

**NEW ERA PUBLIC SCHOOL, DWARKA****SYLLABUS 2018-19****CLASS : XII****SUBJECT: ENGLISH**

<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>	<b>WRITING SKILLS</b>	<b>ACTIVITIES</b>
MARCH (10)	The Last Lesson My Mother at 66	Notice Writing Article Writing	Group Discussion
APRIL (20)	The Tiger King Aunt Jennifer's Tigers	Poster Making Advertisement	Extempore
MAY (17)	Lost Spring Deep Water Keeping Quiet	Comprehension Passages	Debate
JUNE (2)		Note Making	
JULY (21)	The Rattrap The Enemy An Elementary School...	Formal Letters Job Application	Project
AUGUST (21)	Memories of a Childhood Going Places A Thing of Beauty	Debate Speech	PPT Presentation
SEPTEMBER (9)	Revision		
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>	<b>WRITING SKILLS</b>	<b>ACTIVITIES</b>
OCTOBER (19)	Indigo Should Wizard Hit Mommy	Report Writing	Debate
NOVEMBER (15)	Evans Tries an O Level On the Face of It.	Invitation	Enactment
DECEMBER (18)	Revision		

## SUBJECT: PHYSICS

MONTH / DAYS	UNIT/ PERIODS	SCOPE/SUB TOPICS
MARCH - APRIL	Unit I : Electrostatics (25)	<p>Electrostatics : Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside). Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, 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.</p> <p><b>PRACTICAL</b></p> <ol style="list-style-type: none"><li>1) To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.</li><li>2) To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material.</li><li>3) To verify the laws of combination (series/parallel) of resistances using a metre bridge.</li><li>4) To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.</li></ol> <p><b>ACTIVITY</b></p> <ol style="list-style-type: none"><li>1) To assemble the components of a given electrical circuit.</li></ol>

MAY-JUNE	<p>Unit II : Current Electricity (22)</p> <p>Unit III : Magnetic Effects of Current (14)</p>	<p>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 combinations of resistors; temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel. Kirchhoff's laws and simple applications. Wheatstone bridge, metre bridge. Potentiometer - principle and its applications to measure potential difference and for comparing emf of two cells; measurement of internal resistance of a cell.</p> <p>Oersted's Exp, Biot Savart Exp &amp; its applications, Ampere's circuital law, application</p> <p><b>PRACTICAL</b></p> <p>5) Using potentiometer find internal resistance of a primary cell.</p> <p>6) To compare the emf's of two given primary cells using potentiometer.</p> <p><b>ACTIVITY</b></p> <p>2) To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.</p> <p>3) To study the variation in potential drop with length of a wire for a steady current</p>
JULY	<p>Unit III : Magnetic Effects of Current (14)</p> <p>Magnetism (10)</p> <p>Unit IV : Electromagnetic Induction (8)</p> <p>Alternating Current (10)</p> <p>E.M. Waves (5)</p>	<p>Force between two parallel wires, Force on a current carrying conductor, torque, moving coil galvanometer, conversion into ammeter, voltmeter, force on a moving charge in a magnetic field, cyclotron.</p> <p>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 its axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements. Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths. Permanent magnets.</p> <p>Electromagnetic induction; Faraday's laws, induced emf and current; Lenz's Law, Eddy currents. Self and mutual induction. Alternating currents, peak and rms value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, wattless current. AC generator and transformer.</p> <p>EM waves- displacement current, characteristics of EM waves, transverse nature, electromagnetic spectrum- facts and uses</p>



		<p>12) Concave lens using convex lens.</p> <p><b>ACTIVITY</b></p> <p>5) To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.</p> <p>6) To observe polarization of light using two Polaroids.</p>
SEPTEMBER	Unit VIII : Atoms & Nuclei (5)	<p>Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, Hydrogen spectrum. Composition and size of nucleus, atomic masses, isotopes, isobars; isotones.</p> <p>Radioactivity alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.</p>
OCTOBER	Unit IX : Electronic Devices (14)	<p>Electronic Devices Energy bands in solids (Qualitative ideas only) conductor, insulator and semiconductor; semiconductor diode – I-V characteristics in forward and reverse bias, diode as a rectifier; I-V Characteristics of LED, photodiode, solar cell, and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor, transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND and NOR). Transistor as a switch.</p> <p><b>PRACTICAL</b></p> <p>13) To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias.</p> <p>14) To study the characteristic of a common - emitter npn or pnp transistor and to find out the values of current and voltage gains.</p> <p>15) To draw the characteristic curve of a zener diode and to determine its reverse break down voltage.</p>
NOVEMBER	Unit X : Principles Of Communication (7)	<p>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</p>

## SUBJECT: CHEMISTRY

MONTHS & DAYS	CHAPTER / PERIODS / WEIGHTAGE	SCOPE / PERIODS	PRACTICALS
March – 10 days April – 19 days May – 17 days	<ul style="list-style-type: none"> <li>Electrochemistry (14) (5 marks)</li> </ul>	Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law (5) Electrolysis and law of electrolysis (elementary idea) (1) Dry cell-electrolytic cells and Galvanic cells, lead accumulator, EMF of a cell, standard electrode potential (3) Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell (4) Fuel cells, corrosion (1) <b>ICT-</b> 1. Faraday's laws of electrolysis <b>Core Learning:-</b> <b>(i) Interpretation of electrode potential.</b> <b>(ii) Concept of oxidant and reductant.</b> <b>(iii) Nernst equation.</b> <b>(iv) Basic difference between electrolytic and electronic conductance.</b>	<ul style="list-style-type: none"> <li>Preparation of standard solution of Oxalic acid along with weighing of required amount of crystalline oxalic acid for the preparation of its solution.</li> <li>Titration of <math>\text{KMnO}_4</math> vs given Oxalic acid.</li> <li>Preparation of standard solution of Mohr's Salt along with weighing of required amount of crystalline Mohr salt for the preparation of its solution.</li> </ul>
	<ul style="list-style-type: none"> <li>Solutions (15) (5 marks)</li> </ul>	Types of solutions, expression of concentration of solutions of solids in liquids (4) Solubility of gases in liquids, solid solutions, Raoult's law (3) Colligative properties – relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure (4) Determination of molecular masses using colligative properties, abnormal molecular mass, van't Hoff factor (3) <b>ICT-</b> Factors affecting solubility <b>Core Learning:-</b> <b>(i) Concentration.</b> <b>(ii) Effect of impurities on vapour pressure, boiling point and melting point.</b> <b>(iii) Difference between osmosis and diffusion.</b>	<ul style="list-style-type: none"> <li>Titration of <math>\text{KMnO}_4</math> vs given Mohr's Salt</li> </ul>
	<ul style="list-style-type: none"> <li>Solid State (13) (4 marks)</li> </ul>	Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids (2) Amorphous and crystalline solids (elementary	<ul style="list-style-type: none"> <li>Chromatography and find <math>R_f</math> value of two coloured components of mixture</li> </ul>

