



Bosco Public School
Sunder Vihar, Paschim Vihar, New
Delhi www.boscoschool.com



CLASS XII COMMERCE
SYLLABUS (2023-24)

S.No.	Subjects	Page No.
1.	English	2-4
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ENGLISH

General Objectives:

- To listen and comprehend live as well as record in writing oral presentations on a variety of topics.
- To develop greater confidence and proficiency in the use of language skills necessary for social and academic purposes.
- To participate in group discussions, interviews by making a short oral presentation on given topics.
- To perceive the overall meaning and organisation of the text (i.e. the relationships of the different 'chunks' in the text to each other).
- To identify the central/main point and supporting details etc. to build communicative competence in various skills of English.
- To promote advanced language skills with an aim to develop the skills of reasoning, drawing inferences, etc. through meaningful activities.
- To develop the ability and knowledge required in order to engage in independent reflection and inquiry.

Marks Division

Section	Marks
Reading Comprehension	22
Creative Writing Skills	18
Textbooks and Supplementary Reading Text	40
	80
ASL and Project File	10 + 10
Total	100

APRIL

Reading: Unseen Passage
Writing : Notice Writing

Literature : Flamingo
• Chapter 1 - The Last Lesson
• My Mother at Sixty-six (Poem)
Vistas
• Chapter 1 - The Third Level

MAY

Reading : Unseen Passage
Writing : Letter to the Editor, Article
Literature :

Flamingo
• Chapter 3 - Deep Water
• Keeping Quiet (Poem)

Vistas
• Chapter 6 - On the Face of It

JULY

Reading : Unseen Passage
Writing : Job Application, Report Writing

- Literature : Flamingo
- Chapter 5 - Indigo
 - Chapter 4 - The Rattrap
 - Roadside Stand (Poem)
- Vistas
- Chapter 4 - The Enemy

AUGUST

- Reading : Unseen Passage
- Writing : Formal & Informal Invites and Replies
- Literature : Flamingo
- A Thing of Beauty (Poem)
 - Chapter 2 - Lost Spring
- Vistas
- Chapter 2 - Tiger King
 - Chapter 3 - Journey to the End of the Earth

Assessment of Listening and Speaking Skills

SEPTEMBER : Revision and Half Yearly Examination

OCTOBER

- Reading : Unseen Passage
- Literature : Flamingo
- Aunt Jennifer's Tiger (Poem)
 - Chapter 7 - The Interview
 - Chapter 6 - Poets and Pancakes
 - Chapter 8 - Going Places
- Vistas
- Chapter 8 - Memories of Childhood

NOVEMBER : Revision
Assessment of Listening and Speaking Skills
Project Work

DECEMBER : Revision and Pre - Board Examination I

JANUARY : Pre-Board Examination II

Syllabus for Examination

<p>Unit Test 1</p>	<p>Reading: Unseen Passage Writing: Notice Writing Literature:</p> <ul style="list-style-type: none"> • Ch - 1 The Last Lesson • My Mother at Sixty-six (Poem) <p>Reading: Unseen Passage Writing: Notice Writing, Letter to the Editor, Article, Job Application, Report, Formal & Informal Invites and Replies</p>
<p>Half Yearly Examination</p>	<p>Literature: Flamingo</p> <ul style="list-style-type: none"> • Ch - 1 The Last Lesson • Ch - 2 Lost Spring • My Mother at Sixty-six (Poem) • Ch - 3 Deep Water • Roadside Stand (Poem) • Ch - 5 Indigo • Ch - 4 The Rattrap • Keeping Quiet (Poem) • A Thing of Beauty (Poem) • Roadside Stand (Poem) <p>Vistas</p> <ul style="list-style-type: none"> • Ch - 1 The Third Level • Ch - 2 Tiger King • Ch - 3 Journey to the End of the Earth • Ch - 4 The Enemy • Ch - 6 On the Face of It
<p>Pre- Board Examination 1</p>	<p>Complete Syllabus</p>
<p>Pre- Board Examination 2</p>	<p>Complete Syllabus</p>

MATHEMATICS

General Objectives:

- To acquire a precise knowledge and critical understanding of the basic concepts
- To develop a positive attitude towards thinking
- To articulate and analyse logically
- To become precise and logical.

