St. Paul's School, Aya Nagar

Science Section Monthwise Syllabus

Class XII (2024-2025)

ENGLISH

Month	Chapters and Topic Covered
April	**1. WRITING SKILLS** **● Notice writing** **2. FLAMINGO -** **● The Last Lesson (Prose)** **● Aunt Jennifer's Tigers (Poem)** **● My Mother at Sixty-Six (Poem)** **3. VISTAS** **● The Tiger King** **● On the Face of It**
May	**1. WRITING SKILLS** **● Formal Invitation** **● Reply to formal Invitation** **● Informal Invitation** **● Reply to informal invitation** **2. FLAMINGO-** **● Lost Spring (Prose)** **● Keeping Quiet (Poem)** **3. VISTAS-** **● Memories of Childhood**
July	**1. WRITING SKILLS** **● Letter to the Editor** **2. FLAMINGO** **● Deep Water (Prose)** **● A Thing of Beauty** **3. VISTAS-** **● Journey to the end of the Earth**
August	**1. WRITING SKILLS** **● Letters for job application with bio data or resume** **2. FLAMINGO-** **● The Rattrap (Prose)** **● A Roadside Stand (Poem)** **3. VISTAS-** **● The Enemy**
September	**1. WRITING SKILLS** **● Article/Report Writing**

2. **FLAMINGO-**
- **Indigo (Prose)**
- **Poets and Pancakes**
3. **VISTAS-**
- **The Third Level**
4. **Revision of the Syllabus covered for Term-1 exam**

October

1. **FLAMINGO**
- **The Interview**
- **Going Places**

November till First week — **Revision of the syllabus covered (Pre-Boards)**

Physics

Month	**Chapters and Topic Covered**
April	**Chapter–1: Electric Charges and Fields** **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).** **Chapter–2: Electrostatic Potential and Capacitance** **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 polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor (no derivation, formulae only).**
May	**Chapter–3: Current Electricity Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, 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 rules, Wheatstone bridge.** **Chapter–4: Moving Charges and Magnetism Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop.**

	Ampere's law and its applications to infinitely long straight wire. Straight solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields. Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; Current loop as a magnetic dipole and its magnetic dipole moment, moving coil galvanometer- its current sensitivity and conversion to ammeter and voltmeter
July	**Chapter–5: Magnetism and Matter Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines. Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.** **Chapter–6: Electromagnetic Induction Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.** **Chapter–7: Alternating Current Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit (phasors only), resonance, power in AC circuits, power factor, wattless current. AC generator, Transformer.**
August	**Chapter–8: Electromagnetic Waves Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.** **Chapter–9: Ray Optics and Optical Instruments Ray Optics: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism. Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.** **Chapter–10: Wave Optics Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only).**
September	**Chapter–11: Dual Nature of Radiation and Matter Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation.**
October	**Chapter–12: Atoms Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit,**

velocity and energy of electron in nth orbit, hydrogen line spectra (qualitative treatment only).

Chapter–13: Nuclei Composition and size of nucleus, nuclear force Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.

Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier

November	**Revision starts**

Chemistry

Month	**Chapters and Topic Covered**
April	**Ch-2 Solutions- Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gasses in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapor pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.** **Ch -3 Electrochemistry - Redox reactions, 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, 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, fuel cells, corrosion.**
May	**Ch -4 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, no mathematical treatment), activation energy, Arrhenius equation.** **Ch-8 Haloalkane - Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions.** **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.** **Ch- 12 Biomolecules- Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides**

	(sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. **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; enzymes. Hormones - Elementary idea excluding structure.** **Vitamins - Classification and functions.** **Nucleic Acids: DNA and RNA.**
July	**Ch-9 Alcohol , Phenol and ether -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.** **Ch-10 Aldehyde, ketone and Carboxylic -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.** **Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses**
August	**Ch - 11 Amines 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.** **Ch-7 Coordination compounds - 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 stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).**
September	**First terminal examination** **Ch-6 d and f block - General introduction, electronic configuration, occurrence and characteristics of transition metals, 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, preparation and properties of K2Cr2O7 and KMnO4.** **Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences.** **Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids.**
October	**Half chapter of d- block**

November	**Revision Starts through Class test**

Mathematics

Month	**Chapters and Topic Covered**
APRIL	**Chapter -1 Relations and Functions** **Chapter -2 Inverse Trigonometric Functions** **Chapter - 3 Matrices** **Chapter - 4 Determinants**
MAY	**Chapter - 5 Continuity and Differentiability** **Chapter - 6 Application of Derivatives**
JULY	**Chapter - 7 Integration** **Chapter - 8 Application of Integration**
AUGUST	**Chapter 9 - Differential Equations** **Chapter 10 - Vector Algebra** **Chapter 11 - Three Dimensional Geometry**
SEPTEMBER	**Revision for term 1**
OCTOBER	**Chapter 12 - Linear Programming** **Chapter 13 - Probability**
NOVEMBER	**Revision**

