CLASS –XII

BOOK LIST

2025-26

S.NO.	SUBJECT	NAME OF THE PRESCRIBED BOOKS
	ACCOUNTANCY	PART I ACCOUNTING FOR PARTNERSHIP FIRM PART II ACCOUNTING FOR COMPANIES PART III ANALYSIS OF FINANCIAL STATEMENT (T.S. GREWAL)
	APPLIED MATHEMATICS	M.L. AGGARWAL (APC PUBLISHERS)
	ARTIFICIAL INTELLIGENCE	A TEXT BOOK OF ARTIFICIAL INTELLIGENCE BY ORANGE PUBLICATIONS
	BUSINESS STUDIES	NCERT – BUSINESS STUDIES PART I PRNCIPLE AND PRACTICE OF MANAGEMENT PART II BUSINESS FINANCE AND MARKETING
	BIOLOGY	NCERT- BIOLOGY
	BIOTECHNOLOGY	NCERT-BIOTECHNONLOGY
	CHEMISTRY	NCERT CHEMISTRY CHEMISTRY LAB MANUAL (LAXMI PUBLICATIONS)
	COMPUTER SCIENCE	A TEXTBOOK OFCOMPUTER SCIENCE WITH PYTHON (BY PREETI ARORA)
	ECONOMICS	INTRODUCTORY MACRO ECONOMICS AND INDIAN ECONOMIC DEVELOPMENT BY TR JAIN, SANDEEP GARG

	ENGLISH	**FLAMINGO, VISTAS**
	GEOGRAPHY	**PART I FUNDAMENTALS OF HUMAN GEOGRAPHY (NCERT)** **PART II PEOPLE AND ECONOMY (NCERT)** **PRCTICAL GEOGRAPHY (NCERT)**
	INFORMATICS PRACTICES	**A TEXT BOOK OF INFORMATICS PRACTICES WITH PYTHON BY PREETI ARORA**
	MATHEMATICS	**NCERT-MATHEMATICS, NCERT EXEMPLAR, R.D. SHARMA (REFERENCE BOOK)**
	PHYSICAL EDUCATION	**HEALTH AND PHYSICAL EDUCATION** **(SARASWATI, ME AND MINE, TOGETHER)**
	PHYSICS	**NCERT-PHYSICS** **SIMPLIFIED PHYSICS (S.L. ARORA)** **PHYSICS LAB MANUAL (S.L. ARORA)**
	POLITICAL SCIENCE	**PART I CONTEMPORARY WORLD POLITICS** **PART II POLITICS IN INDIA SINCE INDEPENDENCE**
	PSYCHOLOGY	**NCERT- TEXTBOOK OF PSYCHOLOGY**
	HINDI	**ANTRA-II AND ANTRAL-II**

ACCOUNTANCY (055)

THEORY: 80 MARKS
PROJECT: 20 MARKS

UNITS		MARKS
PART A	ACCOUNTING FOR PARTNERSHIP FIRMS AND COMPANIES	
	UNIT 1. ACCOUNTING FOR PARTNERSHIP FIRMS	36
	UNIT 2: ACCOUNTING FOR COMPANIES	24
		60
PART B	FINANCIAL STATEMENT ANALYSIS	
	UNIT 3: ANALYSIS OF FINANCIAL STATEMENTS	12
	UNIT 4: CASH FLOW STATEMENTS	8
		20
	PROJECT WORK	20
PART C	PROJECT WORK	
	PROJECT FILE 12 MARKS	
	VIVA VOCE 08 MARKS	

Books for reference: 1) Accountancy NCERT Book- Part I &II, 2) T. S Grewal: Volume I & II: Double entry bookkeeping, Volume-III: analysis of financial statements.

MONTH/ PERIODS	UNIT	CONTENT	LEARNING OBJECTIVES	SUGGESTED ACTIVITIES
April/35	1. FUNDAMENTAL OF PARTNERSHIP FIRM 2. VALUATION OF GOODWILL	Meaning of partnership deed, accounting treatments in the absence of partnership deed, fixed /fluctuating capital, preparation of P/L appropriation account, past adjustments, guarantee of profits. Factors affecting goodwill, methods for calculation of goodwill-average, super profit and capitalization.	a) Learn fixed capital accounts and fluctuating accounts. d) Prepare past adjustment statements. c) Prepare a profit and loss appropriation account. d) Learn different methods of calculating goodwill.	worksheet
May/32	3. CHANGE IN PROFIT SHARING RATIO 4. ADMISSION OF A PARTNER	calculation of sacrificing and gaining ratio, revaluation and reassessment of assets and liabilities, treatment of reserves, accumulated profits and losses,	a) Learn to prepare a revaluation account. b) Learn to record treatment of reserves,	Group discussion

		preparation of revaluation account. **Calculation of new ratio, sacrificing ratio, treatment of goodwill, treatments reserves and accumulated profits, adjustments of capital accounts.**	**accumulated profits and losses.** **c) Learn to calculate new ratios and sacrificing ratios.** **d) Understand the process of preparing a revaluation account and new balance sheet.**	
		SUMMER BREAK		
July/32	**5. RETIREMENT AND DEATH OF A PARTNER** **6. DISSOLUTION OF A PARTNERSHIP FIRM**	**Calculation of gaining ratio, treatment of goodwill, revaluation account, adjustments of capital account, preparation of loan account of a retiring partner.** **Deceased share of profit till the date of death, preparation of deceased partners' capital account and his executor's account.**	**a) Learn to calculate the gaining ratio.** **b) Learn to prepare a revaluation account.** **c) Prepare a loan account for a retired partner.** **d) Prepare an executor's account.** **e) Learn to prepare a realization account, partners' capital and bank account.**	**Group activity**

		Preparation of realization account, partners' capital account and bank account. **Realization adjustments entries.**		
August/ 32	**7. FINANCIAL STATEMENT,** **COMMON SIZE AND COMPARATIVE STATEMENT** **8. ACCOUNTING RATIOS**	**uses of financial statement, statement of profit and loss and balance sheet, comparative and common size statements** **Objectives and calculation of Liquidity ratio, solvency ratio, activity ratio, profitability ratio.**	**a) Learn to prepare common size statements.** **b) understand objectives of accounting ratio** **c) Learn to calculate accounting ratios.**	**Concept mapping**
Sept/16	**9. CASH FLOW STATEMENT**	**Meaning, objectives, cash and cash equivalents, preparation of cash flow statements.**	**Calculate cash inflow/outflow from operating activities, financing activities and investing activities.**	**PPT**
		MID TERM EXAMINATION		
Oct/30	**10. ACCOUNTING FOR SHARE CAPITAL**	**Issue and allotment of equity and preference shares, under subscription**	**a) Learn allotment, forfeited and reissue of shares.**	**PPT**

		and oversubscription, calls in arrears and advance, issue of shares other than cash. Concept of private placement, ESOP, sweat equity, forfeiture and reissue of shares.	**b) Understand over and under subscription of share.** **c) Understand call in arrears and advance entries of shares.** **d) Learn to record entries of issues of shares other than cash.**	
Nov/30	**11.ACCOUNTING FOR DEBENTURES**	**Meaning, types, issue of debentures, issue of debentures with terms of redemption, debentures as collateral securities, interest on debentures, writing off loss on issue of debentures.**	**a) Learn to record debentures as collateral securities.** **b) Understand to write off discount/loss on the issue of debentures.**	**Brainstorming**
Dec/16		**Revision & Pre-Board-I**		
Jan/8		**Revision & Pre-Board-II**		
Feb/10		**Practical viva**		

APPLIED MATHEMATICS (241)

NO.	UNITS	Marks
I	Number, Quantification and Numerical Applications	11
II	Algebra	10
III	Calculus	15
IV	Probability distribution	10
V	Inferential statistics	05
VI	Time based data	06
VII	Financial Mathematics	15
VIII	Linear Programming	08
	Total	80
Suggested Books:	M.L. AGGARWAL, R. D. SHARMA	

MONTH & NO. OF PERIODS	UNITS	CONTENTS	LEARNING OBJECTIVES	SUGGESTED ACTIVITES/PROJECTS
APRIL (36)	UNIT II ALGEBRA	MATRICES: Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation of matrices, addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non - commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and Cramer's rule	*To learn about matrices and shall confine about the study of basic laws of matrix algebra.	ACTIVITY: To study about addition of matrices A and B using spread sheet. *To perform matrix multiplication by spread sheet in excel.