		<p>idea) (1)  Unit cell in two dimensional and three dimensional lattices (2)</p> <p>Calculation of density of unit cell (1) Packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell (2)  Point defects (2)  Electrical and magnetic properties (1)  Band theory of metals, conductors, semiconductors and insulators and n and p type semiconductors (2)  <b>ICT-</b> 1. Various types of crystals and crystal lattices.  2. Difference between crystalline and amorphous solids  3. Close packing arrangement  <b>Core Learning:-</b>  <i>(i) Elementary idea of amorphous and crystalline solids.</i>  <i>(ii) Types of solids.</i></p>	<ul style="list-style-type: none"> <li>• Investigato-ry project</li> </ul>
	<ul style="list-style-type: none"> <li>• Chemical Kinetics (12) (5 marks)</li> </ul>	<p>Rate of a reaction (Average and instantaneous) (1)  Factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate (4)  Constant, integrated rate equations and half life (only for zero and first order reactions) (4)  Concept of collision theory (elementary idea ,no mathematical treatment) (1)  Activation energy, Arrhenius equation (2)  <b>ICT-</b> 1. Factors affecting rate of reaction  <b>Core Learning:-</b>  <i>(i) Rate of a reaction and factors affecting it.</i>  <i>(ii) Interpretation of the Arrhenius equation.</i></p>	
	<ul style="list-style-type: none"> <li>• Polymers (5) (3 marks)</li> </ul>	<p>Classification – natural and synthetic, methods of polymerization (addition and condensation) (2)  Copolymerization, some important polymers: natural and synthetic like polythene, nylon, polyesters, bakelite, rubber (2)  Biodegradable and non-biodegradable polymers(1)  <b>Core Learning:-</b>  <i>(i) Classification of polymers on the basis of intermolecular forces of attraction.</i>  <i>(ii) Uses of various polymers in day-to-day life.</i></p>	

<p>June – 3 days July – 20 days</p>	<ul style="list-style-type: none"> <li>• Surface Chemistry (14) (4 marks)</li> </ul>	<p>Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids (4) Catalysis, homogenous and heterogeneous activity and selectivity (2) Enzyme catalysis and zeolites (2) Colloidal state distinction between true solutions, colloids and suspension (1) Lyophilic, lyophobic, multimolecular and macromolecular colloids and associated colloids (2) Properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation (2) Emulsion - types of emulsions (1) <b>ICT-</b> 1. Animation on absorption, adsorption and catalysis <b>Core Learning:-</b> <b>(i) What is adsorption and absorption?</b> <b>(ii) Classification of colloids and their application in daily life.</b></p>	<ul style="list-style-type: none"> <li>• Detection of carbohydrates, fats and proteins in the given food sample.</li> <li>• Tests for functional groups: alcohol, phenol, aldehyde, ketone and carboxylic acid.</li> <li>• Preparation of starch and <math>\text{Fe}(\text{OH})_3</math> sol.</li> </ul>
	<ul style="list-style-type: none"> <li>• The p-Block Elements (12) (8 marks)</li> </ul>	<p><u>Group -15 Elements</u>: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties. (1) Nitrogen preparation properties and uses; compounds of Nitrogen, preparation and properties of Ammonia and Nitric Acid, Oxides of Nitrogen (Structure only) (2) Phosphorus - allotropic forms, compounds of Phosphorus: Preparation and Properties of Phosphine, Halides and Oxoacids (elementary idea only) (2) <u>Group 16 Elements</u>: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties (1) Dioxygen : preparation, properties and uses; classification of oxides; Ozone (1) Sulphur -allotropic forms; compounds of sulphur : preparation, properties and uses of sulphur-dioxide; sulphuric acid: industrial process of manufacture, properties and uses; Oxoacids of sulphur (Structures only) (2) <u>Group 17 Elements</u>: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties (1)</p>	<ul style="list-style-type: none"> <li>• Preparation of crystals of a double salt</li> </ul>



		<p>Compounds of halogens, preparation, properties and uses of Chlorine and hydrochloric acid (2) interhalogen compounds, oxoacids of halogens (structures only) (1)</p> <p><u>Group 18 Elements</u>: General introduction, electronic configuration, occurrence, trends in physical (1) chemical properties, uses (1)</p> <p><b>ICT-</b> 1. Laboratory preparation of various compounds 2. Dehydration properties of H<sub>2</sub>SO<sub>4</sub></p> <p><b>Core Learning:-</b> <b>Minerals and their formula lying in p-Block.</b></p>	
August – 22 Days	<ul style="list-style-type: none"> <li>• Haloalkanes and Haloarenes (10) (4 marks)</li> <li>• Alcohols, Phenols and Ethers (10) (4 marks)</li> <li>• Aldehydes, Ketones and Carboxylic Acids (10) (6 marks)</li> <li>• Nitrogen</li> </ul>	<p>Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation (5) Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in monosubstituted compound only) (4) Uses and environmental effects of dichloromethane, chloroform, tetrachloromethane, iodoform, freons, DDT (1)</p> <p>Alcohols: Nomenclature, methods of preparation, physical and chemical properties, identification of primary, sec and tertiary alcohol, mechanism of dehydration, uses with special reference to methanol and ethanol (4) Phenols: Nomenclature, methods of prep, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols (4) Ethers: Nomenclature, methods of prep, physical and chemical properties, uses (2)</p> <p>Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of prep (2) physical and chemical properties, mechanism of nucleophilic addition (3) Reactivity of alpha hydrogen in aldehydes, uses. (1) Carboxylic Acids: Nomenclature, acidic nature (1) Methods of prep, physical properties (2) chemical properties, uses (2)</p> <p>Amines: Nomenclature, classification and</p>	<ul style="list-style-type: none"> <li>• Salt Analysis for unknown salts</li> </ul>

	<p>containing Compounds- Amines and diazonium salts (6) (4 marks)</p>	<p>structure (1)  Methods of preparation (1)  Physical and chemical properties, uses  Identification of primary, secondary and tertiary amines (2)  Cyanides and isocyanides will be mentioned at relevant places in text.  Diazonium Salts: Preparation, chemical reactions and importance in synthetic organic chemistry (2)</p> <p><b>Core Learning:-</b>  1. Stability of carbocations, carbanions and free radicals.  2. Mechanistic pathways of some important organic reactions.  3. Uses and formula of organic compounds in daily life.</p>	<p>First Term Practical Examinations</p>
September	Revision		<ul style="list-style-type: none"> <li>• First Term Examinations</li> </ul>
October – 17 days	<ul style="list-style-type: none"> <li>• Coordination Compounds (10) (3 marks)</li> </ul>	<p>Coordination compounds - Introduction, ligands, coordination number, IUPAC nomenclature of mononuclear coordination compounds (3)  Structure and stereoisomerism (1)  Werner's theory, VBT and CFT, colour, magnetic properties and shapes, back -bonding (5)  Importance of coordination compounds (in qualitative inclusion, extraction of metals and biological system) (1)</p> <p><b>Core Learning:-</b>  <i>(i) Importance of coordination compounds.</i>  <i>(ii) Reason behind the colour of various complexes.</i></p>	<ul style="list-style-type: none"> <li>• Preparation of organic compounds (any two) <ul style="list-style-type: none"> <li>➤ Dibenzal acetone</li> <li>➤ Acetanilide</li> <li>➤ Iodoform</li> </ul> </li> <li>• To study the effect of concentration of <math>\text{Na}_2\text{S}_2\text{O}_3</math> on rate of reaction in between <math>\text{Na}_2\text{S}_2\text{O}_3</math> and <math>\text{HCl}</math>.</li> </ul>
	<ul style="list-style-type: none"> <li>• The d - and f - block elements (10) (5 Marks)</li> </ul>	<p>General introduction, electronic configuration, occurrence and characteristics of transition metals (1)  General trends in properties of the first row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation (4)  Preparation and properties of <math>\text{K}_2\text{Cr}_2\text{O}_7</math> and <math>\text{KMnO}_4</math> (3)  Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences (1)  Actinoids - Electronic configuration, oxidation</p>	