S. No	UNITS	MARKS
1	Relation and Function	8
2	Algebra	10
3	Calculus	35
4	Vector and Three-Dimensional Geometry	14
5	Linear Programming	5
6	Probability	8
	Total	80
	Internal Assessment	20

APRIL

- **Chapter 2 : Inverse trigonometric functions**

Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions

- **Chapter-3: Matrices**

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication.

On- commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries

MAY

- **Chapter-4: Determinants**

Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

- **Chapter-5: Continuity and differentiability**

Continuity and differentiability, chain rule, derivative of inverse trigonometric functions, like \sin^{-1} , $\cos^{-1}x$ and $\tan^{-1}x$, derivative of implicit functions. Concept of exponential and logarithmic functions.

Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

JULY

- **Chapter-5: Continuity and Differentiability(continued)**

Continuity and differentiability, chain rule, derivative of inverse trigonometric functions, like \sin^{-1} , $\cos^{-1}x$ and $\tan^{-1}x$, derivative of implicit functions. Concept of exponential and logarithmic functions.

Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

- **Chapter-6: Application of Derivatives**

Applications of derivatives: rate of change of bodies, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool).

- Simple problems (that illustrate basic principles and understanding of the subject as well as real life situations).

- **Chapter-1 : Relation and Function**

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.

AUGUST

- **Chapter-12: Linear Programming**

Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

- **Chapter-7: Integrals**

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.

SEPTEMBER

Revision and Half Yearly Examination

OCTOBER

- **Chapter-7: Integrals (continued)**

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.

- **Chapter-8: Application of Integrals**

Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only)

- **Chapter-9: Differential equation**

Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type:

NOVEMBER

- **Chapter-10: Vectors**

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector.

Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors.

- **Chapter-11: Three- Dimensional Geometry**

Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.

- **Chapter-13: Probability**

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable.

DECEMBER

Revision and pre-board -1 examination

JANUARY

Pre-board- 2 examination

Syllabus for examination

EXAMINATION	CHAPTERS
Unit Test-1	<ul style="list-style-type: none"> • Ch.2. Inverse Trigonometric Functions • Ch.3: Matrices • Ch.4: Determinants
Half-Yearly Exam	<ul style="list-style-type: none"> • Ch.1: Relation and functions • Ch.2 Inverse Trigonometric Functions • Ch.3: Matrices • Ch.4: Determinants • Ch.5: Continuity and Differentiability • Ch.6 : Application of Derivatives • Ch.12: Linear Programming
Pre-board 1	<ul style="list-style-type: none"> • Complete Syllabus
Pre-board 2	<ul style="list-style-type: none"> • Complete Syllabus

ACCOUNTANCY

General Objectives:

- To enable students with accounting for Partnership Firms and Company Accounts.
- To familiarize students with new and emerging areas in the preparation and presentation of financial statements.
- To develop an understanding about recording of business transactions and preparation of financial statements.
- To develop an analytical aptitude among the students through the critical examination of financial statements.

UNITS		MARKS
PART A	Accounting for Partnership Firms and Companies	
1	Accounting for Partnership Firms	36
2	Accounting for Companies	24
	Total	60
PART B	Financial Statement Analysis	
3	Analysis of Financial Statements	12
4	Cash Flow Statement	8
	Total	20
PART C	Project Work	20
	TOTAL (A+B+C)	100

Project work will include:

Project File: 12 Marks

Viva Voce: 8 Marks

APRIL

Unit 1: Accounting for Partnership Firms

- Partnership: features, Partnership deed.
- Provisions of the Indian Partnership Act 1932 in the absence of a partnership deed.
- Fixed v/s fluctuating capital accounts, Preparation of Profit & Loss Appropriation account, and division of profit among partners. Guarantee of profits.
- Past adjustments (relating to interest on capital, interest on drawing, salary and profit sharing ratio).

MAY

Unit 1: Accounting for Partnership Firms

- **Goodwill:** meaning, nature, factors affecting and methods of valuation - average profit, super profit and capitalization, adjusted through partners' capital /current account.

Accounting for Partnership Firms - Reconstitution and Dissolution.

- **Change in the Profit Sharing Ratio**
Change in profit sharing ratio among the existing partners - sacrificing ratio, gaining ratio.
Accounting for revaluation of assets and reassessment of liabilities, Treatment of reserves and accumulated profits and losses. Preparation of revaluation account and balance sheet.

JULY

Unit-1: Accounting for partnership firms

- **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 and losses, adjustment of capital accounts and preparation of current account, capital account and 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, losses and reserves, adjustment of capital accounts and preparation of current account, capital account 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 the deceased partner's capital account, his executor's account and capital accounts of remaining partners and preparation of balance sheet.