	UNIT V INFERENT-IAL STATISTICS	**and its applications. Simple applications of matrices.** **DETERMINANT: Determinants of a square matrix (up to 3X3 matrices), minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix, Consistence, in consistency 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.** **POPULATION AND SAMPLE: Population data from census, economic surveys same population. Examples of representative and non-representative sample . unbiased sampling**	***To learn about determinants their explanation minors and cofactors, their elementary properties and applications** ***To define the conceptual knowledge of parameter and statistics** ***To state central limit theorem To explain the relation between population –sampling distribution –sample.** ***** To define a hypothesis, null and alternative hypothesis**	
MAY (32) **JUNE**	**UNIT III CALCULUS**	**DIFFERENTIABILITY: Derivative of composite functions, chain rule, , implicit functions, concept of exponential and logarithmic functions. Applications of derivatives, Increasing /Decreasing functions, Maxima and Minima, Marginal cost and Marginal revenue using derivatives** **SUMMER VACATIONS**	***To learn derivatives of composition functions, chain rule, functions, logarithmic functions, exponential second order derivatives etc.**	**ACTIVITY: To find analytically the limit of function f(x) at x = c. and also check the 9 continuity of the function at the point.** ***Project suggested by CBSE.**

JULY (32)	**UNIT 1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS**	**Modulo Arithmetic-Definition and meaning, Introduction to modulo operator, modular addition and subtraction** ***Congruence modulo- Definition and meaning ,solution using congruence modulo** ***Alligation and Mixture- Meaning and applications of rule of allegation, mean price of a mixture.** *** Numerical problems – solve real life problems mathematically** ***Boats and Streams –Problems based on speed of stream and the speed of boat in still water.** ***Pipes and Cisterns – Calculation of the portion of tank filled by the pipe in unit time** ***Races and Games-Calculation of time, distance covered, speed of each player.** *** Numerical inequalities _ Comparison between two statements which can be compared numerically. Application of the technique of numerical solution of algebraic in equations.**	**Modulo Arithmetic-Definition, apply arithmetic operations using modular arithmetic rules.** ***Congruence modulo-definition, apply the definition in various problems** ***Alligation and Mixture-Rule of mixture to produce a mixture at a given price, find mean price of mixture, apply rule of mixture** *** Numerical problems – solve real life problems mathematically** ***Boats and Streams – Difference between upstream & downstream, Express the problem in the form of an equation.** ***Pipes and Cisterns – Determine the time taken by two or more pipes to fill or empty the tank.** ***Races and Games-Compare the performance of two players w.r.t. time, distance.**	***Functions – Demand and modulus function**

AUGUST (30)	**UNIT III CALCULUS**	**Maxima and Minima - A point x = c is called the critical point off if and only if is defined at c and f'(c) = 0 or f is not differentiable at c. To find local maxima and minima by first and second derivative test. Contextualized real life problems. Definition of decision variable, constraints, objective functions, corner points, feasible regions and their graphical representation.**	*** To Determine critical points of function.** ***To find Absolute maximum and minimum value of function.**	
	UNIT IV PROBABILITY DISTRIBUTION **UNIT IV PROBABILITY DISTRIBUTION**	**PROBABILITY DISTRIBUTION-Definition and example of discrete and continuous random variable and their distribution.** **MATHEMATICAL EXPECTATION- To find expected value of discrete random variable by the probability of occurrence.** **Variance – Questions based on variance and S.D.** **BINOMIAL DISTRIBUION- Characteristics of Binomial distribution by using Binomial formula.**	***To understand the concept of random variables and its probability distribution, and its expected** ***To calculate the variance and S.D. of random variables.** ***To identify the Bernoulli's Trials and apply binomial distribution, also evaluate mean, variance and S.D**	***To find Probability by complement rule.**
	UNIT VIII LINEAR PROGRAMMING PROBLEMS	**LINEAR PROGRAMMING- Introduction to linear programming problems and its formulations, and different types of linear programming problems. (bounded and unbounded region)**	***To learn linear programming problems and their graphical presentation.** ***To identify and formulate different types of LPP**	

SEPTEMBER (16)	**UNIT IV PROBABILITY DITRIBUTIONS**	**POISON DISTRIBUTION- Characteristics of Poison probability distribution and formula.** **NORMAL DISTRIBUTION – Characteristics of N.P.D., Total area under the curve = total probability = 1 . Standard normal variate**	***To calculate the variance and S.D. of random variables.** ***To identify the Bernoulli's Trials and apply binomial distribution, also evaluate mean, variance and S.D.** ***To understand the condition of P.D., Evaluate the mean and variance of P.D.** ***To understand the normal distribution is a continuous distribution .**	
SEPTEMBER (16)		**REVISION & HALF YEARLY EXAM**	***To evaluate value of standard normal variate.**	
OCTOBER (30)	**UNIT III CALCULUS**	**INTEGRATION-Simple integrals based on each method (non- trigonometric Evaluation of definite integrals using properties. Problems based in finding –Total cost when marginal cost is given. Total revenue when marginal revenue is given. Equilibrium price and equilibrium quantity and hence consumer and producer surplus.** **DIFFERENTIAL EQUATIONS- Definition, order, degree and examples. Formulation and solving differential equations. Applications of D.E.**	***To understand the indefinite integrals of simple functions as anti-derivatives.** ***To evaluate indefinite integrals of simple algebraic functions by different methods- substitution, partial function, by parts.**	

	UNIT V INFERENTIAL STATISTICS	**Growth and decay model in Biological sciences ,economics and business etc. Define hypothesis, difference between null and alternative hypothesis, Define and calculate degree of freedom, test null hypothesis and make inferences using t-test. Static for one group ,2 independent groups.**	**To recognize a differential equation. *To find the order and degree of a differential equation. *To apply the D.E. to solve growth and decay models.**	*** Statistical analysis**
NOVEMEBER (32)	**UNIT VI TIME- BASED DATA** **UNIT VII FINANCIAL MATHEMATICS**	**.Meaning and Definition ,secular trend ,seasonal variation, cyclical variation, irregular variation. Fitting a straight line trend and estimating the *value.*** **PERPETUITY ,SINKING FUNDS- Meaning pf perpetuity and sinking fund. Real life examples of fund . ,coupon rate, maturity rate, P.V. and relative price approach. CALCULATION OF EMI- Methods of EMI by flat and reducing balance method. CALCULATION OF RETURNS ,NOMINAL RATE OF RETURN: To formulate the calculation of rate of return, nominal rate of return. Meaning and use of CAGR. Formula for CAGR. Meaning and formula for linear depreciation, their advantage.**	***To define secular trend and analyse the method of least squares. * To solve practical problems based on statistical and interpret the result. *To explain the concept of perpetuity and sinking fund. * To explain the concept of EMI. *To understand the concept of CAGR. *To define the concept of linear method of depreciation and its calculation**	*** Data analysis** ***EMI and stock market**
DECEMBER (14)		**REVISION AND PREBOARD EXAMINATION I**		

JANUARY (10) & FEBRUARY (10)		**REVISION AND PREBOARD EXAMINATION II** **REVISION AND ANNUAL EXAMINATION**		

ARTIFICIAL INTELLIGENCE

MONTH & PERIODS	UNIT	CONTENT (CBSE AI HANDBOOK for class XII)	LEARNING OBJECTIVES	ACTIVITY
March(20)	**PART-B SUBJECT SPECIFIC SKILLS** **UNIT 1: PYTHON PROGRAMMING - II**			
	UNIT-01 Python Programming-II	• Recap of NumPy library • Recap of Pandas Library • Importing and Exporting Data between CSV Files and Data Frames • Handling missing value • Linear Regression algorithm	• To Apply the fundamental concepts of the NumPy and Pandas libraries to perform data manipulation and analysis tasks • Import and export data between CSV files and Pandas Data Frames, ensuring data integrity and consistency.	• Import and Export Data between CSV Files and Data Frames • Implement Linear Regression algorithm on Google Colab or any Python IDE.
	PART-C PRACTICAL & PROJECT WORK			
	Project Work	• Project Guidelines-Project Preparation • Practical Work	• To prepare for the project • To write python codes using suitable library	• Capstone Project

APRIL(24)	**PART-B SUBJECT SPECIFIC SKILLS** **Unit-02 DATA SCIENCE METHODOLOGY: AN ANALYTIC APPROACH TO CAPSTONE PROJECT**			
	UNIT-02 **Data Science Methodology: An Analytic Approach To Capstone Project**	• Introduction to Data Science Methodology • Steps for Data Science Methodology • Model Validation Techniques • Model Performance Evaluation Metrics	• To integrate Data Science Methodology steps into the Capstone Project. • To Identify the best way to represent a solution to a problem. • To understand the importance of validating machine learning models • To use key evaluation metrics for various machine learning tasks	• Calculate MSE and RMSE values for the data given using MS Excel • Calculate Precision, Recall, F1 score, and Accuracy from the given confusion matrix • Python Code to Evaluate a Model
	PART-C PRACTICAL & PROJECT WORK			
	Project work	• Project Guidelines- Team forming, • Defining the Problem	• To form a competent team for the project • To define the Problem from the users' perspective	• Capstone Project

MAY(18)	**PART-B SUBJECT SPECIFIC SKILLS** **UNIT 3: MAKING MACHINES SEE**			
	UNIT 3: **MAKING MACHINES SEE**	• How Machines See • Working of Computer Vision • Computer Vision Process • Applications of Computer Vision • Challenges of Computer Vision • The Future of Computer Vision(Working with OpenCV)	To explain computer vision and its significance in visual data analysis. • To understand key stages of computer vision, including acquisition, preprocessing, feature extraction, and analysis. • To identify real-world applications in fields like healthcare, surveillance, and autonomous vehicles. • To Analyse challenges such as ethics, privacy, and technical limitations. • To Develop basic skills in using OpenCV and deploying machine learning models online	• Binary Art - Recreating Images with 0s and 1s • Creating a Website Containing an ML Model • Working with OpenCV to load, display and resize images
	PART – A EMPLOYABILITY SKILLS			
	CH-01 **COMMUNICATION SKILLS-IV**	• Introduction to communication • Active listening • Interviewing skills	• To learn about communication, active listening in communication & interviewing skills	• Traditional telephone game: to see if the message circulated stays the same

July(24)	**PART-B SUBJECT SPECIFIC SKILLS** **UNIT 4: AI with ORANGE Data Mining Tool**			
	UNIT 4: **AI WITH ORANGE DATA MINING TOOL**	• What is Data Mining? • Introduction to Orange Data Mining Tool • Beneficiaries of Orange data mining • Getting started with Orange tool • Components of Orange • Default Widget Catalogue • Key domains of AI with ORANGE DATA MINING TOOL	• To develop proficiency in utilizing the Orange Data Mining tool, enabling them to navigate its interface, employ its features, and execute data analysis tasks effectively. • To demonstrate the ability to apply Orange in real-world scenarios across diverse domains of artificial intelligence.	• Load and visualize the Iris dataset using Scatter Plot and other widgets. • Use classification widgets • Evaluating the Classification Model with Orange • Computer Vision with Orange • Natural Language Processing with Orange
	PART – A EMPLOYABILITY SKILLS			
	CH-02 **SELF MANAGEMENT SKILLS-IV**	• Motivation • Physiological & psychological • Positive attitude • Stress • Goal setting • Personality types, traits, disorders	• To learn to describe the various factors influencing self-motivation • To be able to describe basic personality traits, types & disorders	• A simple trick to improve positive thinking. Watch this video: https://youtu.be/7xfltdq4jmk