	<ul style="list-style-type: none"> <li>• General Principles and processes of Isolation of Elements (8) (3 Marks)</li> </ul>	<p>states and comparison with lanthanoids (1)</p> <p><b><u>Core Learning:-</u></b></p> <p><b>(i) Basic differences in the properties of s, p, d and f-Block elements.</b></p> <p><b>(ii) Uses of <math>K_2Cr_2O_7</math> and <math>KMnO_4</math>.</b></p> <p>Principles and methods of extraction – concentration (2)</p> <p>Oxidation, reduction - electrolytic method (1)</p> <p>Occurrence and principles of extraction of aluminium, copper, zinc and iron (3)</p> <p>Refining (2)</p> <p><b><u>ICT-</u></b> 1. Various methods of separation and purification</p> <p>2. Flow chart on metallurgy</p> <p><b><u>Core Learning:-</u></b></p> <p><b>Steps of metallurgy and the principles behind metallurgical processes.</b></p>	
<p>November – 8 days</p>	<ul style="list-style-type: none"> <li>• Biomolecules (8) (4 Marks)</li> <li>• Chemistry in everyday life (6) (3 Marks)</li> </ul>	<p>Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose) D-L configuration, oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen), importance of carbohydrates (4)</p> <p>Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins (2)</p> <p>Enzymes, hormones - Elementary idea excluding structure.</p> <p>Vitamins - Classification and functions (1)</p> <p>Nucleic Acids: DNA and RNA (1)</p> <p><b><u>ICT-</u></b> 1. Various types of macromolecules</p> <p><b><u>Core Learning:-</u></b></p> <p><b>(i) Types of carbohydrates and their uses.</b></p> <p><b>(ii) Proteins and its biological activity.</b></p> <p><b>(iii) Types of proteins and their importance.</b></p> <p><b>(iv) Basic difference between DNA and RNA.</b></p> <p>Chemicals in medicines - analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines (4)</p> <p>Chemicals in food - preservatives, artificial</p>	

		sweetening agents, elementary idea of antioxidants (1) Cleansing agents- soaps and detergents, cleansing action (1) <b><u>Core Learning:-</u></b> <b>(i) Chemicals in medicines.</b> <b>(ii) Chemicals in food.</b> <b>(iii) Soap and detergents and their cleansing action.</b>	
December – 18 days	<ul style="list-style-type: none"> <li>• First Pre - Board Theory and Practical Exams</li> </ul>		
January – 15 days	<ul style="list-style-type: none"> <li>• Second Pre - Board Exams</li> </ul>		

## SUBJECT: BIOLOGY

<b>MONTH &amp; WORKING DAYS</b>	<b>CHAPTER WEIGHTAGE</b>	<b>SUB TOPIC/SCOPE AND ICT</b>	<b>PRACTICALS</b>	<b>CORE LEARNING</b>
MARCH-(09)	REPRODUCTI ON (17)	<p>1. Reproduction, asexual and sexual reproduction, binary fission, sporulation, budding, gemmule etc...;</p> <p>2. Sexual reproduction in flowering plants, flower structure, development of male and female gametophytes, pollination agencies, outbreeding devices, pollen-pistil interaction, double fertilization, post fertilization changes and parthenocarpy.</p>	<p>1. Study pollen germination-slide and stigma.</p> <p>2. Flowers adapted to pollination by different agencies.</p> <p>3. Study of controlled pollination</p> <p>4. Prepare and study mitosis in onion root tip</p>	<p>1. Difference between sexual and asexual methods of reproduction.</p> <p>2. Double fertilization in flowering plants.</p> <p>3. parthenocarpy.</p>



		<p>evolution. ICT: PPT on principles of genetics, molecular basis of inheritance &amp; evolution in humans will be shown.</p>		
JUNE-2 JULY-21	<p>BIOTECHNOLOGY AND ITS APPLICATIONS</p> <p>HEALTH AND DISEASES</p>	<p>1. Principles &amp; processes of Biotechnology-genetic engineering 2. Applications of biotechnology in health and agriculture-human insulin &amp; vaccine production, gene therapy, GMO-Bt crops, transgenic animals, biopiracy &amp; patents. 1. Health &amp; diseases, pathogens, basic concepts of immunology, vaccines, cancer, HIV, &amp; AIDS, adolescence, drug &amp; alcohol abuse. ICT: Ppt on Principles and processes of biotechnology, applications of biotechnology, human health and diseases will be shown.</p>	<p>12, Study presence of suspended particulate matter. 13. Study effect of temperature and pH on salivary amylase. 14. Identification of common disease causing organisms.</p>	<p>12. Isolation of DNA. 13. Insertion of DNA in a cell with vector like plasmids. 14. Making of human insulin. 15. Bt crops and gene therapy. 16. life cycle of plasmodium. 17 Substance abuse and prevention of AIDS.</p>
AUGUST-21	<p>IMPROVEMENT IN FOOD PRODUCTION(14)</p> <p>MICROBES IN HUMAN WELFARE ORGANISMS AND POPULATIONS</p>	<p>2. Improvement in food production-plant breeding, tissue culture, SCP, bio-fortification, apiculture &amp; animal husbandry. 3. In household food processing, industrial production, sewage treatment, bio pesticides &amp; bio fertilizers. PPT on improvement in food production will be shown. 1. Habitat &amp; niche, population &amp; ecological adaptations, population interaction, population attributes</p>	<p>15. Study of 2 plants and animals found in xerophytic conditions. 16. Study of plants and animals found in aquatic conditions.</p>	<p>18. Plant breeding, tissue culture. 19. Sewage treatment, biopesticides and bio fertilizers. 20. Ecological adaptations. 21 Population interactions.</p>
SEPTEMBER-5		.Revision		
OCTOBER-19	ECOSYSTEM	2. Ecosystem patterns, components, productivity &	17. Study soil for texture,	22, Ecosystem components.

	<p>Biodiversity &amp; its Conservation</p> <p>ENVIRONMENTAL ISSUES</p>	<p>decomposition, energy flow, pyramids, nutrient cycling, ecological succession.</p> <p>3. Concept, pattern, importance, loss &amp; conservation of biodiversity, hot spots, endangered species, extinction, red data book, bio reserves, national parks &amp; sanctuaries.</p> <p>PPT on Microbes in human welfare, organisms &amp; populations, Ecosystems biodiversity &amp; conservation will be shown,</p> <p>1. Air &amp; water pollution &amp; its control, agro chemicals, solid &amp; radioactive waste management, greenhouse effect, global warming, ozone depletion, deforestation.</p> <p>PPT on environmental issues will be shown.</p>	<p>moisture content, pH and water holding capacity.</p> <p>18. Study of plant population, density and frequency.</p>	<p>23. Energy flow in an ecosystem.</p> <p>23. Ecological succession.</p> <p>24. Importance of biodiversity and its conservation.</p> <p>25. Roles of National parks and sanctuaries.</p> <p>26. Green house effect. Global warming. Ozone depletion.</p>
NOVEMBER-8		Revision		

### SUBJECT: MATHEMATICS

MONTH & WORKING DAYS	UNIT/ CHAPTER/ SUB TOPICS
MARCH (10)	<ul style="list-style-type: none"> <li>• Matrices : Notation, types of matrices, addition, subtraction and multiplication of matrices and their properties, elementary row and column operations, symmetric &amp; skew symmetric matrices, inverse of a matrix.</li> </ul>
APRIL (20)	<ul style="list-style-type: none"> <li>• Determinants : Determinant of a square matrix, properties, Adjoint and inverse, consistency and inconsistency, applications.</li> <li>• Inverse trigonometric functions : Definition, range, domain, principal value branches, Graphs, elementary properties of inverse functions.</li> </ul>
MAY (17)	<ul style="list-style-type: none"> <li>• Continuity and Differentiability : Continuity, derivatives of composite functions, inverse trigonometric functions and logarithmic functions, parametric forms, second order derivatives, Rolle's and Lagrange's Mean Value Theorem and geometric interpretations.</li> <li>• Applications of Derivatives : Rate of change, increasing /decreasing functions, tangents and normals, use of derivatives in approximation, maxima and minima.</li> </ul>