AUGUST

Unit-1: Accounting for partnership firms

- **Dissolution of partnership firms:** meaning of dissolution of partnership and partnership firms, types of dissolution of the 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)).

Part B: (i) Financial Statement Analysis

Unit 3: Analysis of Financial Statements

- **Financial statements of a company:**
- Meaning, Nature, Uses and Importance of Financial Statement.
- Statement of Profit and Loss and Balance Sheet in the prescribed form with major headings and sub-headings (as per Schedule III of the Companies Act 2013)
- **Financial Statement Analysis: Meaning, Significance** Objectives, importance, and Limitations.
- **Tools for Financial Statement Analysis:** Comparative statements, common size statements, cash flow analysis, ratio analysis.
- **Accounting Ratios:** Meaning, Objectives, advantages, classification and computation.
- ✓ **Liquidity Ratios:** Current ratio and Quick ratio.
- ✓ **Solvency Ratios:** Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio, Debt to Capital Employed Ratio.
- ✓ **Activity Ratios:** Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables turnover Ratio and Working Capital Turnover Ratio, Fixed Asset Turnover Ratio, Net Asset Turnover Ratio.
- ✓ **Profitability Ratios:** Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment.

SEPTEMBER

Project work
Revision and Half Yearly Examinations

OCTOBER

Unit -2 Accounting for Companies

➤ Accounting for Share Capital

- Features and types of companies
- **Share and share capital:** nature and types.
- **Accounting for share capital:** issue and allotment of equity shares and preferences shares, Public subscription of shares - over subscription and under subscription of shares; Issue at par and at a premium, calls in advance and arrears (excluding interest), issue of shares for consideration other than cash.
- Concept of a private placement of shares, Employee Stock Option Plan (ESOP), and sweat Equity.
- Accounting treatment of forfeiture and re-issue of shares.
- Disclosure of share capital in the Balance Sheet of a Company.

➤ Accounting for Debentures

- **Debentures:** Meaning, types, issue of debentures at par, at a premium and at 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 of loss/discount on issue of debentures.

NOVEMBER

Unit 4: Cash Flow Statement

- Meaning, objectives, Benefits, Cash and Cash Equivalents. Classification of activities and preparation as per AS 3 (Revised) (Indirect Method only)

DECEMBER

Revision and Pre-board I Examination

JANUARY

Pre-Board II Examination

Syllabus for Examination

Unit Test – I	Unit-1 Fundamentals of Partnership Accounts
Half- Yearly Exam	Theory: Unit-1 & Unit-3 Practical: Project Work
Pre-board I	Complete Syllabus
Pre-board II	Complete Syllabus

BUSINESS STUDIES

General Objectives:

- To inculcate business attitude and develop skills among students to pursue higher education, world of work including self-employment.
- To develop students with an understanding of the processes of business and its environment;
- To acquaint students with the dynamic nature and inter-dependent aspects of business;
- To develop an interest in the theory and practice of business, trade and industry;
- To familiarize students with theoretical foundations of the process of organizing and managing the operations of a business firm;
- To help students appreciate the economic and social significance of business activity and the social cost and benefits arising there from;
- To acquaint students with the practice of managing the operations and resources of business;
- To enable students to act more effectively and responsibly as consumers, employers, employees and citizens;

UNITS		MARKS
PART A	Principles and Functions of Management	
1	Nature and Significance of Management	16
2	Principles of Management	
3	Business Environment	
4	Planning	14
5	Organising	
6	Staffing	20
7	Directing	
8	Controlling	
	Total	50
PART B	Business Finance and Marketing	
9	Financial Management	15
10	Financial Markets	
11	Marketing Management	15
12	Consumer Protection	
	Total	30
PART C	Project Work (One)	20
	TOTAL (A+B+C)	100

APRIL

Unit 1: Nature and Significance of Management

- Management- concept, objectives and importance.
- Management as Science, Art and Profession.
- Levels of Management
- Management functions- planning, organizing, staffing, directing and controlling.
- Coordination- concept and importance.

Unit 2: Principles of Management

- Principles of Management- concept and significance.
- Fayol's Principles of Management.
- Taylor's Scientific Management- principles and techniques.