Biology

Month	**Chapters and Topic Covered**
April	**Chapter 4: Principles of Inheritance and Variation** **Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy;** **elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes;** **Sex determination – in humans, birds and honey bee; linkage and crossing over; sex linked inheritance – haemophilia, colour blindness;** **Mendelian disorders in humans – thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes**

	Chapter 5: Molecular Basis of Inheritance **Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging;** **DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation – lac operon;** **Genome, Human and rice genome projects; DNA fingerprinting.**
May	**Chapter 5: Molecular Basis of Inheritance** **Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging;** **DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation – lac operon;** **Genome, Human and rice genome projects; DNA fingerprinting.** **Chapter 6: Evolution Origin of life; biological evolution and evidence for biological evolution (palaeontology, comparative anatomy, embryology and molecular pieces of evidence); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution – variation (mutation and recombination) and natural selection with examples, types of natural selection;Gene flow and genetic drift; Hardy – Weinberg's principle; adaptive radiation; human evolution.**
July	**Chapter 7: Human Health and Diseases** **Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control;** **Basic concepts of immunology – vaccines; cancer, HIV and AIDS; Adolescence – drug and alcohol abuse.** **Chapter 8: Microbes in Human Welfare** **Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers.** **Antibiotics; production and judicious use**
August	**Chapter 9: Biotechnology – Principles and Processes Genetic Engineering (Recombinant DNA Technology).** **Chapter 10: Biotechnology and its Applications** **Application of biotechnology in health and agriculture: Human insulin and vaccine production, stem cell technology, gene therapy;** **genetically modified organisms – Bt crops; transgenic animals; biosafety issues, biopiracy and patents.**
September	**Chapter 11: Organisms and Populations** **Population interactions – mutualism, competition, predation, parasitism; population attributes – growth, birth rate and death rate, age distribution.** **Chapter 12: Ecosystem** **Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy .**

	Chapter 13: Biodiversity and its Conservation **Biodiversity- concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites**
October	**Chapter 1: Sexual Reproduction in Flowering Plants** **Flower structure; development of male and female gametophytes;** **pollination – types, agencies and examples; out breeding devices; pollen-pistil interaction; double fertilization; post fertilization events – development of endosperm and embryo, development of seed and formation of fruit;** **special modes- apomixis, parthenocarpy, polyembryony;** **Significance of seed dispersal and fruit formation.** **Chapter 2: Human Reproduction Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis -spermatogenesis and oogenesis;** **menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea);parturition (elementary idea); lactation (elementary idea).** **Chapter 3: Reproductive Health** **Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs);** **birth control – need and methods, contraception and medical termination of pregnancy (MTP);amniocentesis; infertility and assisted reproductive technologies – IVF, ZIFT, GIFT (Elementary idea for general awareness).**
November	**Revision starts**

Computer Science

Month	**Chapters and Topic Covered**
April	**<u>Ch-1 and 2</u>** **Python Revision Tour-I and II:-** **Revision of all important topics(string, list, tuples functions)** **<u>Ch-3</u>** **Working with Functions:- Defining functions in Python, Understanding the concept of parameters,** **Returning values from functions, Scope of variable** **<u>Ch-4</u> Using Python Libraries:- Understanding library and modules, Importing modules, Using Python standard library's functions and**

modules, creating your own library

May

Ch-5

File Handling:-

Data Files, Opening and closing files, working with text files, Standard input, output and error streams, Working with binary files, Working with CSV files

July

Ch-6

Exception Handling:- Introduction, Exceptions and exception handling

Ch-7 Data Structures:- Introduction, Stacks

Ch-10 Relational Databases:-Introduction, purpose of DBMS, Relational database model, The relational model terminology, Brief history of MySQL, MySQL Database System, Starting MySQL, MySQL and SQL

August

Ch-11 Simple Queries in SQL:- Introduction, Some MySQL SQL elements, SQL command syntax, sample database, making simple queries, MySQL functions, Aggregate functions

Ch-12 Table creation and Data Manipulation commands:- Introduction, Databases in MySQL, Creating tables, Changing data with DML commands, More DDL commands

Ch-13 Grouping records, joins in SQL:- Introduction, Types of SQL functions, Grouping result - GROUP BY, JOINS

Ch-14 Interface Python with MySQL:-Introduction, connecting to MySQL from Python, Parameterized Queries, Performing insert and update queries