JUNE (2)	<ul style="list-style-type: none"> <li>• Applications of Derivatives (Contd.) : Simple problems</li> </ul>
JULY (21)	<ul style="list-style-type: none"> <li>• Integrals : Integration as inverse process of differentiation, substitution method, partial fractions and by parts, simple integrals based on formulae, integral as limit of a sum, fundamental theorem of calculus, definite integrals.</li> <li>• Applications of integrals : Finding area under simple curves, area between two curves.</li> </ul>
AUGUST (21)	<ul style="list-style-type: none"> <li>• Probability : Conditional probability, multiplication theorem, independent events, total probability, Baye's theorem, random variable and its probability distribution, mean and variance of random variable, (Bernauli) repeated trials and binomial distribution.</li> <li>• Vectors : Vectors and scalars, magnitude and direction, direction cosines and ratios, types of vectors, position vector, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector dividing a line segment in given ratio, dot and cross products.</li> </ul>
SEPTEMBER (9)	<ul style="list-style-type: none"> <li>• Three dimensional geometry : Direction ratios and cosines of line joining two points, Cartesian and vector equation of a line, shortest distance between two lines, Cartesian and vector equation of a plane, angle between two lines and two planes, distance of a line from a plane.</li> </ul>
<b>TERM II</b>	
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>
OCTOBER (19)	<ul style="list-style-type: none"> <li>• Differential Equations : Order and degree , general and particular solutions, formation of differential equations whose solution is given. Solution of differential equation by method of separation of variables, homogeneous differential equations. Solution of differential equations using integrating factors.</li> </ul>
NOVEMBER (15)	Revision Pre board I
DECEMBER (18)	Revision Pre board II
JANUARY (18)	Pre board II
FEBRUARY (20)	Revision

## SUBJECT: COMPUTER SCIENCE

TERM I	
MONTH & WORKING DAYS	UNIT/ CHAPTER/ SUB TOPICS
MARCH (10)	<p><b><u>UNIT – 1 OBJECT ORIENTED PROGRAMMING IN C++</u></b></p> <p>REVIEW: C++ covered In Class – XI</p> <p><b>Object Oriented Programming:</b> Concept of Object Oriented Programming – Data hiding, Data encapsulation, Class and Object, Abstract class and Concrete class, Polymorphism (Implementation of polymorphism using Function overloading as an example in C++); Inheritance, Advantages of Object Oriented Programming over earlier programming methodologies,</p> <p><b>Implementation of Object Oriented Programming concepts in C++:</b> Definition of a class, Member of a class – Data Members and Member Functions (methods), Using Private and Public visibility modes, default visibility mode (private); Member function definition: inside class definition and outside class definition using scope resolution operator (::); accessing members from object (s), Objects as function arguments–pass by value and pass by reference;</p>
APRIL (20)	<p><b>Constructor and Destructor:</b> Constructor: special characteristics, declaration and definition of a constructor, default constructor, overloaded constructors, copy constructor, constructor with default arguments; Destructor: Special Characteristics, declaration and definition of destructor;</p> <p><b>Inheritance (Extending Classes):</b> Concept of Inheritances, Base Class, Derived classes, protected visibility mode; Single level inheritance, Multilevel inheritance and Multiple inheritance, Privately derived, publicly derived and Protectedly derived class, accessibility of members from objects and within derived class (es);</p> <p><b>Data File Handling:</b> Need for a data file, Types of data files – Text file and Binary file;</p> <p><b>Text File: Basic</b> file operations on text file: Creating/Writing text into file, Reading and Manipulation of text from an already existing text File (accessing sequentially).</p> <p><b>Binary File:</b> Creation of file, Writing data into file, Searching for required data from file, Appending data to a file, Insertion of data in sorted file, Deletion of data from file, Modification of data in a file;</p> <p>Implementation of above mentioned data file handling in C++; Components of C++ to be used with file handling:</p> <p>Header file: fstream.h; ifstream, ofstream, classes; Opening a text file in—in, out, and app modes; Using cascading operators (&gt;&gt;,&lt;&lt;) for writing text to the file and reading text from the file; open (), get (), read (), put (), write(), getline() and close() functions; Detecting end-of-file (with or without using eof() function), tellg(), tellp(), seekg(), seekp());</p> <p><b>Pointers:</b></p>

	<p>Introduction to Pointer, Declaration and Initialization of Pointer; Dynamic memory allocation/de-allocation operators: new, delete; Pointers and Arrays: Array of Pointers, Pointer to an array (1 dimensional array), Function returning a pointer, Reference variables and use of alias; Function call by reference. Pointer to structure: De-reference/Deference operator: *, -&gt;; self referential structure;</p>
<p>MAY + JUNE (17) (2)</p>	<p><b><u>UNIT 2: DATA STRUCTURES</u></b></p> <p>Introduction to data structure- array, stack queues primitive and non-primitive data structure, linear and non-linear structure, static and dynamic data structure.</p> <p><b>Arrays:</b> One and two Dimensional arrays: Sequential allocation and address calculation; One dimensional array: Traversal, Searching (Linear, Binary Search), Insertion of an element in an array, deletion of an element from an array, Sorting (Insertion, Selection, Bubble), Two-dimensional arrays: Traversal Finding sum/difference of two NxM arrays containing numeric values, Interchanging Row and Column elements in a two dimensional array;</p> <p><b>Stack (Array and Linked implementation of Stack):</b> Introduction to stack (LIFO: Last in First out Operations) Operations on stack (PUSH and POP) and its Implementation in C++, Converting expressions from INFIX to POSTFIX notation and evaluation of Postfix expression;</p> <p><b>Queue: (Array and Linked Implementation)</b> Introduction to Queue (FIFO: First in First out operations) Operations on Queue (Insert and Delete and its Implementation in C++, circular queue using array.</p>
<p>JULY (21)</p>	<p><b><u>UNIT 3: DATABASE MANAGEMENT SYSTEM AND SQL</u></b></p> <p><b>Data base Concepts:</b> Introduction to data base concepts and its need.</p> <p><b>Relational data model:</b> Concept of domain, tuple, relation, key, primary key, alternate key, candidate key;</p> <p><b>Relational algebra :</b> Selection, Projection, Union and Cartesian product;</p> <p><b>Structured Query Language:</b> <b>General Concepts:</b> Advantages of using SQL, Data Definition Language and Data Manipulation Language; <b>Data Types:</b> NUMBER/DECIMAL, CHAR/VARCHAR/VARCHAR2, DATE; <b>SQL COMMANDS:</b> CREATE TABLE, DROP TABLE, ALTER TABLE, UPDATE ....SET...., INSERT, DELETE; SELECT, DISTINCT, FROM, WHERE, IN, BETWEEN, GROUP BY, HAVING, ORDER BY;</p>
<p>AUGUST (21)</p>	<p><b><u>UNIT 3: DATABASE MANAGEMENT SYSTEM AND SQL</u></b></p> <p><b>SQL functions:</b> SUM ( ), AVG ( ), COUNT ( ), MAX ( ) AND MIN ( ); Obtaining results (SELECT query) from 2 tables using equi-join, Cartesian product and Union</p>