August (24)	**PART-B SUBJECT SPECIFIC SKILLS** **UNIT 5: INTRODUCTION TO BIG DATA AND DATA ANALYTICS**			
	UNIT 5: **INTRODUCTION TO BIG DATA AND DATA ANALYTICS**	• Introduction to Big Data • Types of Big Data • Advantages and Disadvantages of Big Data • Characteristics of Big Data • Big Data Analytics • Working on Big Data Analytics • Mining Data Streams • Future of Big Data Analytics	• To understand Big Data, its types, advantages and disadvantages. • To recognize the characteristics of Big Data. • To explain the concept of Big Data Analytics and its significance. • To analyse the future trends in the field of Big Data Analytics. • To understand the term Mining Data Streams.	• Performing Big Data analytics with Orange Data mining tool.
	PART – C Practical & Project Work			
	PROJECT WORK	• Understanding User • Solution Brain Storming • Solution Designing	• To Understand the stakeholders & end users of the solution • To brainstorm ideas for the Problem & Design the solution	• CAPSTONE PROJECT
	PART – A EMPLOYABILITY SKILLS			
	CH-03 **ICT SKILLS- IV**	• Introduction • Filter & sorting	• To learn about ICT skills • To learn filtering and sorting data using excel	

September (12)	**PART-B SUBJECT SPECIFIC SKILLS** **UNIT 6: UNDERSTANDING NEURAL NETWORKS**			
	UNIT 6: **UNDERSTANDING NEURAL NETWORKS**	• Parts of a Neural Network • Components of a Neural Network • Working of a Neural Network • Types of Neural Networks • Future of Neural Networks and Societal Impact	• To explain the basic structure and components of a neural network. • To identify different types of neural networks and their respective applications. • To understand machine learning and neural networks through Handson projects, interactive tools, and Python programming.	Explore Machine Learning for Kids to create a neural network for identifying animals and birds. Build a TensorFlow model to convert Celsius to Fahrenheit
	PART – A EMPLOYABILITY SKILLS			
	CH-03 **ICT SKILLS- IV**	• Formulae & functions • Protecting calc work while saving	• To learn applying formulas and functions on the data • To protect calc work while saving	

October(24)	**PART-B SUBJECT SPECIFIC SKILLS** **UNIT 7: GENERATIVE AI**			
	UNIT 7: **GENERATIVE AI**	• Introduction to Generative AI • Working of Generative AI • Generative and Discriminative models • Applications of Generative AI • LLM- Large Language Model • Future of Generative AI • Ethical and Social Implications of Generative AI	• To know How Generative AI works. • To be able to differentiate between Generative AI and Discriminative AI and identify their use cases. • To explore ethical, social, and legal concerns. • To gain hands-on experience using AI tools to generate creative and analytical outputs, such as images, texts, and videos. • To be able to use the Gemini API to design and deploy a functional chatbot.	• Write Python code to initialize the Gemini API and create a chat bot. • Use Google Gemini to craft prompts and generate text outputs.
	PART-C Practical & Project Work			
	PROJECT WORK	• Identify & collect data • Build a Prototype • Test the Solution • Reflect as a team & an Individual	• To identify and collect data for the project • To build a prototype • To test the solution built • To reflect the learning as an individual and as a team.	• CAPSTONE PROJECT
	PART – A EMPLOYABILITY SKILLS			

	CH-04 ENTREPRENEURIAL SKILLS- IV	• Characteristics of entrepreneurship • Qualities of an entrepreneur • Types of entrepreneur • Roles & functions of an entrepreneur • Startups • Barriers to becoming an entrepreneur • Entrepreneurial attitudes	• To learn about the different characteristics & qualities of an entrepreneur • To learn about different types of entrepreneurs, their roles & responsibilities • To learn about barriers and ways of overcoming the barriers	• Collect small story/anecdote of a prominent successful entrepreneurs
November(24)	**PART-C Practical & Project Work**			
	Project Work	• Creating a Video Pitch	• To create a video pitch for the project	• Capstone Project
	PART-B SUBJECT SPECIFIC SKILLS UNIT 8: DATA STORYTELLING			
	UNIT 8: DATA STORYTELLING	• Introduction to Storytelling • Elements of a Story • Introduction to Data Storytelling • Why is Data Storytelling Powerful? • Essential Elements of Data Storytelling • Narrative Structure of a Data Story (Freytag's Pyramid)	• To understand the benefits of storytelling. • To appreciate the role of data storytelling in data analysis, data science, and AI. • To learn to combine data, visuals, and narrative to present complex information effectively.	• Create an effective data story using given data.

		• Types of Data and Visualizations for Different Data • Steps to Create a Story Through Data • Ethics in Data Storytelling	• To gain skills to draw meaningful insights from data stories.	
	PART – A EMPLOYABILITY SKILLS			
	CH-05 **GREEN SKILLS- IV**	• Introduction to green jobs • Benefits of green jobs	• To learn about the different green jobs in the green skill space • To learn about the benefits of landing a green job	Choose any 4-5 green careers and prepare a brochure discussing all the aspects like educational qualifications, Skills etc.

BUSINESS STUDIES (054)

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**	**20**
	TOTAL	**100**

SUGGESTED BOOKS FOR CASE STUDIES,HOTS,APPLICATION BASED AND REASONING:-
BUSINESS STUDIES (PART A AND PART B)---BY SUBHASH DEY, ALKA DHAWAN AND POONAM GANDHI

MONTH/ PERIOD	UNIT	CONTENT	LEARNING OBJECTIVES	SUGGESTED ACTIVITIES
APRIL/35	**PART-A** **1.NATURE AND SIGNIFICANCE OF MANAGEMENT** **2.PRINCIPLES OF MANAGEMENT (POM)**	Management-Concept, objective & Importance • Management as Science, Art & Profession • Level of Management, Management Functions-POSDCORB • Coordination-Concept Importance. Principle of Management-concept & significance Fayol's principles of management Taylor's Scientific management-principles and techniques.	To make understand different concepts of management in any organization. To understand the concept of POM and its application in organization	Flow chart and mind map Project file work
MAY /32	**3.BUSINESS ENVIRONMENT** **PART- B** **11.MARKETING**	Business environment Concept, importance, features Dimension and Demonetization Marketing – Concept, features, functions and philosophies *Marketing Mix – 4Product-branding, labeling and packaging Price - Concept, Factors determining price Physical Distribution Promotion	*To appreciate the importance and dimension of business eenvironment and effect on nation To make understand 4 P's of Marketing – Concept, functions and philosophies	Flow chart mind map and Project work for board Flowchart mind map Project (Brain storming session)

	12.CONSUMER PROTECTION	Consumer Protection: Concept and importance scope of consumer protection. Meaning of consumer as per CPA 2019, Rights and responsibilities of consumers. Who can file a complaint? Redressal machinery Remedies available Consumer awareness - Role of consumer organizations and NGO	To uunderstand the consumertheir rights, duties according to the Consumer Protection Act, 2019 • How the legal redressal machinery under Consumer pprotection Act, 2019.	Mind map and flow chart, role play based on consumer rights and duties.
JUNE		**SUMMAR VACATION**		
JULY/32	**PART-B** **Unit 9: FINANCIAL MANAGEMENT**	Concept, role and objectives of financial management Financial decisions: Financial Planning - concept and importance *Capital Structure – concept and factors affecting capital structure Fixed and Working Capital - Concept and factors affecting their requirements	To understand the concepts of financial management.	Draw a flow chart and create a role play showing how management take decision for financing for projects.
	UNIT 10. FINANCIAL MARKET	Concept, Functions and Types. *Money market (only concept) *Capital market and its types methods of flotation in the Primary market. Discuss the concept of capital Market. *Distinguish between primary and Secondary markets.	Understand the concept of financial Market. Will make use of depository services Discuss the methods of flotation	Project based on Stock market Dummy opening of Demat account and to do trading.