September

Ch-8 Computer Networks-I:- Introduction, Computer Networks, Types of networks, Evolution of networking, switching techniques, Data communication terminologies, Transmission Media, Network topologies

Ch-9 Computer Networks - II:- Introduction, Network Devices, Network Protocols, Wireless/ Mobile computing technologies, Internetworking terms and concepts, Network security concepts, Viruses

October	**Revision starts**

Economics

Book - Macro Economics and Indian Economic Development

By: Sandeep Garg

Month	**Chapters and Topic Covered**
April	**Unit 1 of Macro**
	CH 1: Circular Flow of Income
	CH 2: Basic Concepts of Macroeconomics
	CH 3: National Income and Related Aggregates
	CH 4: Measurement of National Income
	Unit 1 of IED
	CH 1: Indian Economy on the Eve of Independence
May	**Unit 2 of Macro**
	CH 5: Money
	CH 6: Banking- Commercial Banks and the Central Bank
	Unit 1 of IED
	CH 2: Indian Economy (1950-1990)
July	**Unit 3 of Macro**
	CH 7: Aggregate Demand and Related Concepts
	CH 8: Income Determination and Multiplier

	Unit 1 of IED
	CH 3: Liberalisation, Privatisation and Globalisation: An Appraisal
August	**Unit 3 of Macro**
	CH 9: Excess Demand and Deficient Demand
	Unit 2 of IED
	CH 4: Human Capital Formation
	CH 5: Rural Development
September	**Unit 4 of Macro**
	CH 10: Government Budget and the Economy
	Unit 2 of IED
	CH 6: Employment- Growth, Informalisation and Other Issues
October	**Unit 5 of Macro**
	CH 11: Foreign Exchange Rate
	Unit 2 of IED
	CH 7: Environment and Sustainable Development
	Unit 5 of Macro
	CH 12: Balance of Payments
	Unit 3 of IED
	CH 8: Comparative Development Experience of India and its Neighbours
Pre Board	**Full Syllabus**

Informatics Practices

Month	Chapters and Topic Covered
April	**Ch-1** **Python Pandas - 1:- Introduction to Python libraries- Pandas, Matplotlib. Data structures in Pandas - Series and Data Frames.** **Ch-2 Python Pandas - 2:-Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing.**
May	**Data Frames: creation - from dictionary of Series, list of dictionaries** **Ch-3 Plotting with PyPlot:- Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram Customizing plots: adding label, title, and legend in plots**
July	**Ch-4 Importing / exporting data between CSV files / MySQL and Pandas:- Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing;** **Importing/Exporting Data between CSV files and Data Frames**
August	**Ch-5** **MySQL SQL Revision Tour :-** **Revision of database concepts and SQL commands covered in class XI Math functions: POWER (), ROUND (), MOD ().** **Ch-6** **MySQL functions** **Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM ().** **Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME ().** **Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*).**

Ch–7
Querying using SQL:- Querying and manipulating data using Group by, Having, Order by.
Ch–8
Joins and set operations:- Working with two tables using equi-join

September

Ch-9 Introduction to networks, Types of network: PAN, LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway Network Topologies: Star, Bus, Tree, Mesh.

Ch-10 Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP. Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.

Ch-11 Societal Impacts:- Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS)

Ch-12 Data protection cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. Awareness about health concerns related to the usage of technology

October

Revision starts

Physical education

Month	**Chapters and topic covered**
April	**Ch - 1**

Management of Sporting Events

- **Functions of Sports Events Managemen**
- **Various Committees& their Responsibilities (Pre ,during , post)**

- **Fixtures and their Procedure - Knock-out (Bye &Seeding) & League (Staircase ,Cyclic , Tabular methods) and Combination Tournaments.**
- **Intramurals &ExtramuralsTournaments - Meaning ,Objectivies & its Significance .**
- **Community Sports Program (Sports Day ,Health Run , Run For Fun , Run For Specific Cause & Run For Unity)**

Ch-2

Children &Women in Sports

- **Exercise Guidelins of WHO for Different Age Group .**
- **Common Postural Deformities - Knock-Knees , FlatFoot ,Round shoulders ,Lordosis , ,Kyphosis , Scoliosis and Bow legs and their Respective Benefits .**
- **Women's Participation in Sports - Physical ,Psychological and Social Benefits .**
- **Special Consideration (Menarche and Menstrual Dysfunction)**
- **Female Athlete Traid (Osteoporosis ,Amenorrhea , Eating Disorder .**