	<p><b><u>UNIT 4: BOOLEAN ALGEBRA</u></b></p> <p><b>Role of Logical Operations in Computing.</b>  Binary-valued Quantities, Boolean Variable, Boolean Constant and Boolean Operators: AND, OR, NOT; Truth Tables; Closure Property, Commutative Law, Associative Law, Identity law, Inverse Law, Principle of Duality, Idempotent Law, Distributive Law, Absorption Law, Involution Law, DeMorgan's Law and their applications; Obtaining Sum of Product (SOP) and Product of Sum (POS) form the Truth Table, Reducing Boolean Expression (SOP and POS) to its minimal form, Use of Karnaugh Map for minimization of Boolean expressions (up to 4 variables); Application of Boolean Logic: Digital electronic circuit design using basic Logic Gates (NOT, AND, OR, NAND, NOR)</p>
SEPTEMBER (9)	<p><b><u>UNIT 4: BOOLEAN ALGEBRA</u></b></p> <p>Use of Boolean operators (NOT, AND, OR) in SQL SELECT statements  Use of Boolean operators (AND, OR) in search engine queries.</p>
<b>TERM II</b>	
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>
OCTOBER (19)	<p><b><u>UNIT 5: NETWORKING AND OPEN SOURCE SOFTWARE</u></b></p> <p><b>Evolution of Networking:</b> ARPANET, Internet, Interspace Different ways of sending data across the network with reference to switching techniques (Circuit and Packet switching).</p> <p><b>Data Communication terminologies:</b> Concept of Channel, Bandwidth (Hz, KHz, MHz) and Data transfer rate (bps, Kbps, Mbps, Gbps, Tbps).</p> <p><b>Transmission media:</b> Twisted pair cable, coaxial cable, optical fiber, infrared, radio link, microwave link and satellite link.</p> <p><b>Network devices:</b> Modem, RJ45 connector, Ethernet Card, Router, Switch, Gateway, wifi card.</p> <p><b>Network Topologies and types:</b> Bus, Star, Tree, PAN, LAN, WAN, MAN.</p> <p><b>Network Protocol:</b> TCP/IP, File Transfer Protocol (FTP), PPP, SMTP, POP3 Remote Login (Talent), and Internet Wireless/Mobile Communication protocol such as GSM, CDMA, GPRS, and WLL.</p> <p><b>Mobile Telecommunication Technologies :</b> 1G, 2G, 3G and 4G; Mobile processors; Electronic mail protocols such as SMTP, POP3  Protocols for Chat and Video Conferencing VOIP  Wireless technologies such as Wi-Fi and WiMax</p> <p><b>Network Security Concepts:</b></p>

	<p>Threats and prevention from Viruses, Worms, Trojan horse, Spams Use of Cookies, Protection using Firewall, https; India IT Act, Cyber Law, Cyber Crimes, IPR issues, hacking.</p> <p><b>Introduction To Web services:</b> WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML); Hyper Text Transfer Protocol (HTTP); Domain Names; URL; Website, Web browser, Web Servers; Web Hosting, Web Scripting – Client side (VB Script, Java Script, PHP) and Server side (ASP, JSP, PHP), Web 2.0 (for social networking)</p> <p>E-commerce payment transactions using online banking, mobile banking and payment apps and services.</p>
NOVEMBER (15)	REVISION PRE-BOARD EXAMINATION I
DECEMBER (18)	REVISION PRE-BOARD EXAMINATION II
JANUARY (18)	PRE-BOARD EXAMINATION II REVISION
FEBRUARY (20)	PRACTICAL EXAMINATION REVISION

### SUBJECT: ACCOUNTANCY

TERM I		
MONTH & WORKING DAYS	UNIT/ CHAPTER	SUB TOPICS
MARCH (10)	Accounting for Partnership Firms- Fundamentals	<p>Partnership: features, Partnership Deed.</p> <p><input type="checkbox"/> Provisions of the Indian Partnership Act 1932 in the absence of partnership deed.</p> <p><input type="checkbox"/> Fixed v/s fluctuating capital accounts.</p> <p>Preparation of Profit and Loss Appropriation account- division of profit among partners, guarantee of profits.</p> <p>Past adjustments (relating to interest on capital, interest on drawing, salary and profit sharing ratio).</p>
APRIL (20)	Goodwill- Nature and Valuation	<p><input type="checkbox"/> Goodwill: nature, factors affecting and methods of valuation - average profit, super profit and capitalization.</p>
	Change in the Profit Sharing Ratio	Sacrificing ratio, gaining ratio, accounting for revaluation of assets and reassessment of liabilities and treatment of reserves and accumulated profits. Preparation of revaluation account and balance sheet.
MAY (17) JUNE (2)	Admission of a partner	Effect of admission of a partner on change in the profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, treatment of reserves and accumulated profits, adjustment of capital accounts and preparation of balance sheet.

	Retirement and death of a partner	effect of retirement / death of a partner on change in profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, adjustment of accumulated profits and reserves, adjustment of capital accounts and preparation of balance sheet. Preparation of loan account of the retiring partner. Calculation of deceased partner's share of profit till the date of death. Preparation of deceased partner's capital account and his executor's account.
JULY (21)	Dissolution of a partnership firm	Meaning of dissolution of partnership and partnership firm, types of dissolution of a firm. Settlement of accounts - preparation of realization account, and other related accounts: capital accounts of partners and cash/bank a/c (excluding piecemeal distribution, sale to a company and insolvency of partner(s)).
	Accounting for Share Capital	<input type="checkbox"/> Share and share capital: nature and types. <input type="checkbox"/> Accounting for share capital: issue and allotment of equity shares. Public subscription of shares - over subscription and under subscription of shares; issue at par and at premium, calls in advance and arrears (excluding interest), issue of shares for consideration other than cash. <input type="checkbox"/> Concept of Private Placement and Employee Stock Option Plan (ESOP). <input type="checkbox"/> Accounting treatment of forfeiture and re-issue of shares. <input type="checkbox"/> Disclosure of share capital in the Balance Sheet of a company.
AUGUST (21)	Accounting for Debentures	Debentures: Issue of debentures at par, at a premium and at a discount. Issue of debentures for consideration other than cash; Issue of debentures with terms of redemption; debentures as collateral security-concept, interest on debentures. Writing off discount / loss on issue of debentures. <input type="checkbox"/> Redemption of debentures: Lump sum, draw of lots Creation of Debenture Redemption Reserve.
	Financial Statements of Not-for-Profit Organizations	<input type="checkbox"/> Not-for-profit organizations: concept. <input type="checkbox"/> Receipts and Payments Account: features and preparation. <input type="checkbox"/> Income and Expenditure Account: features, preparation of income and expenditure account and balance sheet from the given receipts and payments account with additional information.
SEPTEMBER (9)	Financial statements of a company	Statement of Profit and Loss and Balance Sheet in the prescribed form with major headings and sub headings
	Financial Statement Analysis	Objectives, importance and limitations.
<b>TERM II</b>		
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/</b>	<b>SUB TOPICS</b>
OCTOBER	Accounting	Objectives, classification and computation.

(19)	Ratios	Liquidity Ratios: Current ratio and Quick ratio. Solvency Ratios: Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio. Activity Ratios: Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables Turnover Ratio and Working Capital Turnover Ratio. Profitability Ratios: Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment
NOVEMBER (8)	Cash Flow Statement	Meaning, objectives and preparation (as per AS 3 (Revised) (Indirect Method only)

### SUBJECT: BUSINESS STUDIES

<b>TERM I</b>		
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER</b>	<b>SUB TOPICS</b>
MARCH(10)	<b>Marketing Management</b>	<ul style="list-style-type: none"> <li>• Selling and Marketing- Concept, difference</li> <li>• Marketing Management- Concept, Marketing Functions</li> <li>• Marketing management philosophies</li> <li>• Marketing Mix – Concept and elements</li> <li>• Product- Concept, branding, labelling and packaging</li> <li>• Price- Concept, Factors determining price</li> <li>• Physical Distribution - concept and components, channels of distribution: types, choice of channels.</li> </ul>
APRIL (20)	<b>Marketing Management</b>	<ul style="list-style-type: none"> <li>• Promotion – Concept and elements; advertising concept, role, objections against advertising, personal selling-concept and qualities of a good salesman, sales promotion- concept and techniques,</li> <li>• public relations- concept and role</li> </ul>
	<b>Consumer Protection</b>	<ul style="list-style-type: none"> <li>• Concept and importance of consumer protection</li> <li>• Consumer protection Act 1986:</li> <li>• Meaning of consumer and consumer protection.</li> <li>• Rights and responsibilities of consumers</li> <li>• Who can file a complaint against whom?</li> <li>• Redressal machinery</li> <li>• Remedies available</li> <li>• Consumer awareness- Role of consumer organizations and Non-Governmental Organizations (NGOs).</li> </ul>
	<b>Principles of Management</b>	<ul style="list-style-type: none"> <li>• Principles of Management- concept and significance</li> <li>• Taylor’s Scientific management- principles and techniques</li> <li>• Fayol’s principles of management</li> </ul>
MAY (17)	<b>Nature and Significance of</b>	<ul style="list-style-type: none"> <li>• Management-concept, objectives, and importance. ( Concept includes meaning and features)</li> </ul>