MAY

Unit 11: Marketing

- Marketing – Concept, functions and philosophies.
- Marketing Mix - Concept & elements
- Product-Concept, branding, labeling 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

Project Work (As per CBSE guidelines)

JULY

Unit 3: Business Environment

- Business Environment- concept and importance.
- Dimensions of Business Environment- Economic, Social, Technological, Political and Legal.
- Demonetization - concept and features

Unit 4: Planning

- Concept, importance and limitation.
- Planning process
- Single use and standing plans. Objectives, Strategy, Policy, Procedure, Method, Rule, Budget and Programme

Unit 5: Organising

- Concept and importance.
- Organising Process.
- Structure of organisation- functional and divisional- concept, advantages, disadvantages and suitability. Formal and informal organisation- concept, advantages & disadvantages
- Delegation: concept, elements and importance.
- Decentralization: concept and importance.

AUGUST

Unit 6: Staffing

- Concept and importance of staffing.
- Staffing as a part of Human Resource Management concept
- Staffing process
- Recruitment process
- Selection - process

- 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.

Unit 7: Directing

- Concept and importance
- Elements of Directing
- Motivation- concept, Maslow's hierarchy of needs, Financial and non-financial incentives.
- Leadership - concept, styles- authoritative, democratic and laissez faire.
- Communication - concept, formal and informal communication; barriers to effective communication, how to overcome the barriers

SEPTEMBER

Revision and Half-Yearly Examination

OCTOBER

Unit 8: Controlling

- Concept and importance.
- Relationship between planning and controlling
- Steps in the process of controlling

Unit 9: Financial Management

- Concept, role and objectives of Financial Management.
- Financial Decisions: investment, financing and dividend- Meaning and factors affecting them.
- Financial Planning- concept and importance.
- Capital Structure – Concept and factors affecting capital structure.
- Fixed and Working Capital - Concept and factors affecting their requirements.

Unit 10: Financial Markets

- Financial Markets: Concept
- Money market: Concept
- Capital market and its types (primary and secondary),
- Stock Exchange- Functions and trading procedure.
- Securities and Exchange Board of India (SEBI) - objectives and functions.

NOVEMBER

Unit 12: Consumer Protection

- Concept and importance of consumer protection.
- The 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)

DECEMBER

Revision and Pre-Board 1 Examination

JANUARY

Pre-Board 2 Examination

Syllabus for Examination

Unit Test - 1	Unit-1 Nature and Significance of Management Unit-2 Principles of Management
Half- Yearly Exam	Unit-1 Nature and Significance of Management Unit-2 Principles of Management Unit-3 Business Environment Unit-4 Planning Unit-5 Organising Unit-6 Staffing Unit-11 Marketing
Pre-board I	Complete Syllabus
Pre-board II	Complete Syllabus

ECONOMICS

General Objectives:

- Understanding of some basic economic concepts and development of economic reasoning which the learners can apply in their day-to-day life as citizens, workers and consumers.
- Realisation of learners' role in nation building and sensitivity to the economic issues that the nation is facing today.
- Equipment with basic tools of economics and statistics to analyse economic issues. This is pertinent for even those who may not pursue this course beyond senior secondary stage.
- Development of understanding that there can be more than one view on any economic issue and necessary skills to argue logically with reasoning.

UNITS	PART - A	MARKS
	Introductory Macroeconomics	
1	National Income and Related Aggregates	10
2	Money and Banking	6
3	Determination of Income and Employment	12
4	Government Budget and the Economy	6
5	Balance of Payments	6
	TOTAL	40
UNITS	PART - B	MARKS
	Indian Economic Development	
6	Development Experience (1947-90) and Economic Reforms since 1991	12
7	Current Challenges facing Indian Economy	20
8	Development Experience of India -A Comparison with Neighbors	8
	TOTAL	40
	PART C	MARKS
	Project Work	20
	TOTAL(A+B+C)	100

APRIL

Unit 6: Development Experience (1947-90) and Economic Reforms since 1991

A brief introduction of the state of Indian economy on the eve of independence.

Indian economic system and common goals of Five Year Plans.

Main features, problems and policies of agriculture (institutional aspects and new agricultural strategy), industry (IPR 1956; SSI – role & importance) and foreign trade.