Ch-3

Yoga as Preventive Measure for Lifestyle Disease

- **Obesity : Procedure ,Benefits & Contraindications for Tadasana ,Katichakrasana , Pavanmuktasana ,Matsayasana , Halasana , Pachimottansana ,Ardha-Matsyendrasana , Dhanurasana ,Ushtrasana , Suryabedhan Prayanayama**
- **Diabetes : Katichakrasana , Pavanmuktasana ,Bhujangasana , Shalabhasana , Dhanurasana, Supta-Vajarasana , Paschimottanasana , Ardha- Mastyendrasana , Mandukasana , Gomukasana ,Yogmudra , Ushtrasana , Kapalbhati .**
- **Asthma : Tadasana ,Urdhwahastottansana , Uttan Mandukasana , Bhujangasana , Dhanurasana , Ushtrasana , Vakrasana , Kapalbhati , Gomukhasana ,Matsyaasana , Anuloma -Viloma .**
- **Hypertension : Tadasana , Katichakrasana , Uttanpadasana , Ardha Halasana , Sarala Matyasana ,**
- **Back Pain &Arthritis : Tadasana , Urdhawahastootansana , Ardh -Chakrasana , Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujandgasana,Gomukhasana**

Ch-4

May **Physical Education & sports for CWSN**

- **Organization Promoting Disability Sports**
- **Concept of Classification & Divisioning in Sports**
- **Concept of Inclusion in Sports, its Need, and Implementation**
- **Advantages of physical Activities for Children and Special Needs.**
- **Strategies to make Physical Activities Assessable for Children with Special Needs**

Ch-5

Sports and Nutrition

- **Concept of Balanced Diet and Nutrition**
- **Macro andMicro Nutrients: Food Sources &Functions**
- **Nutritive &Non Nutritive Components of Diet**
- **Eating For Weight Control- A Healthy Weight , The Pitfalls of Dieting , Food Intolerance ,Food Myths .**
- **Importance of Diet in Sports - Pre , During and post Competition Requirements**

July

Ch-6

Test &Measurement in Sports

- **Fitness Test -Sai Khelo India Fitness Test in School , Flamingo Balance Test , Plate Tapping Test**
- **Measurement of Cardiovascular fitness - Harvard Step Test**
- **Computing Basal Metabolic Rate (BMR)**
- **Rikli &Jones - Senior Citizen Fitness Test**
- **Chair Sit &Reach Test**
- **Back Scratch Test**
- **Eight Foot Up &Go Test**
- **Six -Minute Walk Test**
- **Johnson- Metheny Test of Motor Educability**

Ch-7

Physiology & Injuries in Sports

- **Physiological Factors Determining Components of Physical Fitness**
- **Effects of Exercise on Muscular System**
- **Effect of Exercise on the Cardio-Respiratory System**
- **Physiological Changes Due to Ageing**
- **Sports Injuries: Abrasion, Contusion , Laceration ,Incision ,Sprain ,& Strain**

bone&Joint Injuries : Dislocation ,

Fracture -Green Stick,Comminuted , Transverse

August

Ch- 8

Biomechanics & Sports

- **Newton's Law of Motion & its application in Sports**
- **Types of Levers & Their Application in Sports**
- **Equilibrium -Dynamics & Static and Centre of Gravity and its Application in Sports**
- **Friction & sports**
- **Projectile in Sports**

Septembers

Ch-9

Psychology & Sports

- **Personality : Definition ,Types (Jung Classification & Big Five Theory)**
- **Motivation : Types & Techniques**
- **Exercise Adherence : Reason , Benefits & Strategies for Enhancing it**
- **Meaning Concept & Types of Aggressions in Sports**
- **Psychological attributes in Sports - Self Esteem ,Mental Imagery , Self Talk , Goal Setting**

Ch-10

Training in Sports

- **Concept of Talent Identification &Talent Development in Sports**
- **Introduction to Sports Training Cycle - Micro ,Meso,Macro Cycle**
- **Types & methods to Develop - Strength , Endurance , Speed**
- **Types &Methods to Develop - Flexibility & Coordinative Ability .**
- **Circuit Training - Introduction & its Importance**

Revision starts

October

Psychology

Month	Chapters and Topic Covered
March	**Ch-1 Variations in psychological attributes**
April	**Ch-2 Self and personality**
May	**Ch-3 Meeting life challenges**
July	**Ch-4 Psychological disorders**
August	**Ch-5 Therapeutic approaches**
September	**Ch-6 Attitude and Social Cognition**
October	**Ch-7 Social influence and group processes**
November	**Revision begins**

Class -12th

Commerce stream monthwise syllabus
(2024-2025)