		*Stock Exchange - Functions and trading procedure *Depository services and Demat account as used in the trading procedure of Securities. *Securities and Exchange Board of India (SEBI) - objectives and functions		
AUG/32	**PART-A** **4. PLANNING** **5.ORGANISING**	Concept, importance and limitation *Planning process *Describe the steps in the process of planning. *Single use and standing plans. Objectives, Strategy, Policy, Procedure, method Rule, budget and Programme Concept and importance of organisational Structure (functional and divisional). Formal and informal Organization- concept. *Delegation: concept, elements and Importance.	To develop an understanding of different types of plan and how any organisation go through stepwise. Students will able to understand the concept of organizing as a structure and as a process.	PPT and crossword puzzle. By drawing organization structure and doing role play
SEP/16		*Decentralization: concept and importance. **<u>Revision of all chapters</u>** **<u>MID TERM EXAMINATION-2025-26</u>**	To recapitulating concept so to make themselves solving HOTS	Assignment /worksheets

OCT/30	**6. Staffing** **8.CONTROLLING**	*Concept and importance of staffing *Staffing as a part of Human Resource *Staffing and Recruitment process *Training and Development - Concept and importance, *Methods of training - on the job and off the job - vestibule training, apprenticeship training and Internship Training Controlling—concept and Importance *Relationship between Planning and Controlling *Steps in Controlling	Understand the steps in the process of staffing. To know the difference between different types of training. To appreciate the relation of Planning and Controlling .	Role play and presentation Flow chart /Mind map and presentation
NOV/30	**7. DIRECTING**	Concept of directing and its importance. Supervision-concept Motivation-meaning, importance, Maslow's Theory-Assumption Financial and non-financial incentives Leadership-Types of leadership Communication-formal and Informal Barriers of communication and measures and how to overcome barriers.	To uunderstand different elements of Directing and how motivation and Ccommunication help in managing a organization effectively. Students will be able to know how to face viva exam for board	Presentation, Different games Role play for leadership.
DEC/16	**PRACTICAL FILE** **REVISION OF FULL COURSE**	*Sample papers *Chapter wise revision *Project files **PRE-BOARD I (Full course)**	Recapitulation of all concepts	Assignments Sample papers

JAN/08		**PRE-BOARD II (Full course)**		
FEB/10		**REVISION**	Students will solve their queries	Assignments/sample papers

BIOLOGY
(Code No. 044)

Month	No. of Periods	Chapter	Content	Suggested Activities
April	20	**Chapter 1:** **Sexual reproduction in flowering plants**	• Flower a fascinating organ of angiosperms • Pre-fertilization – Structure and events • Double fertilization • Post fertilization: Structure and events • Apomixis & Polyembryony	• Prepare a temporary mount to observe pollen germination • Study flowers adapted to pollination by different agencies (wind, insects, birds) • Pollen germination on stigma through a permanent slide or scanning electron micrograph • Controlled pollination - emasculation, tagging and bagging
		Chapter 2: **Human Reproduction**	• The male reproductive system • Female reproductive system • Gametogenesis : spermatogenes is • Gametogenesis: oogenesis • Hormonal control of gametogenesis • Menstrual Cycle • Fertilizations Implantation • Pregnancy & Embryonic development • Parturitions, lactation	

April/May	**10**	**Chapter 3: Reproductive health**	• **Reproductive health problems & strategies** • **Population Explosion and birth control** • **Medical termination of Pregnancy** • **Sexually transmitted diseases** • **Infertility**	• **Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice)** • **Meiosis in onion bud cell or grasshopper testis through permanent slides**
		Chapter 4:	• **Mendel's laws of inheritance**	
		Principles of inheritance	• **Inheritance of one gene** • **Law of Dominance** • **Law of segregation** • **Incomplete Dominance** • **Co dominance** • **Inheritance of two genes** • **Law of Independent Assortment** • **Chromosomal theory of inheritance** • **Linkage & inheritance** • **Sex determination**	

May	**08**	**Chapter 5:** **Molecular Basis of Inheritance**	• **The DNA** • **Structure of polynucleotide DNA** • **The search for DNA material** • **The genetic material is DNA** • **Properties of genetic materials** • **RNA world** • **Replication** • **Transcription** • **Genetic Code** • **Translation** • **Regulation of gene expression** • **The lac operon** • **Human Genome project** • **DNA Fingerprinting**	• **T.S. of blastula through permanent slides (Mammalian)** • **Mendelian inheritance using seeds of different colour/sizes of any plant** • **Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour-blindness** • **Make a brochure containing information about sexual reproduction in flowering plants, pictures of male and female reproductive part and gametogenesis.**
July/August	**30**	**Chapter-6:** **Evolution**	• **Origin of life** • **Evolution of life forms** • **Evidences for evolution** • **Adaptive radiation** • **Biological evolution**	• **Common disease- causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides,**

			• Mechanism of evolution • Hardy- Weinberg Principle • A brief account of evolution	models or virtual images. Comment on symptoms of diseases. • Flashcards/models showing examples of homologous and analogous organs.
		Chapter-7: Human Health and Diseases	• Common Human diseases • Immunity • AIDS • Cancer • Drugs and alcohol abuse	
August	25	Chapter-8: Microbes in Human Welfare	• Microbes in household products • Microbes in industrial products. • Microbes in sewage treatment • Microbes in the production of Biogas • Microbes as biocontrol agents • Microbes as biofertilizers	• Isolate DNA from available plant material such as spinach, papaya, etc.
September	14	Chapter-9: Biotechnology Principles and Processes	• Principles of Biotechnology • Tools of Recombinant DNA technology • Processes of RDT	• Study the plant population density quadrat method.
	Revision and Half Yearly Examination			
		Chapter-10: Biotechnology and Its Application	• Biotechnological application in agriculture • Applications in Medicine • Transgenic animals	• Model/specimen showing symbiotic association in root nodules of leguminous plants, Etc.

October	**25**		• **Ethical issues**	
		Chapter-11: **Organisms and Populations**	• **Organism and its Environment** • **Population** • **Population growth** • **Life history variation**	
			• **Population interaction**	
November	**19**	**Chapter-12:** **Biodiversity and Conservation**	• **Biodiversity and its types** • **Biodiversity loss and its conservation**	• **Study the plant population frequency by quadrat method**
December/ January	**10**	**Revision**		
	Preboard 1			
	Preboard 2			

BIOTECHNOLOGY

Month	No. of Periods	Chapter	Content	Suggested Activities
April	26	Unit-V: Protein and gene manipulation	• Chapter 1: Recombinant DNA Technology Introduction, Tool of Recombinant DNA Technology, Making rDNA molecule, Introduction of recombinant DNA into host cells, Identification of recombinants, Polymerase Chain Reaction, DNA sequencing.	• Use of special equipment in biotechnology experiments. • Isolation of bacterial plasmid DNA. • Make an interactive book containing information about RDT with relevant pictures, tools and process.
May/July	25	Unit-V: Protein and gene manipulation	• Chapter2: Protein Structure and Engineering Introduction to the world of protein, Structure- function relationship in proteins, Characterization of proteins, Protein based products, Designing proteins (Protein Engineering)	
July	15	Unit-V: Protein and gene manipulation	• Chapter 3: Genomics, Proteomics, and Bioinformatics Gene prediction and counting, Genome similarity, SNP's and comparative genomics, Functional genomics, proteomics, Information sources, Analysis using bioinformatics tools	• Detection of DNA by gel electrophoresis • Isolation of bacteria from curd and staining of bacteria

August	**30**	**Unit-VI Cell Culture and its Application**	• **Chapter-1: Microbial Cell Culture and its Application Introduction, Microbial nutrition and culture techniques, Measurement and kinetics of microbial growth, Isolation of microbial products, Strain isolation and improvement, Applications of microbial products, Strain isolation and improvement, Applications of microbial culture technology.**	• **Cell viability assay using Evan's blue dye exclusion method**
September	**14**	**Revision and Mid- Term Examination**		
October	**25**	**Unit-VI:**	• **Chapter-2: Plant Cell Culture and Applications**	• **Data retrieval and database search using internet site NCBI and download a DNA and**
		Cell Culture and its Application	**Introduction, Cell and tissue culture, techniques, Applications of Cell and tissue culture, Transgenic plants with beneficial traits, Biosafety of transgenic plants**	**protein sequence from internet, analyse it and comment on it.**
November	**29**	**Unit-VI: Animal Cell Culture and Applications**	• **Chapter- 3: Animal Cell Culture and Applications Introduction, Animal cell culture techniques, Application of animal cell culture, stem cell technology.**	• **Reading of a DNA sequencing gel to arrive the sequence.**
December	**Revision and Pre- Board -I**			
January	**Pre -Board -II**			

CHEMISTRY

Month	Period	Units	Content	Learning Objectives
APRIL	**12**	**Halo alkanes and Haloarenes**	**Nomenclature of haloalkanes and haloarenes, physical properties of haloalkanes and haloarenes, nature of C-X bond, Mechanism of substitution reactions, optical rotation, uses and environmental effects of dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.**	**Students will be able to –** • **Recognize different types of alkyl halides** • **Convert given name of alkyl halides to structure.** • **Write the order of reactivity.** • **Convert the given compound to another compound using the chemical reactions.**
	14	**Alcohol, Phenol and Ethers**	**Alcohols- Nomenclature, methods of preparation, physical properties of alcohols, chemical properties (of primary alcohols) identification of primary, secondary and tertiary alcohols. Mechanism of dehydration of alcohols, uses with special reference to methanol and ethanol acidic hydration of alkenes. Phenols- Nomenclature, methods of preparation, physical properties, chemical Properties of phenols, electrophilic substitution reaction of phenols.**	**Students will be able to –** • **Name alcohols, according to IUPAC.** • **Discuss the preparation reactions involved in the formation of alcohols.** • **Correlate physical properties of alcohols with their structures.** • **Discuss chemical reactions of primary alcohols.** • **Distinguish between primary, secondary and tertiary alcohols.** • **Name phenol and ethers according to IUPAC.** • **Discuss the preparation reactions involved in the formation of phenols.** • **Discuss chemical reactions of phenols.**