	<b>Management</b>	<ul style="list-style-type: none"> <li>• Management as Science, Art and Profession</li> <li>• Levels of Management</li> <li>• Management functions-planning, organizing, staffing, directing and controlling</li> <li>• Coordination- concept and importance</li> </ul>
	<b>Project I</b>	<ul style="list-style-type: none"> <li>• Project I &amp; Project II</li> </ul>
JUNE (2)	<b>Financial Management</b>	Concept, role and objective of Financial Management
JULY (21)	<b>Financial Management</b>	<ul style="list-style-type: none"> <li>• Financial decisions: investment, financing and dividend- Meaning and factors affecting</li> <li>• Financial Planning- concept and importance</li> <li>• Capital Structure- Concept</li> <li>• Fixed and Working Capital- Concept and factors affecting their requirements</li> </ul>
	<b>Financial Markets</b>	<ul style="list-style-type: none"> <li>• Financial Markets: Concept, Functions and types</li> <li>• Money market and its instruments</li> <li>• Capital market and its types (primary and secondary); methods of floatation in the primary market</li> <li>• Stock Exchange- Functions and trading procedure</li> <li>• Securities and Exchange Board of India (SEBI) – objectives and functions</li> </ul>
AUGUST (21)	<b>Business Environment</b>  <b>Demonetization</b>	<ul style="list-style-type: none"> <li>• Business Environment- concept and importance</li> <li>• Dimensions of Business Environment- Economic, Social, Technological, Political and Legal</li> <li>• Impact of Government policy changes on business with special reference to liberalization, privatization and globalization in India; Managerial responses to changes in business environment</li> <li>• Concept and features of demonetization</li> </ul>
	<b>Planning</b>	<ul style="list-style-type: none"> <li>• Concept, importance and limitation</li> <li>• Planning process</li> <li>• Single use and standing plans. Objectives, Strategy, Policy, Procedure, method Rule, budget and Programme</li> </ul>
SEPTEMBER (9)	<b>Organising</b>	<ul style="list-style-type: none"> <li>• Concept and importance</li> <li>• Organising Process</li> <li>• Structure of organisation- functional and divisional concept.</li> <li>• Formal and informal organisation- concept</li> <li>• Delegation, concept, elements and importance</li> <li>• Decentralization: concept and importance</li> </ul>
<b>TERM II</b>		
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER</b>	<b>SUB TOPICS</b>
OCTOBER (19)	<b>Staffing</b>	<ul style="list-style-type: none"> <li>• Concept and importance of staffing</li> <li>• Staffing as a part of Human Resource Management concept</li> </ul>



		<ul style="list-style-type: none"> <li>• Staffing process</li> <li>• Recruitment process</li> <li>• Selection Process</li> <li>• Training and Development- Concept and importance, Methods of training- on the job and off the job- Induction training, vestibule training, apprenticeship training and internship training</li> </ul>
	<b>Directing</b>	<ul style="list-style-type: none"> <li>• Concept and importance</li> <li>• Elements of Directing</li> <li>• Supervision –concept, function of a supervisor</li> <li>• Motivation-concept, Maslow’s hierarchy of needs, Financial and non financial incentives</li> <li>• Leadership- concept, styles- authoritative, democratic and laissez faire</li> <li>• Communication- concept, formal and informal communication; barriers to effective communication, how to overcome the barriers</li> </ul>
NOVEMBER (8)	<b>Controlling</b>	<ul style="list-style-type: none"> <li>• Concept and importance</li> <li>• Relationship between planning and controlling</li> <li>• Steps in process of control</li> </ul>

### **SUBJECT: ECONOMICS**

<b>TERM I</b>	
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>
APRIL(20)	<u>Part A : Introductory Microeconomics</u>  Unit 1: Introduction  Unit 2: Consumer Equilibrium and Demand
MAY(17) + JUNE(2)	Unit 2: Consumer Equilibrium and Demand  Unit 3: Producer Behaviour and Supply  Unit 4: Forms of Market and Price Determination

JULY (21)	Unit 3: Producer Behaviour and Supply Unit 4: Forms of Market and Price Determination
AUGUST(21)	<u>Part B : Introductory Macroeconomics</u>  Unit 5: National Income and related aggregates Unit 6: Money and Banking
SEPTEMBER (9)	<u>Part B-Introductory Macroeconomics</u>  Unit 8: Government Budget and the Economy
<b>TERM II</b>	
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>
OCTOBER (19)	Unit 7: Determination of Income and Employment Unit 9: Balance of Payments & Foreign Exchange Rate
NOVEMBER(15)	REVISION

## SUBJECT: HISTORY

### Prescribed Books:

- Themes in world History **Part-I,II,III(NCERT)**

TERM I		
MONTH AND WORKING DAYS	CHAPTERS	CORE LEARNING
<b>March 19</b>	<b>Part-I</b> Theme-1 Bricks, Beads and Bones	<b>Story of discovery:</b> Harappan civilization

<p><b>April 20</b></p>	<p>Theme-2 Kings, Farmers and Towns Theme-3 Kinship, Caste and Class Theme-4 Thinker, Beliefs and Buildings</p>	<p>Political and economic history from the Mauryan to the Gupta period. <b>Story of discovery:</b> Inscriptions and the decipherment of the script. Shifts in the understanding of political and economic history. <b>Excerpt:</b> Asokan inscription and Gupta period land grant. <b>Discussion:</b> Interpretation of inscriptions by historians. Issues in social history, including caste, class, kinship and gender. <b>Story of discovery:</b> Transmission and publications of the Mahabharata. A brief review of religious histories of Buddhism, Jainism.</p>
<p><b>May and June 17+2</b></p>	<p>Theme-5 Through the eyes of Travellers Theme-6 Bhakti and Sufi Traditions</p>	<p><b>Excerpts:</b> from Alberuni, Ibn Batuta, Bernier. <b>Discussion:</b> What these travel accounts can tell us and how they have been interpreted by historians  Ideas and practices of the Bhakti-Sufi saints.</p>
<p><b>July 21</b></p>	<p><b>Part –II</b> Theme-7 An Imperial Capital : Vijayanagara Theme-8 Peasants, Zamindars and the state Theme-9 Kings and Chronicles</p>	<p>(a) Outline of new buildings during Vijayanagar period- temples, forts, irrigation facilities. (b) Relationship between architecture and the political system. Structure of agrarian relations in 16<sup>th</sup> and 17<sup>th</sup> centuries. Excerpts from the Ain- I-Akbari. Discussion of Mughal court and politics.</p>
<p><b>August 21</b></p>	<p>Theme-10 Colonialism and the countryside Theme-11 Rebels and the Raj Theme-12 Colonial Cities</p>	<p>East India company , revenue settlements, peasants, zamindars. Revolt of 1857 and its events. The growth of hill stations, the three presidency cities and cantonments in 18<sup>th</sup> ,19<sup>th</sup> centuries.</p>