Accounts

Month	Chapters and topic covered
April	Chapter 2 Goodwill and Change in profit Sharing ratio Goodwill Definition and it's types Factors affecting Goodwill Formulae to calculate Goodwill Practical sums Chapter 3 Admission of Partner What are the changes required in a firm when a partner is admitted Sacrificing ratio and gaining ratio New profit Sharing ratio Treatment of goodwill Distribution of Accumulated profits and losses Revaluation account Partners' Capital Accounts
MAY	Admission of partner(Remaining) Adjusted partners capital accounts Balance sheet Chapter 4 Retirement of partner

	Sacrificing ratio and gaining ratio New profit sharing ratio Treatment of goodwill Distribution of Accumulated profits and losses Revaluation account Partners Capital accounts Adjusted partners capital accounts Balance Sheet Death of partner Deceased Partner's Capital Account Profit and Loss Suspense Account Methods last year profit basis Turnover basis Deceased Partner's loan Accounts
July	chapter 5 Dissolution Of Partnership firm Definition Reasons of dissolution of Partnership firm Dissolution with the consent Of partners Compulsory Dissolution Treatment of losses Application of assets Treatment of Firm’s debts Treatment of personal debts Realisation Account and journal entries Journal entries related to Realisation Expenses Partners' Capital Accounts Cash /Bank Account Memorandum Balance Sheet Chapter 6 Company Accounts Definition of Company traditional and According to company Act 2013 Features of company Types of companies One person company Private Company Public company Formation Of company Definition Of share traditional and according to company Act 2013 Types of shares Equity shares Preference shares Sweaty Equity shares, Employee stock option plan
August	Company Accounts

Types of Capitals
Authorised share capital
Issued share capital
Subscribe share capital
Called up capital & Paid up capital
Reserved capital
Capital Reserve
Issue of Share Capital:- At Par ,At premium
Calls in Arrear, Calls in Advance
Oversubsciption :-

- Pro-rata allotment

Undersubscription
Forfeiture of shares:-

- When premium is received
- When premium is not received

Re- issue of shares :-

- Full re-issue
- Partial re-issue

Purchase consideration other than cash
Company's Balance Sheet
Chapter 7
Issue of Debentures:-

- At par , At premium, At discount
- Oversubscription
- Undersubscription
- As Collateral Security
- Different cases of issue of shares
- Purchase consideration other than cash

September
Financial statements
Chapter 8
Company's Balance Sheet
With Notes to Accounts
Heads and sub-heads
Chapter 9
Income Statement
Formate , heads and sub-heads
Notes to Accounts
Chapter 10
Ratio
Definition and Types
Liquidity ratio:-

- Current Ratio
- Liquid ratio

Solvency ratio:-

- Debt equity ratio
- Total assets to debt ratio
- Proprietorship ratio
- Interest coverage ratio
- Debt to Capital Employed ratio

Activity ratio:-

- Inventory Turnover ratio

- Trade receivables Turnover ratio
- Trade Payable Turnover ratio
- Working capital Turnover ratio
- Fixed Assets Turnover ratio
- Net Assets Turnover ratio

Profitability ratio

- Gross profit ratio
- Operating ratio
- Operating profit ratio
- Net profit ratio
- Return on Capital employed

October	Chapter 12 Cash flow Statement Definition Cash flow from Various Activities Cash flow from Operating Cash flow from Investing Activities Cash flow from Financing activities Cash and cash equivalents

Business studies

Month	Chapters and topic covered
April	Chapter 2 Principles of Management Taylor's 14 Principles of management Fayol's Scientific Principles And Scientific Techniques Chapter 3 Business Environment Definition Factors of business environment Importance Characteristics Components of business environment Legal Political Social Economical Technological Liberalisation, privatization and globalization Impacts of LPG
May	Chapter 4 Planning Features

	Importance Planning process Types of plans Chapter 5 Organising Definition Features Importance Functional Department Divisional Department Process of organising Formal organisation Informal organisation
July	Chapter 6 Staffing Definition Features Importance Process of Staffing Recruitment ● Internal Recruitment ● External Recruitment Chapter 7 Directing Definition Features Importance Process Of Directing Elements of Directing ● Supervision ● Motivation ● Communication ● Leadership
August	Chapter 8 Controlling Definition Features Importance Process Chapter 9 Financial Management Definition Features Importance Financial decision ● Investing ● Financing ● Dividend Factors affecting

	Investing Decision Financing Decision Divided Decision Objectives Of financial Decisions Financial planning Capital Structure Factors affecting Capital structure Factors affecting fixed capitals requirements Factors affecting working capital requirements
September	Chapter 10 Financial Market Definition Types Money Market Capital Market Demate account How to open demate account Stock exchange and its functions Security Exchange board of India and its functions
October	chapter 11& 12 Marketing Management Unit 11: Marketing ● Marketing – Concept, functions and philosophies ● Marketing Mix – Concept and elements ● Product – branding, labelling and packaging – Concept ● Price – Concept, Factors determining price ● Physical Distribution – concept, components and channels of distribution ● Promotion – Concept and elements; Advertising, Personal Selling, Sales Promotion and Public Relations Unit 12: Consumer Protection ● Consumer Protection: Concept and importance ● Consumer Protection Act 2019: Meaning of consumer Rights and responsibilities of consumers