MAY	**5** **10**	**Alcohol, Phenol and Ethers** **Aldehyde, Ketone and Carboxylic acid**	**Ethers- Nomenclature, methods of preparation, physical properties, chemical properties of ethers and uses.** **Aldehyde and ketone: Nomenclature, nature of carbonyl group, methods of preparation, physical properties**	**Students will be able to –** • **Name ethers according to IUPAC.** • **Discuss the preparation reactions involved in the formation of phenols and ethers.** • **Discuss chemical reactions of ethers.** **Students will be able to –** • **Discuss the preparation reactions involved in the formation of aldehyde and ketone.** • **Understand how to name different aldehydes and ketones.**
JULY	**15** **10**	**Aldehyde, Ketone and Carboxylic acid** **Solution**	**Chemical properties of aldehydes, and ketone, Mechanism of nucleophilic addition, reactivity of alpha hydrogen. Carboxylic acid: Nomenclature, acidic nature, methods of preparation, physical and chemical properties and uses.** **Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative**	**Students will be able to –** • **Discuss the preparation reactions involved in the formation of aldehyde and ketone.** • **Understand how to name different aldehydes and ketones.** • **Discuss the reactivity of different carbonyl compounds towards nucleophilic reaction.** • **Write the products of addition reaction to carbonyl compounds.** • **To understand to differentiate between aromatic and aliphatic compounds.** **Students will be able to-** • **Distinguish between ideal and non-ideal solutions.**

			properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, Osmotic pressure,	• **Express concentration of solution in different unit.** • **Classify different types of numerical.** • **Explain different types of colligative properties** • **Solve different types of numerical on colligative properties.**
AUGUST	**3** **27**	**Solution** **Electrochemistry**	**Determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.** **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.**	**Students will be able to -** • **Explain the abnormal molar masses.** **Students will be able to-** • **Distinguish between oxidizing agent and reducing agent.** • **Describe the formation of different types of cells.** • **Find the cell potential of electrochemical cell using Nernst equation.** • **Understand the conductivity and molar conductivity and effect of dilution.** • **Know the use of cells in daily lives.** • **Learn Faraday's laws** • **Explain corrosion and ways to prevent it.**

SEPTEMBER	**14**	**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.**	**Students will be able to-** • **Distinguish between slow, moderate, fast reaction.** • **Define the average, instantaneous rate of a reaction.** • **Discuss the factors affecting rate of a reaction.** • **Derive the integrated rate equation for the first and zero order of the reaction.** • **Derive the half-life period for the zero and first order reaction.** • **Differentiate between order and molecularity.** • **Understand the collision theory.**
OCTOBER	**15**	**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.**	**Students will be able to-** • **Provide both IUPAC and common names for amines. Differentiate primary, secondary, and tertiary amines.** • **Utilize the pKb values of amine or the pKa values of the conjugate acids of amines and arrange the order of basicity of amines.** • **Write the products using chemical reaction of diazonium salts.**
	10	**Biomolecules**	**Carbohydrates - Classification (aldoses and ketoses), monosaccahrides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose,**	**Students will be able to-** • **Define the biomolecules like carbohydrates, proteins, nucleic acids, and vitamins.**

			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.**	• **Identify different types of bonding present in different type of biomolecule.** • **Write the classification of carbohydrate.** • **Compare and contrast the properties of DNA and RNA.** • **Understand the Fischer and Haworth structure of glucose, fructose and its chemical reactions.** • **Explain the importance of vitamins in daily food materials for healthy body.**
NOVEMBER	**20** **9**	**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).**	**Students will be able to -** • **Describe the term coordination complex & ligand.** • **Give the name of coordination compound.** • **Describe the various type of isomerism in complex compound.** • **Mention the hybridization in complex compound** • **Identify low spin and high spin complex.** • **Describe crystal field splitting energy.** • **To appreciate the importance and applications of coordination compounds in our daily life.** **Students will be able to –**

		D and F block elements	**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 $K_2Cr_2O_7$ and $KMnO_4$.** **Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids.**	• **Distinguish between d & f block elements.** • **Write the general electronic configuration of d and f block elements.** • **Understand the physical and chemical properties of elements.** • **Calculate their magnetic moment and expresses it in correct unit.** • **Understand the splitting of d orbitals and explain colour of the compounds.** • **Know the different methods used to obtain their compounds.** • **Draw the structure of chromate, dichromate, manganate and permanganate ion.** • **Predict the reducing and oxidizing nature of their compounds.** • **Explain lanthanoid contraction with evidences.**
DECEMBER - JANUARY	**Revision and Pre-boards**			

PRACTICALS:

<u>March</u>

Determination of concentration/molarity of KMnO4 solution by titrating it against a standard solution of

i. **Oxalic acid**
ii. **Ferrous ammonium sulphate (Mohr salt)**

April

Determination of one cation and one anion in a given salt.

May

1. **Determination of one cation and one anion in a given salt.**
2. **Investigatory project**

July

Determination of one cation and one anion in the given salt.

August

Determination of one cation and one anion in the given salt.

September

Chromatography- separation of mixtures of red and blue ink by paper chromatography and determination of Rf values OR Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values.

October

Tests for the functional group present in the organic compounds- unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (primary groups).

November

1. **Preparation of inorganic compounds – potash alum, ferrous ammonium sulphate.**
2. **Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given foodstuffs.**

COMPUTER SCIENCE

MONTH	PERIODS	CONTENT	LEARNING OBJECTIVES	SUGGESTED ACTIVITY
April	**30**	**Review of Python** **Introduction to problem solving: Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging).** **representation of algorithms using flowchart and pseudo code, decomposition.** **Knowledge of data types, Operators** **Flow of control** **introduction, use of indentation, sequential flow, conditional and iterative flow control.** **● Conditional statements: if, if-else, if-elif-else, flowcharts,** **● Iterative statements: for loop, range function, while loop, flowcharts, break and continue statements, nested loops.** **Strings: introduction, indexing, string operations.** **Lists: introduction, indexing, list operations.**	**To recap the program logic development.** **To understand the usage of collections for advance python programming concepts,**	**1)Simple programs e.g.: absolute value, sort 3 numbers and divisibility of a number.** **2)Generating pattern, summation of series, finding the factorial of a positive number etc.** **3)To design at least five interfaces and link them as a module. The programs of the module should be based on python data collections.**

		Dictionary: introduction and operations.		
May	**27**	**Functions in Python** **Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope.**	**To implement a modular approach to programming.**	**1)To design at least five interfaces and link them as a module. The programs of the module should be based on python data collections.**
SUMMER BREAK				
July	**30**	**Data File Handling** **Types of files (Text file, Binary file, CSV file), relative and absolute paths.** **• Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write () and write lines(), reading from a text file using read(), readline() and readlines(), seek and tell**	**To understand the concept of data files as data storage and manipulations.**	**To make program interfaces on:** **1) Text file writing, reading and manipulating.** **2) Binary file as record I/O based operations.** **3) CSV to export data for further usage.**

		methods, manipulation of data in a text file. **• Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file.** **• CSV file: import csv module, open / close csv file, write into a csv file using csv.writerow() and read from a csv file using csv.reader( )**		
August	**32**	**Data Structure** **Stack, operations on stack (push & pop), implementation of stack using list. Introduction to queue, operations on queue (enqueue, dequeue, is empty, peek, is full), implementation of queue using list.** **Exception Handling in python** **Errors and Exceptions.** **Handling Exceptions in Python, debugging.**	**To understand stack /queue operations.** **To understand the exception handling and using try block and exception block.**	**1)To design a program interface on stack push and pop using list as DS.** **2)Using Python pdb lib for debugging.**

September	**16**	**Data Management** **Relational databases: Concept of a database, relations, attributes and tuples.** **keys- candidate key, primary key, alternate key, foreign key; Degree and cardinality of table.** **MID TERM EXAMINATION**	**To understand the concept of RDBMS.** **To create tables with validations.**	**1) Table Creation/ data types/ constraints.** **2) Alter Table Options.**
October	**28**	**Data Management and SQL** **SQL - DDL ,DML,DQL,TCL** **DDL CREATE ,ALTER ,DESC** **DML -INSERT ,UPDATE ,DELETE** **DQL- SELECT(Clauses ,operators , group by ,order by, aggregate functions)** **JOINS - Natural ,Equi ,outer and inner.**	**To learn and apply tuple inserting , updating and deleting.** **To learn and apply all clauses of select query.**	**1) Table Creation/ data types/ constraints.** **2) Adding/Updating/Deleting Tuples.** **3) Alter Table Options.** **4) Agg Functions**
November	**32**	**Interface Python with SQL** **Connecting to MySql from Python.** **Connection , cursor object and methods.** **Computer Networks** **Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)** **● Data communication terminologies**	**To learn the steps to establish connection , creating connection objects , cursor objects and executing queries.**	**1)Python Stub program to connect and send queries to MySql Server.** **2)Exception handling programs with commit and rollback.**

		● Transmission media: Wired communication media (Twisted pair cable, Coaxial cable, Fiber-optic cable), Wireless media (Radio waves, Microwaves, Infrared waves) ● Network devices ● Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree) ● Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP, wireless/mobile communication protocol such as GSM, GPRS and WLL ● Mobile telecommunication technologies: 1G, 2G, 3G, 4G and 5G ● Introduction to web services:	Case Study based concepts for network setup.	3)Practical and Project file for annual assessment.
December	18	Revision for Pre board exam	Annual Project as s/w design.	

Economics (030)

Part A	Introductory Macro Economics (40)	Marks
Unit 1	National Income and Related Aggregates	10
Unit 2	Money and Banking	6
Unit 3	Determination of Income and Employment	12
Unit 4	Government Budget and the Economy	6
Unit 5	Balance of Payments and Foreign exchange rate	6
Part B	Indian Economic Development (40)	
Unit 6	Development experience and Economic Reforms	8
Unit 7	Current challenges facing Indian economy	22
Unit 8	Development experience of India- comparison with neighbors	10
Part C	Annual Project (20)	

Suggested Books: Introductory Macro Economics and Indian Economic Development written by TR Jain, JP Goel, IC Dhingra, ID Mangla, Sandeep Garg, and Deepashree.

Month/ Period	Unit	Content	Learning Objective	Suggested Activity
April / 35	PART A: Introductory Macro Economics Unit 1: National Income and Related Aggregates (continued)	Macro Economics: Its meaning, Some basic concepts of Macro Economics, Consumption Goods, Capital Goods, Final Goods, Intermediate Goods, Stocks and	To understand nature of Goods used. To study the flow of Money within sectors. To understand concept related to National Income	Prepare list of Formula using flow charts.

