basic skills of all the events of track & field. 7. Will learn about elements & importance of yoga & will practice different asanas 8. Fitness activity and Yoga
Aug. & Sept.	23+19	CHAPTER - 2 :- Basketball, volleyball, football, athletics and Kabaddi . 1. Athletics & yoga will be continued in this session also. 2. Selection will be done on the basis of their performance and command on the skills for inter house, Inter DPS & cluster tournaments. 3. Students will learn the rules and regulations of above mentioned games. 4. Students will use the learnt skills in real match situations. 4. Psychological aspects of physical education. 5. Students will learn how to improve their motor skills abilities. 6. Fitness activity and Yoga Half Yearly Practical test

Subject : General Studies

Month	W.D.	Topics to be covered
April	21	(A) PLANNING PROCESS IN INDIA 1. Transforming the nation into a developed country. 2. Win at overcoming technology overload. 3. Importance of rationalism. 4. Science is the new God.
May	05	(B) SCIENTIFIC SPIRITS. 1. Increase in cyber attacks – wanted cyber security experts.
June	15	SCIENTIFIC SPIRIT 2. Win at staying healthy.
July	22	(C) HUMAN DEVELOPMENT 1.Orion: Making interplanetary travel a reality. 2. Use of lethal force by law enforcement agencies has been a cause of great controversy. 3. Win at productivity by learning about ergonomics and how can it be beneficial. 4. Censor to control.
August	22	(D) EDUCATING THE PUBLIC 1. Upping your mind power. 2. Win at overcoming techno load. 3. India’s wild life heritage.
September	19	REVISION FOR HALF YEARLY EXAMINATION.
October	18	(E) NURTURING FREEDOM 1. Free speech in India – Myth or Mystery 2. Success comes with Ability, Boldness and Courage.
November	16	3. Human Rights as means of harmonious world order.

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