<b>September 9</b>	Theme-13 Mahatma Gandhi and the Nationalist Movement	The nationalist movement from 1914 to 1948.
<b>TERM II</b>		
<b>October 19</b>	Theme-14 Understanding Partition Theme-15 Framing the Indian Constitution	Nationalism, communalism and partition . Focus: Punjab and Bengal Constituent assembly debates.
<b>November 15</b>	Revision Pre Board I	
<b>December 18</b>	Revision Pre board II	
<b>January 18</b>	Pre Board II	
<b>February 20</b>	REVISION	

## SUBJECT: POLITICAL SCIENCE

### Prescribed Books:

- Contemporary World Politics(NCERT)
- Politics in India Since Independence(NCERT)

Month	Working days	Chapters	Core Learning
<b>March</b>	<b>10</b>	<b>Part-A Contemporary World Politics</b> Ch-1 Cold War Era Ch-2 The End of Bipolarity	To provide insights into the post second world war era and power struggles between the two super powers.
<b>April</b>	<b>20</b>	Ch-2 The End of Bipolarity(contd.) Ch-3 US Hegemony in World Politics Ch-4 Alternative Centres of Power	First gulf war, 9/11 attack, attack on Iraq.ASEAN, India's changing relations with China and US. China as an emerging superpower.
<b>May</b>	<b>17</b>	Ch-5 Contemporary South Asia Ch-6 International Organisations Ch-7 Security in contemporary world	Democratisation of Pakistan, Nepal, ethnic conflict in Srilanka.Restructuring and the future of UN. UNSC and India's position.Traditional and non-traditional concept of security.
<b>June</b>	<b>02</b>	Ch-7 Security in contemporary world(contd.)	
<b>July</b>	<b>21</b>	Ch-8 Environment and Natural Resources Ch-9 Globalisation	Rights of Indigenous people. Debates on globalization.

		<b>Part-B Politics in India since Independence</b> Ch-10 Challenges of Nation- Building Ch-11 Era of one- party dominace	Nehru's approach to nation-building. First three general elections.
<b>August</b>	<b>21</b>	Ch-12 Politics of Planned Development Ch-13 India's External Relations Ch-14 Challenges to the Congress system	India's Foreign policy Political succession after congress. Non- Congressism Politics of Garibi Hatao.
<b>September</b>	<b>9</b>	Ch-15 Crisis of the Democratic Order	Emergency of 1975
<b>October</b>	<b>19</b>	Ch-16 Rise of Popular Movements Ch-17 Regional Aspirations Ch-18 Recent Developments in Indian Politics	Social movements of women, farmers, environmental movements. The Kashmir situation, Anti Sikh riots.
<b>November</b>	<b>15</b>	Revision Pre Board I	
<b>December</b>	<b>18</b>	Revision Pre board II	
<b>January</b>	<b>18</b>	Pre Board II	
<b>February</b>	<b>20</b>	REVISION	

## SUBJECT: INFORMATICS PRACTICES

<b>TERM I</b>	
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>
MARCH (10)	<p><b><u>UNIT 1: NETWORKING AND OPEN STANDARDS</u></b></p> <p><b>Computer Networking:</b> Networking: a brief overview,  <b>Communication Media:</b> Wired Technologies – Co-Axial, Ethernet Cable, Optical Fiber; Wireless Technologies – Blue Tooth, Infrared, Microwave, Radio Link, Satellite Link;  <b>Network Devices:</b> Modem, Hub, Switch, Repeater, Gateway – and their functions  Types of network: LAN, MAN, WAN, PAN;  <b>Network Topologies:</b> Star, Bus, Tree  <b>Network Protocols:</b> HTTP, TCP/IP, PPP, Remote access software such as Team Viewer;  <b>Identifying computers and users over a network:</b> Basic concept of domain name, MAC (Media Access Control), and IP Address, domain name resolution  <b>Network Security Concepts:</b> Cyber Law, Firewall, Cookies, Hackers and Crackers</p>

	<p><b>Network security threats:</b> Denial of service, Intrusion problems, Snooping,</p> <p><b>Eavesdropping Internet Applications:</b> SMS, Voice Mail, Electronic Mail, Chat, Video Conferencing</p> <p><b>Wireless/Mobile Communication:</b> GSM, CDMA, WLL, 3G, 4G</p>
APRIL (20)	<p><b><u>UNIT 1: NETWORKING AND OPEN STANDARDS</u></b></p> <p><b>Open Source Concepts:</b></p> <p>Open Source Software (OSS), common FOSS/FLOSS examples (GNU/Linux, Firefox, OpenOffice, Java, Netbeans, MySQL). Common open standards (HTML, XML, ODF, TCP/IP, CSS)</p> <p>Indian Language Computing: Character encoding, UNICODE, different types of fonts (open type vs true type, static vs dynamic), Entering Indian Language Text – phonetic and key map based, Inscript.</p> <p><b><u>UNIT 2: PROGRAMMING</u></b></p> <p><b>Review of Class XI;</b></p> <p><b>Programming Fundamentals:</b></p> <p>Basic concept of Class, Object, Inheritance and Polymorphism Commonly used libraries:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> String class and methods: toString(), concat(), length(), toLowerCase(), toUpperCase(), trim(), substring()</li> <li><input type="checkbox"/> Math class methods: pow(), round()</li> </ul>
MAY + JUNE (17) (2)	<p><b><u>UNIT 2: PROGRAMMING</u></b></p> <p>Accessing MySQL database using JDBC to connect with database.</p> <p>Web application development: URL, Web server, Communicating with the web server, concept of Client and Server Side</p>
JULY (21)	<p><b><u>UNIT 2: PROGRAMMING</u></b></p> <p>HTML based web pages covering basic tags – &lt;HTML&gt;, &lt;TITLE&gt;, &lt;BODY&gt;, &lt;H1&gt;&lt;H6&gt;, &lt;B&gt;,&lt;I&gt;,&lt;U&gt;, &lt;CENTER&gt;, &lt;COMMENT&gt;, &lt;IMG&gt;, ANCHOR &lt;A&gt;, Paragraph &lt;P&gt;, Line Break &lt;BR&gt;, Horizontal Rule &lt;HR&gt;, &lt;FONT&gt;, &lt;TABLE&gt;, &lt;LIST&gt; &lt;UL&gt;, &lt;OL&gt;, &lt;FORM&gt;</p>

	<p>Creating and accessing static pages using HTML and introduction to XML</p> <p><b><u>UNIT 3: RELATIONAL DATABASE MANAGEMENT SYSTEM</u></b></p> <p><b>Review of RDBMS from Class XI</b></p> <p><b>Database Fundamentals</b></p> <p>Concept of Database transaction, Committing and revoking a transaction using COMMIT and ROLLBACK AND SAVEPOINT.</p> <p>Grouping Records: GROUP BY, Group functions - MAX(), MIN(), AVG(), SUM(), COUNT(); using COUNT(*), DISTINCT clause with COUNT; Group Functions in case of Null Values.</p>
AUGUST (21)	<p><b><u>UNIT 3: RELATIONAL DATABASE MANAGEMENT SYSTEM</u></b></p> <p>Creating a Table with PRIMARY KEY, Foreign Key, Unique and NOT NULL constraints, Viewing Constraints, Using DESC command to view constraints.</p> <p>Displaying Data From Multiple Tables: Cartesian product, Union, Intersection and Equi-Join.</p>
SEPTEMBER (9)	<p><b><u>UNIT 3: RELATIONAL DATABASE MANAGEMENT SYSTEM</u></b></p> <p>ALTER TABLE for</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Deleting column(s), modifying data type(s) of column(s),</li> <li><input type="checkbox"/> Adding a constraint, enabling constraint,</li> </ul> <p>dropping constraints. DROP Table for deleting a table or a database.</p>
<b>TERM II</b>	
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>
OCTOBER (19)	<p><b><u>UNIT 4: IT APPLICATIONS</u></b></p> <p><b>Front-end Interface:</b> Introduction; content and features; identifying and using appropriate component (Text Field, Radio Button, CheckBox, List etc. as learnt in Unit 2 (Programming)) for data entry, validation and display.</p> <p><b>Back-end Database:</b> Introduction and its purpose, exploring the requirement of databases, tables and its essential attributes.</p>