		Flows, Gross investment and Depreciation. Circular Flow of Income: Real Flow, Money Flow. Concepts related to National Income: Gross National Product (GNP), Net National Product (NNP), Gross Domestic Product (GDP), Net Domestic Product (NDP) at Market price and at Factor Cost.		
May / 32 Periods	**Unit 1: National Income and Related Aggregates UNIT 2 : Money and Banking(continued)**	**Real and Nominal GDP, Methods of Estimating National Income, GDP and Welfare. Unit 2: Money and Banking: Its meaning, Supply of Money- Currency held by the Public and Net Demand deposits held by Commercial banks. Money Creation by Commercial banking System.**	**To understand different methods of calculating N.I.** **To understand how Money is circulated and created in the economy**	**Compare Indian currency with other currencies in the world.**
SUMMER VACATION				

July / 32	**Unit 2: Money and Banking** **Unit 3: Determination of Income and Employment (continued)**	**Central bank and its functions (example of the RBI): Bank of issue, Banker to Government, Banker's bank, Controller of credit through Bank Rate, CRR, SLR, Repo rate, Open market operations, Margin requirement.** **UNIT 3: Aggregate demand and its components, Propensity to consume and propensity to save (average and marginal). Short run equilibrium output: Investment Multiplier Meaning of Full employment and involuntary unemployment. Problems of excess demand and deficient demand; Measures to correct them- changes in the government spending, taxes and money supply.**	**To understand the role and working of RBI in India.** **To analyse how countries solve their economic problems and attain stability.**	**To discuss the scenario of depressions occurred in the world after industrialisation**

August / 32	**Unit 4: Government budget and Economy.**	**Unit 4: 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 Govt. Deficit- Revenue deficit, fiscal deficit, primary deficit-meaning.**	**To study different tools used in the economic system to solve economic problems.** **To understand the process of budgeting done by the govt.**	**To compare the changes in the government policy under different budgets.**
September /16	**Unit 5: Balance of Payments**	**Unit 5: Balance of Payment Accounts- meaning and components, BOP Surplus and deficit- meaning, 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**	**To analyse how the country deals with international community and manage its funds.**	**To compare exchange rate of different currencies with Indian currency**

		fixed exchange rate. Managed Floating exchange rate system.		
MID TERM EXAMINATION				
October /30	**PART B: Indian Economic Development: Unit 6: Development Experience (1947-1990) and Economic Reforms since 1991**	**Unit 6: 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 agricultural (institutional aspects and new agricultural strategy), Industry (IPR 1956; SSI-role and importance) and Foreign Trade Economic Reforms since 1991: Features and appraisal of Liberalisation, Privatisation and Globalisation, Concept of Demonetization and GST.**	**To gain knowledge about state of our country before and after independence.** **To study the efforts taken by the government to solve economic crisis.**	**Make comparative analysis of Indian economy before and after Independence under different sectors**

		UNIT 7: Human Capital Formation: How people become resource; Role of Human capital in economic development; Growth of Education Sector in India.		
November / 30	**Unit 7: Current challenges facing Indian Economy.**	**Rural Development: key issues- Credit and marketing-role of cooperatives; agricultural diversification. Alternative farming, organic farming. 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.**	**To study various challenges our country is facing since independence and the efforts taken by government to solve them.**	**Collect information about the government initiatives under different development parameters.**

December/16	**Unit 8: Development Experience of India**	**Unit 8: Development Experience of India- A comparison with neighbors. India, Pakistan and China. Issues: Economic growth, population, Sectoral development and other Human development Indicators.**	**To analyse the extent of success of Indian economic issues, in comparison with China and Pakistan.**	**Collect information about China and Pakistan and compare it with India.**
December	**PRE-BOARD EXAMINATION 1**			
January / 8	**PART C: Development of Project in Economics**	**Preparation of Project Report in the form of Practical File.**	**To prepare a report on the knowledge acquired by the students after the completion of syllabus.**	**Preparation of Project on any topic from syllabus**
January	**PRE-BOARD EXAMINATION 2**			
February /10	**Revision**	**Revision/Practical Exam.**	**Clarification of doubts**	**Viva Voce**

ENGLISH CORE (301)

MONTH & PERIOD	CONTENT/TOPIC		LEARNING OBJECTIVES	SUGGESTED ACTIVITIES
APRIL (27)	Flamingo	• The Last Lesson • My Mother at sixty-six (Poem)	To encourage students to share their insights on the emotional nuances of the poem/prose.	
	Vistas	• The Third Level		
	Writing Skill	• Notice Writing • Reading Comprehension		
MAY (24)	Flamingo	• The Lost Spring	To deepen understanding through creative activities related to the themes of the chapters	Students to write a creative response, such as a letter from one character to another or a diary entry reflecting on the challenges faced.
	Vistas	• The Tiger King		
	Writing Skill	• Letter to Editor • Job Application		
JUNE	SUMMER BREAK			
JULY (26)	Flamingo	• Keeping Quiet (Poem)	To assess comprehension through a reflective	Discussion of PROJECT FILE [ALS]

	Writing Skill **ASL PROJECT DISCUSSION**	• **Invitations & Replies** • **Report Writing** • **Article Writing**	**discussion and written responses.**	
AUGUST (29)	**Flamingo**	• **Deep Water**	**To understand the contextual elements presented in the images.**	**Students to share their insights on the themes of female empowerment and artistic expression.**
	Vistas	• **Journey to the End of the Earth** • **The Enemy**		
SEP. (16)	**Flamingo**	• **Rattrap** • **Indigo** • **Going Places** • **Thing of Beauty [Poem]**	**To engage students and introduce the historical context and themes**	**Brief written response where students express their personal connections to the themes of the chapters.**
	ASL	**LISTENING ACTIVITY**		
	MID –TERM EXAMINATION			
OCTOBER (23)	**Flamingo**	• **Poets and Pancakes** • **The Roadside Stand (Poem)**	**To introduce students to the themes and narrative techniques.**	
	Vistas	• **Memories of Childhood**		
	Flamingo	• **The Interview** • **Aunt Jennifer (Poem)**	**To assess written responses for**	**Conducting a thematic**

NOV. (28)	**Vistas**	• **On the Face of it**	**understanding of theme analysis, interpretation, and personal reflection**	**exploration, discussion, focusing on how societal structures contribute to challenges faced by artists.**
DEC. (20)	**Writing Section: Revision of entire writing skills** **Flamingo & Vistas: Revision of all chapters & Poetry.**		**To enable written communicative skills i.e. how to correspond in official matters particularly.**	**Worksheets For Practice**
	PRE-BOARD I			
JANUARY 16	• **Listening activity** • **Revision of the whole syllabus and practice of sample papers**		• **To Recapitulate** • **To gain confidence with regular practice**	**------**
	PRE-BOARD II			
FEB. (10)	**Practice of Sample Papers**		• **Assess written responses for understanding of theme analysis, interpretation and personal reflection.**	**Worksheets For Practice**

GEOGRAPHY

BOOK :

1. **FUNDAMENTALS OF HUMAN GEOGRAPHY [NCERT]**
2. **INDIA : PEOPLE & ECONOMY [NCERT]**
3. **PRACTICAL GEOGRAPHY [NCERT]**

PART – 1

UNIT	NAME	WEIGHTAGE
1	HUMAN GEOGRAPHY	3
2	POPULATION DISTRIBUTION, DENSITY & GROWTH HUMAN DEVELOPMENT	8
3	ECONOMIC ACTIVITIES	19
	MAP WORK	5
	TOTAL	35

PART – 2

UNIT	NAME	WEIGHTAGE
1	POPULATION DISTRIBUTION, DENSITY & GROWTH	5
2	HUMAN SETTLEMENTS	3
3	RESOURCES PLANNING & SUSTAINABLE DEVELOPMENT	10
4	TRANSPORT & COMMUNICATION INTERNATIONAL TRADE	7
5	GEOGRAPHICAL PERSPECTIVE ON SELECTED ISSUES	5
	MAP WORK TOTAL	5 35

MONTH & PERIODS	UNIT	CONTENT	LEARNING OBJECTIVES	ACTIVITY SUGGESTED
April 35	HUMAN GEOGRAPHY WORLD POPULATION	Human Geography: Nature & scope World Population: a] Distribution, density & growth of population. b] Determinants of population change, pattern & structure. c]Population Composition.	To know about the different demographic structures around the world.	Discussion on pattern of population growth in the world.
	HUMAN DEVELOPMENT	Sources of Data : Types of data & data collection. Human Development: Concept, indicator & International comparison. Primary activities : Gathering, pastoralism, types of farming, mining. Data Processing :Measures of Central Tendency –Mean ,Median, Mode	To know about various economic activities performed around the world and their role in Human Development	Role play on different economic activities