Who can file a complaint?
Redressal machinery
Remedies available

- Consumer awareness – Role of consumer organizations and Non-Governmental Organizations (NGOs)

Economics

Book - MacroEconomics and Indian Economic Development

By: Sandeep Garg

Month	**Chapters and topic covered**
April	**Unit 1 of Macro** **CH 1: Circular Flow Income** **CH 2: Basic Concepts of Macroeconomics** **CH 3: National Income and Related Aggregates** **CH 4: Measurement of National Income** **Unit 1 of IED** **CH 1: Indian Economy on the Eve of Independence**
May	**Unit 2 of Macro** **CH 5: Money** **CH 6: Banking- Commercial Banks and the Central Bank** **Unit 1 of IED** **CH 2: Indian Economy (1950-1990)**

July	**Unit 3 of Macro**
	CH 7: Aggregate Demand and Related Concepts
	CH 8: Income Determination and Multiplier
	Unit 1 of IED
	CH 3: Liberalisation, Privatisation and Globalisation: An Appraisal
August	**Unit 3 of Macro**
	CH 9: Excess Demand and Deficient Demand
	Unit 2 of IED
	CH 4: Human Capital Formation
	CH 5: Rural Development
September	**Unit 4 of Macro**
	CH 10: Government Budget and the Economy
	Unit 2 of IED
	CH 6: Employment- Growth, Informalisation and Other Issues
October	**Unit 5 of Macro**
	CH 11: Foreign Exchange Rate
	Unit 2 of IED
	CH 7: Environment and Sustainable Development
November	**Unit 5 of Macro**
	CH 12: Balance of Payments

Unit 3 of IED

CH 8: Comparative Development Experience of India and its Neighbours

Pre Board **Full Syllabus**

Humanities stream

Monthwise syllabus (2024-2025)

English

Month	**Chapters and topic covered**
April	**4. WRITING SKILLS** **● Notice writing** **5. FLAMINGO -** **● The Last Lesson (Prose)** **● Aunt Jennifer's Tigers (Poem)** **● My Mother at Sixty-Six (Poem)** **6. VISTAS** **● The Tiger King** **● On the Face of It**
May	**4. WRITING SKILLS** **● Formal Invitation** **● Reply to formal Invitation** **● Informal Invitation** **● Reply to informal invitation** **5. FLAMINGO-** **● Lost Spring (Prose)** **● Keeping Quiet (Poem)** **6. VISTAS-** **● Memories of Childhood**
July	**4. WRITING SKILLS** **● Letter to the Editor** **5. FLAMINGO** **● Deep Water (Prose)** **● A Thing of Beauty**

	6. VISTAS- **● Journey to the end of the Earth**
August	**4. WRITING SKILLS** **● Letters for job application with bio data or resume** **5. FLAMINGO-** **● The Rattrap (Prose)** **● A Roadside Stand (Poem)** **6. VISTAS-** **● The Enemy**
September	**5. WRITING SKILLS** **● Article/Report Writing** **6. FLAMINGO-** **● Indigo (Prose)** **● Poets and Pancakes** **7. VISTAS-** **● The Third Level** **8. Revision of the Syllabus covered for Term-1 exam**
October	**2. FLAMINGO** **● The Interview** **● Going Places**
November till First week	**Revision of the syllabus covered (Pre-Boards)**

History

Books: 1.Themes in Indian History Part I
2.Themes in Indian History Part II
3.Themes in Indian History Part III

Month	**Chapters and topic covered**
April	**History Part I:** **CH1:Bricks, Beads and Bones** **CH2:Kings, Farmers and Towns**
May	**CH3:Kingship, Caste and class** **CH4:Thinkers, Beliefs and Buildings**

July	**History Part II**
	CH:5 Through the eyes of Travellers
	CH:6 Bhakti-Sufi Traditions
August	**CH:7 An Imperial Capital – Vijayanagar**
	CH:8 Peasants, zamindars and the States Agrarian Society and the Mughal Empire
September	
	History Part III
	CH:9 Colonialism and The Countryside
	CH:10 Rebels and Raj
October	**CH:11 Mahatma Gandhi and the National Movement**
	CH:12 Framing of the Constitution