MAY

Part A: Introductory Macroeconomics

Unit 2: Money and Banking

Money – meaning and functions , supply of money - Currency held by the public and net demand deposits held by commercial banks. Money creation by the commercial banking system.
Central bank and its functions (example of the Reserve Bank of India): Bank of issue, Govt. Bank, Banker's Bank, Control of Credit through bank rate, CRR, SLR, Repo Rate Reverse Repo Rate, open market operations and margin requirements

Unit 4: Government Budget and the Economy

Government budget - meaning, objectives and components.
Classification of receipts - revenue receipts and capital receipts; classification of expenditure – revenue expenditure and capital expenditure. Balanced, Surplus and Deficit Budget
Measures of government deficit - revenue deficit, fiscal deficit, primary deficit their meaning.

Project Work

JULY

Unit 5: Balance of Payments

Balance of payments account - meaning and components;
Balance of Payments – Surplus and Deficit
Foreign exchange rate - meaning of fixed and flexible rates and managed floating.
Determination of exchange rate in a free market, merits and demerits of Flexible and Fixed exchange rate system. Managed floating exchange rate system

Unit 6: Development Experience (1947-90) and Economic Reforms since 1991

Economic Reforms since 1991:
Features and appraisals of liberalisation, globalization and privatisation (LPG policy);
Concepts of Demonetization and GST

Unit 7: Current challenges facing Indian Economy

Human Capital Formation: How people become resource; Role of human capital in economic development;
Rural development: Key issues - credit and marketing - role of cooperatives; agricultural diversification;

Project Work

AUGUST

Part A: Introductory Macroeconomics

Unit 1: National Income and Related Aggregates

What is Macroeconomics?
Basic concepts in macroeconomics: consumption goods, capital goods, final goods, intermediate goods; stocks and flows; gross investment and depreciation.
Circular flow of income (two sector model); Methods of calculating National Income - Value Added or Product method, Expenditure method, Income method.
Aggregates related to National Income:
Gross National Product (GNP), Net National Product (NNP), Gross Domestic Product (GDP) and Net Domestic Product (NDP) - at market price, at factor cost;
Real and Nominal GDP. GDP and Welfare

SEPTEMBER

Revision and Half Yearly Examinations

OCTOBER

Unit 3: Determination of Income and Employment

Aggregate demand and its components. Propensity to consume and propensity to save (average and marginal). Short-run equilibrium output; investment multiplier and its mechanism. Meaning of full employment and involuntary unemployment. Problems of excess demand and deficient demand; measures to correct them - changes in government spending, taxes and money supply.

NOVEMBER

Part B: Indian Economic Development

Unit 7: Current challenges facing Indian Economy

Employment: Growth and changes in work force participation rate in formal and informal sectors; problems and policies.

Sustainable Economic Development: Meaning, Effects of Economic Development on Resources and Environment, including global warming.

Unit 8: Development Experience of India:

A comparison with neighboring Pakistan, China and India.

Issues: Economic growth, population, sectoral development and other Human Development Indicators

Project Work

DECEMBER

Revision and Doubts

Guidelines for Project Work: 20 Marks

Only ONE Project is to be done throughout the session.

1. The objectives of the project work:

Objectives of project work are to enable learners to:

- Probe deeper into personal enquiry, initiate action and reflect on knowledge and skills, views etc. acquired during the course of class XI-XII.
- Analyze and evaluate real world scenarios using theoretical constructs and arguments
- Demonstrate the application of critical and creative thinking skills and ability to produce an independent and extended piece of work
- Follow up aspects in which learners have interest
- Develop the communication skills to argue logically

Examination	Topic
Unit Test – 1	Part A – Unit-2 Money and Banking
Half-Yearly Exam	Part A – Unit-1,2,4,5 Part B – Unit 7 (Human Capital Formation and Rural Development)
Pre-Board I Exam	Complete syllabus
Pre-Board II Exam	Complete syllabus

INFORMATICS PRACTICES

General Objectives:

- Create Series, Data frames and apply various operations.
- Perform aggregation operations, calculate descriptive statistics.
- Visualize data using relevant graphs.
- Design SQL queries using aggregate functions.
- Import/Export data between SQL database and Pandas.
- Learn terminology related to networking and internet.
- Identify internet security issues and configure browser settings.
- Explain the impact of technology on society including gender and disability issues.

Marks Distribution

UNIT NO.	UNIT NAME	MARKS
1	Data Handling using Pandas and Data Visualization	25
2	Database Query using SQL	25
3	Introduction to Computer Networks	10
4	Societal Impacts	10
	Total	70

APRIL

• **Data Handling using Pandas - 1:**

Introduction to Python libraries- Pandas, Matplotlib.