May 32	**ECONOMIC ACTIVITIES**	**Secondary activities: Factors affecting location of industries ,types of industries ,major industries around the world.** **Tertiary Activities: service sector, BPO & KPO activities, Digital divide** **Data Processing :Measures of Central Tendency –Mean ,Median, Mode**	**To understand various economic activities performed around the world and their significance.**	**Class presentation by students on types of industries**
		SUMMER VACATION		
July 32	**ECONOMIC ACTIVITIES**	**Tertiary Activities: service sector, BRO & KPO activities, Digital divide.** **Transport & Communication: Significance of good network of transport & communication ,**	**To understand various economic activities performed around the world & their significance.**	**Map work for railway routes, canals, air ports & sea ports.**

		important highways, transcontinental railway routes, Panama & Suez canal. **Representation of Data: Bar Graphs**		
August 32	**INTERNATIONAL TRADE** **POPULATION** **LAND RESOURCES**	**International Trade: Volume, & balance of trade & Regional Trade Blocs in the world.** **Population: Distribution, density , growth & composition , phases of population growth in India.** **Migration: types, causes, consequences** **Land Resources and Agriculture:** **Land utilisation, degradation & conservation.** **Agricultural reforms.** **Representation of Data: flow diagram , pie charts**	**To find out various social, economic & political aspects behind the different phases of population growth in India.**	**Collage on process of migration in India.**
September 16	**HUMAN SETTLEMENT**	**Human Settlement: Classification of urban &**	**To know about the development of**	

		rural settlements on different basis. **MID TERM EXAMINATION**	**human societies with the passage of time**	
October 30	**MINERAL & ENERGY RESOURCES**	**Mineral & Energy resources: types of minerals, distribution of mineral ores in India, sources of energy. Planning & Sustainable Development: types of planning, case studies.** **Representation of Data: Thematic maps- dot, choropleth, isopleths.**	**To understand the importance of natural resources & their role in economic development of the nation.**	**Map making with rotring method.**
November 32	**TRANSPORT & COMMUNICATION**	**Transport & Communication International Trade.** **Spatial Information System**	**To know the role of service sector in the economy.**	**Data collection & report making.**
December 16	**GIS**	**Geographical aspects on selected issues** **Revision of complete syllabus**	**To understand environmental issues & their adverse effects on human society**	

		PRE BOARD EXAMINATION -I		
January 08	**REVISION**	**SAMPLE PAPERS** **PRE BOARD EXAMINATION - II**		
February 12	**REVISION**	**Practice papers & worksheets**		

INFORMATICS PRACTICES (065)

MONTH	PERIODS	CONTENT	LEARNING OBJECTIVES	SUGGESTED ACTIVITY
April	30	Data Management II Revision Of Data Management I Relational databases: Concept of a database, relations, attributes and tuples. keys- candidate key, primary key, alternate key, foreign key; Degree and cardinality of table. SQL - DDL ,DML,DQL,TCL DDL CREATE ,ALTER ,DESC DML -INSERT ,UPDATE ,DELETE DQL- SELECT(Clauses ,operators , group by ,order by, aggregate functions) JOINS - Natural ,Equi ,outer and inner.	To understand the concept of RDBMS. To create tables with validations. To learn and apply tuple inserting , updating and deleting. To learn and apply all clauses of select query.	1) Table Creation/ data types/ constraints. 2) Adding/Updating/Deleting Tuples. 3) Alter Table Options. 4) Agg Functions.
May	27	MORE ON SQL Ordering records -order by clause Group by clause with having. Group by with aggregate functions (min() ,max(),sum(),count(),avg()) Functions in SQL 1) String functions 2) Numeric functions 3) Date and Time functions	To learn and apply select clauses order by for sorting data. To learn and apply group by with having and agg functions.	1) Select query on tables with order by clause options. 2) Select query on tables with group by and having clause.

SUMMER BREAK				
July	**30**	**Data Handling using Pandas** **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.** **Series attributes, head and tail functions, selection, indexing and slicing.** **Data Frame: 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** **Importing/Exporting Data between CSV files and Data Frames.**	**Create a pandas series from different methods.** **Create pandas dataframe objects from different methods.**	**1)Create series from ndarray,list,** **dictionary etc.** **2)Create pandas objects from ndarry , nested list ,list ,series etc.** **3)Create a csv file by exporting dataframe**

		Descriptive Statistics: max, min, count, sum, mean, median, mode, quartile, Standard deviation, variance. Dataframe operations: Aggregation, group by, Sorting, Deleting and Renaming Index, Pivoting. Handling missing values – dropping and filling.	Read and write data from csv file to dataframe Apply aggregate functions on dataframe data.	data using different parameters of to_csv() function and read_csv() function.
August	32	Data Visualization Purpose of plotting, drawing and saving of plots using Matplotlib (line plot, bar graph, histogram). Plotting from a dataframe object.	Customizing plots: color, style (dashed, dotted), width; adding label, title, and legend in plots.	Take data from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.
September	16	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** **MID TERM EXAMINATION**		
October	**28**	**Computer Networks** **Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)** **● Data communication terminologies** **● Transmission media: Wired communication media (Twisted pair cable, Coaxial cable, Fiber-optic cable), Wireless media (Radio waves, Microwaves, Infrared waves) .**	**Case Study based concepts for network setup.**	**Practical and Project file for annual assessment.**
November	**32**	**Computer Networks** **● Network devices** **● Network topologies and Network types: types of networks (PAN,**	**Case Study based concepts for network setup.**	**Practical and Project file for annual assessment.**

		LAN, MAN, WAN), networking topologies (Bus, Star, Tree) **● Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP, wireless/mobile communication protocol such as GSM, GPRS and WLL** **● Mobile telecommunication technologies: 1G, 2G, 3G, 4G and 5G** **● Introduction to web services.**		
December	**18**	**Revision for Pre board exam**	**Annual Project as s/w design.**	

MATHEMATICS (041)

NO.	UNITS	MARKS
1	RELATIONS AND FUNCTIONS	08
2.	ALGEBRA	10
3.	CALCULUS	35
4.	VECTOR AND THREE DIMENSIONAL GEOMETRY	14
5.	LINEAR PROGRAMMING	05
6.	PROBABILITY	08

SUGGESTED BOOKS : NCERT EXAMPLER, M L AGGARWAL, R. D. SHARMA, R S AGGARWAL

MONTH & NO. OF PERIODS	UNITS	CONTENTS	LEARNING OBJECTIVES	SUGGESTED ACTIVITES
APRIL (36)	Chapter 2	INVERSE TRIGONOMETRIC FUNCTIONS: Definition, range, Domain, Principal value branch. Graphs of inverse trigonometric functions.	*To understand the graph of inverse trigonometric functions and its domain and range.	*Graph of $\sin^{-1}x$ By using the graph of sinx and demonstrate the concept of mirror reflection.
	Chapter 3	MATRICES: Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation of matrices, addition	*To learn about matrices and shall confine about the study of basic laws of matrix algebra.	*To study about addition of matrix A and B by using spreadsheet.

		and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. **Non -commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order. Invertible matrices and proof of uniqueness of inverse, if it exists;(here all matrices will have real entries.)**		
MAY (30)	**Chapter 4** **CHAPTER 12 LPP**	**DETERMINANT: Determinants of a square matrix (up to 3X3 matrices), minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix, Consistence, in consistency 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.** **LINEAR PROGRAMMING-Introduction to linear programming problems and its**	**To learn about determinants their explanation minors and cofactors, their elementary properties and applications.** ***To learn linear programming**	**ACTIIVTY: To find analytically the limit of function f(x) at x = c. and also check the continuity of the function at the point.**

		formulations, and different types of linear programming problems. (bounded and unbounded region)	problems and their graphical presentation.	
	CHAPTER 5	CONTINUITY AND DIFFERENTIABILITY: Derivative of composite functions, chain rule, derivative of inverse trigonometric functions', implicit functions, concept of exponential and logarithmic functions. Derivative of logarithmic and exponential functions, of second order.	*To know about the important concept of continuity and Differentiability *To learn derivatives of composition functions, chain rule, inverse trigo functions, logarithmic functions, 2nd order derivative exponential functions.	
JULY (28)	CHAPTER 6 AOD	APPLICATION OF DERIVATIVES; Application of derivatives: rate of change of bodies, increasing /decreasing functions, use of derivatives. Maxima and minima (second derivative test as a provable tool). simple problems. that illustrate base principles and understanding of the subjects as well as real –life situations).	*To study application of derivative in various disciplines such as engineering, science and many other fields. *To learn how derivative can be used to determine to rate of change of quantities, *To find turning point, Problem of related to maxima and minima.	*To understand the concept of local maxima and local minima and point of inflection *To verify Rolle's theorem
	CHAPTER 7 INTEGRALS	INTEGRALS: Introduction, integration as an inverse process		*To evaluate the definite

		of differentiation, methods of integration, integrals of some particular functions, integration by partial fractions, by parts. Definite Integral, Fundamental theorem of Calculus	***To study indefinite and definite integrals and their elementary properties including some techniques.**	**integral $\int_a^b \sqrt{1-x2}$ as limit as sum and verify by integration form**
AUG. (32)	**CHAPTER 1 RELATONS AND FUNCTIONS CHAPTER 8 APPLICATION OF INTEGRALS**	**RELATION AND FUNCTIONS: Introduction , types of relation, types of functions.** **Applications of integrals: Introduction, area under simple curves.**	***To learnt different types of relations and functions.** ***To study about composition and inverse of functions** ***To learnt formula to calculate areas of geometrical figures including triangle rectangle and circles.**	***To demonstrate function which is one but not onto.**
SEPTEMBER (16)		**REVISION & MID TERM EXAM**		

OCTOBER (28)	**CHAPTER 9 DIFFERENTIAL EQUATIONS**	**Differential Equations: Introduction, basic concepts, General and particular solutions of a differential equation, whose general solution is given, methods of solving first order, first Degree differential equations.**	*** To study basic concepts related to differential equation, general and particular solutions.**	***To verify that angle in semi - circle is a right angle using vector method.**
	CHAPTER 10 VECTOR ALGEBRA	**Vector algebra: Introduction, some basic concepts, types of vectors, addition of vectors, multiplication of a vector by a scalar, product of two vectors.**	*** To study some basic concepts about vectors, their relation in space, types of vectors and their properties. Applicability of vectors in various areas.**	