Month	**Chapters and topic covered**
April	**PART A-CONTEMPORARY WORLD POLITICS**
	Ch-1 The End of Bipolarity
	Ch-2 Contemporary Centres of Power
	Ch-3 Contemporary South Asia
May	**Ch-4 International Organizations**
	Ch-5 Security in the Contemporary World
	Ch-6 Environment and Natural Resources
July	**Ch-7 Globalisation**
	PART B-POLITICS IN INDIA SINCE INDEPENDENCE

	Ch-1 Challenges of Nation-Building 1
	Ch-2 Era of One-Party Dominance
	Ch-3 Politics of Planned Development
August	**Ch-4 India's External Relations**
	Ch-5 Challenges to and Restoration of the Congress System
September	**Ch-6 The Crisis of Democratic Order**
	Ch-7 Regional Aspirations
October	**Ch-8 Recent Developments in Indian Politics**

Sociology
Books: 1.Indian society
2.Social change and development in India

Month	**Chapters and Topic Covered**
April **Book 1: Indian society**	**Chapter 2.The Demographic Structure of Indian Society.** **Chapter 3.Social Institutions: Continuity and Change.[To be Continued]**
May	**Chapter 3:.Social Institutions: Continuity and Change.[To be completed]** **Chapter 5 : Patterns of Social inequality and Exclusion.** **Cycle Test**
July	**Chapter 6 : The Challenges of Cultural Diversity.** **Periodic Test**
August **Book II: Social Change and**	**Chapter 1 :Structural Change** **Chapter 2 : Cultural Change**

Development in India

September	**First Terminal examination Syllabus : Chapters taught covered from March to August.**
October	**Chapter 4: The Change and Development in the Rural Society. Chapter 5: The change and development in industrial society.**
November till First week	**Chapter 8 . Social movements**

Economics

Book - MacroEconomics and Indian Economic Development

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Month	**Chapters and topic covered**
April	**Unit 1 of Macro**
	CH 1: Circular Flow of Income
	CH 2: Basic Concepts of Macroeconomics
	CH 3: National Income and Related Aggregates
	CH 4: Measurement of National Income
	Unit 1 of IED
	CH 1: Indian Economy on the Eve of Independence
May	**Unit 2 of Macro**
	CH 5: Money
	CH 6: Banking- Commercial Banks and the Central Bank

	Unit 1 of IED
	CH 2: Indian Economy (1950-1990)
July	**Unit 3 of Macro**
	CH 7: Aggregate Demand and Related Concepts
	CH 8: Income Determination and Multiplier
	Unit 1 of IED
	CH 3: Liberalisation, Privatisation and Globalisation: An Appraisal
August	**Unit 3 of Macro**
	CH 9: Excess Demand and Deficient Demand
	Unit 2 of IED
	CH 4: Human Capital Formation
	CH 5: Rural Development
	TERM -2 SEPTEMBER TO NOVEMBER
September	**Unit 4 of Macro**
	CH 10: Government Budget and the Economy
	Unit 2 of IED
	CH 6: Employment- Growth, Informalisation and Other Issues
October	**Unit 5 of Macro**

	CH 11: Foreign Exchange Rate **Unit 2 of IED** **CH 7: Environment and Sustainable Development**	
November	**Unit 5 of Macro** **CH 12: Balance of Payments** **Unit 3 of IED** **CH 8: Comparative Development Experience of India and its Neighbours**	
Pre Board	**Full Syllabus**	**PROJECT WORK**

Physical Education

Month	**Chapters and topic covered**
	Ch - 1
April	**Management of Sporting Events** ● **Functions of Sports Events Managemen** ● **Various Committees& their Responsibilities (Pre ,during , post)** ● **Fixtures and their Procedure - Knock-out (Bye &Seeding) & League (Staircase ,Cyclic , Tabular methods) and Combination Tournaments.** ● **Intramurals &ExtramuralsTournaments - Meaning ,Objectivies & its Significance .** ● **Community Sports Program (Sports Day ,Health Run , Run For Fun , Run For Specific Cause & Run For Unity)**
Month - MAY	
	Ch-2 **Children &Women in Sports**

- **Exercise Guidelins of WHO for Different Age Group .**
- **Common Postural Deformities - Knock-Knees , FlatFoot ,Round shoulders ,Lordosis , ,Kyphosis , Scoliosis and Bow legs and their Respective Benefits .**
- **Women's Participation in Sports - Physical ,Psychological and Social Benefits .**
- **Special Consideration (Menarche and Menstrual Dysfunction)**
- **Female Athlete Traid (Osteoporosis ,Amenorrhea , Eating Disorder .**