Data structures in Pandas - Series and Data Frames.

- **Series:** Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing.

Practical:

Programs based on Pandas (Series)

MAY

• **Data Handling using Pandas – 1(contd.)**

- **Data Frames:** creation of data frames from dictionary of series, list of dictionaries, text/CSV files, display, iteration. Operations on rows and columns: add (insert /append), select, delete (drop column and row), rename, Head and Tail functions, indexing using labels, Boolean indexing.

Practical:

Programs based on Pandas (Series and Dataframes).

JULY

• **Plotting data using Matplotlib:**

Use of Matplotlib

Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram, pie chart, frequency polygon, box plot and scatter plot.

Customizing plots: colour, style (dashed, dotted), width; adding label, title, and legend in plots.

- **Transferring data between CSV files and Dataframes**

Practical:

Programs based on Pandas, matplotlib and Python with CSV Files and Dataframes.

Allocation and working on CBSE Project.

AUGUST

- **Societal Impacts:**
 - Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), 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.
- **Database Query using SQL:**
 - Revision tour of class XI Syllabus

Practical:

Programs based on Pandas and PyPlot. Working on CBSE project

SEPTEMBER

Revision for Half Yearly Exam

OCTOBER

- **Database Query using SQL(contd.)**
 - Functions in MYSQL(Single row functions), Aggregate functions in MYSQL, sorting of data, use of group by clause with having clause, , Equi join.

Practical:

Working with Python connectivity

NOVEMBER

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

Practical:

Various Python Programming and working with MySQL.

DECEMBER

Revision and Pre-board - I Examination

JANUARY

Pre-Board - II Examination

Syllabus for Examination

Unit Test I	Ch 2: Data Handling using Pandas -1
Half Yearly Examination	Ch 2: Data Handling using Pandas -1 Importing/Exporting Data between CSV and Pandas (Dataframes) Ch 4: Plotting data using Matplotlib Ch 6: Societal Impacts Revision tour of SQL(Class XI)
Preboard 1 and II Examination	Ch 1: Database Query using SQL Ch 2: Data Handling using Pandas -1 Importing/Exporting Data between CSV and Pandas (Dataframes) Ch 4: Plotting data using Matplotlib Ch 6: Societal Impacts Ch 7: Introduction to Computer Networks
Practical Examination Half Yearly	Pandas (Series and Dataframes) SQL(Class XI) Viva, File & Project
Preboard	Complete Practical Part Viva, File & Project

PHYSICAL EDUCATION

General Objectives:

- Awareness regarding the importance of physical fitness in individual and social life including life skills.
- Bring the overall awareness of values with regards to personal health and fitness and to inculcate among students the desired habit and attitude toward health to raise their health status.
- To make the pupil physically, mentally and emotionally fit and to develop such person and social qualities that will help them to be good human being.
- Individually and collectively to protect and promote (own health)(health of family member)and (heath of the surrounding communities and seeking help when required from available community resources..
- To develop interest in exercise sports and games for self satisfaction and make it a part of a life
- Will an individual to enhance in a qualities self must re discipline courage confidence and efficiency
- To Enable and individual to display a sense of responsibility, patriotism, self sacrifice and services to the community.

Marks Distribution (Practical)

S.No.	Practical	Marks
1.	Physical Fitness Test: SAI Khelo India Test, Brockport Physical Fitness Test (BPFT)	6
2.	Proficiency in Games and Sports - (Skill of any one IOA recognised Sport/Game of Choice)	7
3.	Yogic Practices	7
4.	Record File	5
5.	Viva Voce (Health/ Games & Sports/ Yoga	5

APRIL

Unit I Management of Sporting Events

- Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling)
- Various Committees & their Responsibilities (pre; during & post)
- Fixtures and its Procedures – Knock-Out (Bye & Seeding) & League (Staircase, Cyclic and Tabular method) and combination tournaments.
- Intramurals and Extramural tournaments - Meaning, objectives and its Significance
- Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity)

MAY

Unit II Children & Women in Sports

- Exercise guidelines of WHO for different age groups.
- Common postural deformities-knock knees, flat foot, round shoulders, Lordosis, Kyphosis, Scoliosis, and bow legs and their respective corrective measures.
- Women's participation in Sports – Physical, Psychological, and social benefits.
- Special consideration (menarche and menstrual dysfunction)
- Female athlete triad (osteoporosis, amenorrhea, eating disorders).