	<p><b>Front-End and Database Connectivity:</b> Introduction, requirement and benefits          Demonstration and development of appropriate Front-end interface and Back-end Database for e-Governance, e-Business and e-Learning applications</p> <p><b>Impact of ICT on society:</b> Social, Environmental and Economic benefits.</p> <p>In each of the above domains, identify at least two real-life problems, list the expected outputs and the input(s) required for the output, and describe the problem solving approach and develop relevant front-end interface and back-end database.</p>
NOVEMBER (15)	REVISION PRE-BOARD EXAMINATION I
DECEMBER (18)	REVISION PRE-BOARD EXAMINATION II
JANUARY (18)	PRE-BOARD EXAMINATION II REVISION
FEBRUARY (20)	PRACTICAL EXAMINATION REVISION

### SUBJECT: PHYSICAL EDUCATION

TERM I		
MONTH & WORKING DAYS	UNIT/ CHAPTER/ SUB TOPICS	PRACTICALS
MARCH (10)	<p><b>Ch 1- PLANNING IN SPORTS</b>            Meaning and Objectives of Planning            Various committees and their Responsibility            Tournaments – Knock out, League or Round Robin and Combination            Procedure to Draw Fixtures - Knock out(Bye and Seeding), and League (Staircase and cyclic)            Intramural and Extramural-Meaning ,Objectives, and its significance            Specific Sports programme (Sports day, Health Run, Run For Fun, Run for specific cause and Run for unity)</p>	
APRIL (20)	<p><b>CH 2- SPORTS AND NUTRITION</b>            Balanced Diet and Nutrition: Macro and Micro Nutrition            Nutritive and Non-Nutrition Components of Diet            Eating for Weight Control – A Healthy Weight, The Pitfall of Dieting, Food Intolerance and Food Myths.            Sports Nutrition and its effects on performance (Fluid and Meal Intake, Pre, During and Post Competition)</p>	Athletics and its types



	Food Supplement for children	
MAY (17) and JUNE (2)	<p><b>CH 3 –YOGA AND LIFE STYLE</b> Asanas as Preventive Measures <b>Obesity:</b> Procedure, Benefits and Contraindications for Vajrasana, Pada Hastasana, Trikonasana , Ardhmatseyendrasan <b>Diabetes :</b> Procedure, Benefits and Contraindications for Bhujangasana, Paschimottanasana, Pawanmuktasana, Ardhmatseyendrasana <b>Asthama:</b> Procedure, Benefits and Contraindications for Sukhasana, Chakrasana, Gomukhanana, Parvatasana, Bhujangasana, Paschimottanasana, Matsyasana Hypertention : Tadasana, Vajrasana, Pawanmuktasana, Ardh Chakrasana, Bhujangasana, Shavasana <b>Backpain :</b> Tadasana, Ardhmatseyendrasana, Vakrasana, Shalabhasana, Bhujangasana <b>CH 4 – PHYSICAL EDUCATION AND SPORTS FOR DIFFERENTLY-ABLED</b> Concept of Disability and Disorder Types of Disability, their Cause and Nature (Cognitive Disability, Intellectual Disability, Physical Disability ) Types of Disorder, their Cause and Nature (ADHD, SPD, ASD, ODD, OCD) Disability Etiquettes Advantages of Physical Activities for child with special need</p>	Procedure for Asanas Benefits and Contraindication for any two Asanas for each life style diseases.
JULY (21)	<p><b>CH 5 – CHILDREN AND SPORTS</b> Motor Development and Factors Affecting it Exercise guidelines at different stage of growth and development. Advantages and Disadvantages of weight training Concept and Advantages of Correct posture Cause of bad posture Common Postural deformities – Knock-Knee ; Flat Foot; Round Shoulders; Lordosis, Kyphosis, Bow legs and Scoliosis Corrective measures for Postural Deformities. <b>CH 6 – WOMEN AND SPORTS</b> Sports participation of women in india Special consideration (Menarche and Menstrual Dysfunction) Female Athletes Triad (Osteoporosis, Amenorrhoea, Eating Disorder ) Psychological Aspects of Women Athlete Sociological Aspects of Sports Participation <b>CH 7 – TEST AND MEASUREMENT IN SPORTS</b> Computation of Fat percentage Measurement of Muscular Strength- Kraus Weber Test Motor Fitness Test – AAHPER General Motor Fitness –Barrow Three –item General Motor</p>	<p>1. AAHPER Administration test 2. Conduct Barrow 3 item test 3. Procedure for administering Senior Citizen Fitness test for 5 Elderly family members.</p>

	<p>Ability.  Measurement of Cardiovascular Fitness  Computation of Fitness Index  Rikli and Jones – Senior Citizen fitness Test.</p>	
<p>AUGUST  (21)</p>	<p><b>CH 8 – PHYSIOLOGY AND SPORTS</b>  Gender Difference in Physical and Physiology Parameter  Physiological Factors Determining Component of Physical Fitness.  Effect of Exercise on Cardiovascular System  Effect of Exercise on Respiratory System  Effect of Exercise on Muscular System  Physiological Changes due to Ageing  Role of Physical Activity In Maintaining Functional Fitness in Aged Population.  <b>CH 9 - SPORTS MEDICINE</b>  Concept, Aims and Scope of Sports Medicine  Sports Injuries: Classification, Cause and Prevention  First Aid- Aims and Objectives  Management of injuries  <b>CH10 –KINESIOLOGY, BIOMECHANICS AND SPORTS</b>  Projectile and Factor Affecting Projectile Trajectory  Newton’s Law of motion and their Application in Sports  Aerodynamics Principals  Friction and Sports  Introduction to axis and planes  Types of movement  Major Muscles Involved in Running, Jumping and Throwing</p>	<p>Any One Game of choice .Labelled diagram of field and equipments.  Rules Terminology and Skills.</p>
<p>SEPTEMBER  (9)</p>	<p><b>CH 11- PSYCHOLOGY AND SPORTS</b>  Understanding Stress and Coping Strategies  Personality; its Definition and types  Motivation its types and techniques  Self - esteem and Body Image  Psychological Benefits of exercise.  Meaning, Concept and Types of Aggression in Sports</p>	
<b>TERM II</b>		
<b>MONTH &amp; WORKING DAYS</b>	<b>UNIT/ CHAPTER/ SUB TOPICS</b>	<b>PRACTICALS</b>
<p>OCTOBER  (19)</p>	<p>CH 12- TRAINING IN SPORTS  Strength-Definition, Types and Methods of Improving Strength-Isometric, Isotonic and Isokinetic  Endurance – Definition Types and Methods to Develop Endurance –Continuous Training, Interval Training and Fartlek Traing.  Speed – Definition Types and Methods to Develop Speed –</p>	

	Acceleration Run and Pace Run Flexibility –Definition, Types and Methods to Improve Flexibility Coordinative Ability – Definition and Types Circuit Training and High Altitude Training: Introduction and its impact.	
NOVEMBER (15)	REVISION PRE-BOARD I	
DECEMBER (18)	REVISION PRE-BOARD II	
JANUARY (18)	PRE-BOARD II REVISION	
FEBRUARY (20)	PRACTICAL EXAMS REVISION	