MONTH - JULY

Ch-3

Yoga as Preventive Measure for Lifestyle Disease

- **Obesity : Procedure ,Benefits & Contraindications for Tadasana ,Katichakrasana , Pavanmuktasana ,Matsayasana , Halasana , Pachimottansana ,Ardha-Matsyendrasana , Dhanurasana ,Ushtrasana , Suryabedhan Prayanayama**
- **Diabetes : Katichakrasana , Pavanmuktasana ,Bhujangasana , Shalabhasana , Dhanurasana, Supta-Vajarasana , Paschimottanasana , Ardha- Mastyendrasana , Mandukasana , Gomukasana ,Yogmudra , Ushtrasana , Kapalbhati .**
- **Asthma : Tadasana ,Urdhwahastottansana , Uttan Mandukasana , Bhujangasana , Dhanurasana , Ushtrasana , Vakrasana , Kapalbhati , Gomukhasana ,Matsyaasana , Anuloma -Viloma .**
- **Hypertension : Tadasana , Katichakrasana , Uttanpadasana , Ardha Halasana , Sarala Matyasana ,**
- **Back Pain &Arthritis : Tadasana , Urdhawahastootansana , Ardh -Chakrasana , Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujandgasana,Gomukhasana**

Ch-4

Physical Education & sports for CWSN

- **Organization Promoting Disability Sports**
- **Concept of Classification & Divisioning in Sports**
- **Concept of Inclusion in Sports, its Need, and Implementation**
- **Advantages of physical Activities for Children and Special Needs.**
- **Strategies to make Physical Activities Assessable for Children with Special Needs**

Ch-5

Sports and Nutrition

- **Concept of Balanced Diet and Nutrition**

- **Macro andMicro Nutrients: Food Sources &Functions**
- **Nutritive &Non Nutritive Components of Diet**
- **Eating For Weight Control- A Healthy Weight , The Pitfalls of Dieting , Food Intolerance ,Food Myths .**
- **Importance of Diet in Sports - Pre , During and post Competition Requirements**

Ch-6

Test &Measurement in Sports

- **Fitness Test -Sai Khelo India Fitness Test in School , Flamingo Balance Test , Plate Tapping Test**
- **Measurement of Cardiovascular fitness - Harvard Step Test**
- **Computing Basal Metabolic Rate (BMR)**
- **Rikli &Jones - Senior Citizen Fitness Test**
- **Chair Sit &Reach Test**
- **Back Scratch Test**
- **Eight Foot Up &Go Test**
- **Six -Minute Walk Test**
- **Johnson- Metheny Test of Motor Educability**

Ch-7

Physiology & Injuries in Sports

- **Physiological Factors Determining Components of Physical Fitness**
- **Effects of Exercise on Muscular System**
- **Effect of Exercise on the Cardio-Respiratory System**
- **Physiological Changes Due to Ageing**
- **Sports Injuries: Abrasion, Contusion , Laceration ,Incision ,Sprain ,& Strain**

bone&Joint Injuries : Dislocation ,

Fracture -Green Stick,Comminuted , Transverse

Ch- 8

Biomechanics & Sports

- **Newton's Law of Motion & its application in Sports**
- **Types of Levers & Their Application in Sports**
- **Equilibrium -Dynamics & Static and Centre of Gravity and its Application in Sports**
- **Friction & sports**
- **Projectile in Sports**

Ch-9

Psychology & Sports

- **Personality : Definition ,Types (Jung Classification & Big Five Theory)**
- **Motivation : Types & Techniques**
- **Exercise Adherence : Reason , Benefits & Strategies for Enhancing it**
- **Meaning Concept & Types of Aggressions in Sports**
- **Psychological attributes in Sports - Self Esteem ,Mental Imagery , Self Talk , Goal Setting**

Ch-10

Training in Sports

- **Concept of Talent Identification &Talent Development in Sports**
- **Introduction to Sports Training Cycle - Micro ,Meso,Macro Cycle**
- **Types & methods to Develop - Strength , Endurance , Speed**
- **Types &Methods to Develop - Flexibility & Coordinative Ability .**
- **Circuit Training - Introduction & its Importance.**

Psychology.

Months.	**Chapters and Topic Covered.**	**Practicals**
March.	**Ch-1 Variations in psychological attributes**	**RSPM**
April.	**Ch-2 Self and personality**	**SCQ**
May.	**Ch-3 Meeting life challenges**	**SCAT**
July.	**Ch-4 Psychological disorders**	**Case study**
August.	**Ch-5 Therapeutic approaches**	**Case study**
September.	**Ch-6 Attitude and Social Cognition**	**SAS**
October.	**Ch-7 Social influence and group processes**	**BAI**
November.	**Revision begins**	