Unit III Yoga as Preventive measure for Lifestyle Disease

- **Obesity:** Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama.
- **Diabetes:** Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana, Bhujang asana, Shalabhasana, Dhanurasana, Supta-vajarasana, Paschimottanasana, Ardha -Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati.
- **Asthma:** Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalabhati, Gomukhasana Matsyaasana, Anuloma Viloma.
- **Hypertension:** Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, UttanMandukasana, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadi-shodhanapranayam, Sitlipranayam.
- **Back Pain and Arthritis:** Procedure, Benefits & Contraindications of Tadasana, Urdhwahastootansana, Ardh-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrasana, Bhujandgasana, Gomukhasana, Bhadrasana, Makarasana, Nadi-Shodhana pranayama.

JULY

Unit IV Physical Education & Sports for CWSN (Children with Special Needs - *Divyang*)

- Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics)
- Concept of Classification and Divisioning in Sports.
- Concept of Inclusion in sports, its need, and Implementation;
- Advantages of Physical Activities for children with special needs.
- Strategies to make Physical Activities assessable for children with special needs.

Unit V Sports & Nutrition

- Concept of balance diet and nutrition

- Macro and Micro Nutrients: Food sources & functions
- Nutritive & Non-Nutritive Components of Diet
- Eating for Weight control- – A Healthy Weight, The Pitfalls of Dieting, Food Intolerance, and Food Myths,
- Importance of Diet in Sports-Pre, During and Post competition Requirements

AUGUST

Unit VI Test & Measurement in Sports

- Fitness Test – SAI Khelo India Fitness Test in school:
 - Age group 5-8 yrs/ class 1-3:** BMI, Flamingo Balance Test, Plate Tapping Test
 - Age group 9-18yrs/class 4-12:** BMI, 50mt Speed test, 600mt Run/Walk, Sit & Reach flexibility test, Strength Test (Abdominal Partial Curl Up, Push-Ups for boys, Modified Push-Ups for girls).
- Measurement of Cardio- Vascular Fitness –Harvard Step Test –Duration of the Exercise in Seconds x100/5.5 X Pulse count of 1-1.5 Min after Exercise.
- Computing Basal Metabolic Rate (BMR)
- Rikli & Jones - Senior Citizen Fitness Test
 - I. Chair Stand Test for lower body strength
 - II. Arm Curl Test for upper body strength
 - III. Chair Sit & Reach Test for lower body flexibility
 - V. Eight Foot Up & Go Test for agility
 - VI. Six Minute Walk Test for Aerobic Endurance
- Johnsen – Methney Test of Motor Educability (Front Roll, Roll, Jumping Half-Turn, Jumping full-turn)

SEPTEMBER

Revision for Half Yearly Exam

OCTOBER

Unit VII Physiology & Injuries in Sports

- Physiological factors determining components of physical fitness
- Effect of exercise on Muscular System
- Effect of exercise on Cardio-Respiratory System
- Physiological changes due to aging
- Sports injuries: Classification (Soft Tissue Injuries -Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)

Unit VIII Biomechanics & Sports

- Newton’s Law of Motion & its application in sports
- Types of Levers and their application in Sports.
- Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports
- Friction & Sports
- Projectile in Sports

Unit IX Psychology and Sports

- Personality; its definition & types (Jung Classification & Big Five Theory)
- Motivation, its type & techniques.
- Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it
- Meaning, Concept & Types of Aggressions in Sports
- Psychological Attributes in Sports – Self-Esteem, Mental Imagery, Self- Talk, Goal Setting

NOVEMBER

Unit X Training in Sports

- Concept of Talent Identification and Talent Development in Sports
- Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle.
- Types & Method to Develop – Strength, Endurance and Speed
- Types & Method to Develop – Flexibility and Coordinative Ability
- Circuit Training - Introduction & its importance

DECEMBER

Revision and Pre-board I Examination

JANUARY

Pre-board II Examination

Syllabus for Examination

Unit Test- I	Unit I Management of Sporting Events Unit II Children & Women in Sports
Half- Yearly Exam	Unit I Management of Sporting Events Unit II Children & Women in Sports Unit III Yoga as Preventive measure for Lifestyle Disease Unit IV Physical Education & Sports for CWSN Unit V Sports & Nutrition
Pre-Board Examination I	Complete Syllabus
Pre-Board Examination II	Complete Syllabus