NOVEMBER (32)	**CHAPTER 11 (THREE-DIMESNSIONAL GEOMETRY** **CHAPTER 13 PROBABILITY**	**Three Dimensional Geometry: Introduction, direction Cosines and directions of a line, equation of a line in space, angle between two lines, shortest distance between two lines,** **PROBABILITY: Introduction, conditional probability, multiplication theorem on probability, independent events, Bayes theorem, Random variables and its probability distributions and its mean.**	*** To study direction cosines, direction ratios of line joining two points. S.D. between two lines, distance of a point from a plane.** ***To study different types of probabilities and its application in actuarial science and other fields.**	***To verify the distance between two points by distance formula.** *** To explain the concept of conditional probability**
DECEMBER (14)		**REVISION AND I-PREBOARD EXAM**		
JANUARY (10) **FEBRUARY (10)**		**II-PREBOARD EXAM** **Revision of Annual Examination in the month of January and February**		

PHYSICAL EDUCATION

Month/Periods	Unit Name & Topics	Specific Learning Objectives	Suggested Teaching Learning process
April /13	**Management of SportingEvents 1** 1. Functions of Sports Events Management (Planning, Organising,Staffing, Directing & Controlling) 2. Various Committees & their Responsibilities (pre;during & post) 3. Fixtures and their Procedures – Knock-Out (Bye & Seeding) & League (Staircase, Cyclic,Tabular method) and Combination tournaments. 4. Intramural & Extramural tournaments – Meaning, Objectives & Its Significance	• To make the students understand the need andmeaning of planning in sports, committees, and their responsibilities for conducting the sports event or tournament. • To teach them about the different types of tournaments and the detailed procedure of drawing fixtures for KnockOut, League Tournaments, and Combination tournaments. • To make the students understand the need for the meaning and significance of intramuraland extramural tournaments.	▪ Lecture-based instruction, ▪ Technology-basedlearning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learning and ▪ Expeditionary learning.

	5. Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity)	• To teach them about the different types of community sports and their importance in our society.	
April /13	**Children & Women in Sports 2** 1. Exercise guidelines of WHO for different age groups. 2. Common postural deformities-knock knees, flat foot, round shoulders, Lordosis, Kyphosis, Scoliosis, and bow legs and their respective corrective measures. 3. Women's participation in Sports – Physical, Psychological, and social benefits. 4. Special consideration (menarche and menstrual dysfunction)	• To make students understand the exercise guidelines of WHO for different age groups • To make students aware of the common postural deformities • To make students awareof women's sports participation in India and about the special conditions of women. • To make students understand menarche and menstrual dysfunction among women athletes.	▪ Lecture-basedinstruction, ▪ Technology-basedlearning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learningand ▪ Expeditionary learning.

	5. Female athlete triad (osteoporosis,amenorrhea, eating disorders.	• To make them understand about female athlete triad.	
May/8	**Yoga as Preventive measure for Lifestyle Disease 3** 1. **Obesity:** Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhanpranayama. 2. **Diabetes:** Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana,Bhujangasana, Shalabhasana, Dhanurasana, Supta-vajarasana,	• To make students understand about the main life style disease - Obesity, Hypertension, Diabetes, Back Pain andAsthma. • To teach about different Asanas in detail which can help as a preventive measures for lifestyle diseases.	▪ Lecture-based instruction, ▪ Technology-based learning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learning and ▪ Expeditionary learning.

	Paschimottanasan-a, Ardha-Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati. 3. **Asthma:** Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasan-a, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana Matsyaasana, Anuloma-Viloma. 4. **Hypertension:** Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana,		

	UttanMandukasan-a, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadi-shodhanapranayam, Sitlipranayam. 5. **Back Pain and Arthritis:** Procedure, Benefits & Contraindications of Tadasan, Urdhawahastootansana, Ardh-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujandgasana, Gomukhasana, Bhadrasana, Makarasana, Nadi-Shodhana pranayama.		

May/07	**Physical Education and Sports for CWSN (Children with Special Needs - Divyang) 4** 1. Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics)	• To make students understand the concept of Disability and Disorder. • To teach students about the types of disabilities & disorders, their causes,	▪ Lecture-based instruction, ▪ Technology-based learning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learning

	2. Concept of Classification and Divisioning in Sports. 3. Concept of Inclusion in sports, its need, and Implementation; 4. Advantages of Physical Activities for children with special needs. 5. Strategies to make Physical Activities assessable for children with special needs.	and their nature. • To make them aware of Disability Etiquette. • To make the students understand the advantage of physical activity for CWSN. • To make the students aware of different strategies for making physical activity accessible for Children with Special Needs.	▪ Expeditionary learning.
July /12	**Sports & Nutrition** 1. Concept of balanced diet and nutrition 2. Macro and Micro Nutrients: Food sources & functions 3. Nutritive & Non-Nutritive Components of Diet 4. Eating for Weight control	• To make students understand the importance of a balanced diet • To clear the concept of Nutrition – Micro & Macronutrients, Nutritive & non-Nutritive Components of diet • To make them aware of eating for weight loss and the results of the pitfalls of dieting.	▪ Lecture-based instruction, ▪ Technology-based learning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learning and ▪ Expeditionary learning.

	– A Healthy Weight, The Pitfalls of Dieting, Food Intolerance, and Food Myths 5. Importance of Diet in Sports-Pre, During and Post competition Requirements	• To understand food intolerance & food myths	

July/13	**Test & Measurement in Sports** 1. Fitness Test – SAI Khelo India Fitness Test in school: Age group 5-8 years/ 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 (Partial Abdominal Curl Up, Push-Ups for boys, Modified Push-Ups for girls).	• To make students understand and conduct SAI KHELO INDIA Fitness Test and to make students Understand andconduct General Motor Fitness Test. • To make students to determine physical fitnessIndex through Harvard Step Test/Rockport Test • To make students to calculate Basal MetabolicRate (BMR) • To measure the fitness level of Senior Citizens through Rikli and Jones	▪ Lecture-based instruction, ▪ Technology-basedlearning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learning and ▪ Expeditionary learning.

	2. 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. 3. Computing Basal Metabolic Rate (BMR) 4. Rikli & Jones - Senior Citizen Fitness Test • Chair Stand Test for lower body strength • Arm Curl Test for upper body strength • Chair Sit & Reach Test for lower body flexibility • Back Scratch Test for upper body flexibility • Eight Foot Up & Go Test for agility • Six-Minute Walk Test for Aerobic Endurance 5. Johnsen – Methney Test of Motor Educability (Front Roll, Roll, Jumping	Senior Citizen FitnessTest.	

	Half-Turn, Jumping full-turn		
Aug/10	**Physiology & Injuries in Sport** 1. Physiological factors determining components of physical fitness 2. Effect of exercise on the Muscular System 3. Effect of exercise on the Cardio-Respiratory System 4. Physiological changes due to aging 5. Sports injuries: Classification (Soft Tissue Injuries -Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)	• Understanding the physiological factors determining the components of physical fitness. • Learning the effects of exercises on the Muscularsystem. • Learning the effects of exercises on Cardiovascular system. • Learning the effects of exercise on the Respiratory system. • Learning the changescaused due to aging. • Understanding the Sports Injuries (Classification, Causes, and Prevention) • Understanding the Aims & Objectives of First Aid	▪ Lecture-basedinstruction, ▪ Technology-based learning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learningand ▪ Expeditionary learning.

		• Understanding the Management of Injuries	
Aug/10	**Biomechanics and Sports** 1. Newton's Law of Motion & its application in sports 2. Types of Levers and their application in Sports. 3. Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports 4. Friction & Sports 5. Projectile in Sports	• Understanding Newton's Laws of Motion and their application in Sports. • Make students understand the lever and its application in sports. • Make students understand the concept of Equilibrium and its application in sports. • Understanding Friction in Sports. • Understanding the concept of Projectile in sports.	▪ Lecture-basedinstruction, ▪ Technology-basedlearning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learningand ▪ Expeditionary learning.
Aug/10	**Psychology and Sports** 1. Personality; its definition & types (Jung Classification & Big Five Theory)	• To make students understand Personality &its classifications. • To make students	▪ Lecture-based instruction, ▪ Technology-basedlearning, ▪ Group learning, ▪ Individual learning,

	2. Motivation, its type & techniques. 3. Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it 4. Meaning, Concept & Types of Aggressions in Sports 5. Psychological Attributes in Sports – Self-Esteem, Mental Imagery, Self-Talk, Goal Setting	understand motivationand its techniques. • To make students about exercise adherence and strategies for enhancing adherence to exercise. • To make them aware of aggression in sports and types. • To make students understand Psychological Attributes in Sports.	▪ Inquiry-based learning, ▪ Kinesthetic learning, ▪ Game-based learning and ▪ Expeditionary learning.
Sept /14	▪ **MID TERM ASSESSMENT** ▪ **Revision**		

Oct/20	**Training in Sports** 1. Concept of Talent Identification and Talent Development in Sports 2. Introduction to Sports Training Cycle – Micro,	• Making the students understand the concept of talent identification and methods in sports • Making the students understand sports	▪ Lecture-basedinstruction, ▪ Technology-based learning, ▪ Group learning, ▪ Individual learning, ▪ Inquiry-based learning, ▪ Kinesthetic learning,
	Meso, Macro Cycle. 3. Types & Methods to Develop – Strength, Endurance, and Speed. 4. Types & Methods to Develop – Flexibility and Coordinative Ability. 5. Circuit Training - Introduction & its importance	training and the different cycle in sports training. • Making the students understand different types & methods of strengths, endurance, and speed. • Making the students understand different types & methods of flexibility and coordinative ability. • Making the students understand Circuit training and its importance.	▪ Game-based learning and ▪ Expeditionary learning.
Nov/ Dec/ Jan	▪ **Revision**		

(PRACTICAL/ PROJECTS ETC.)

PRACTICAL	**(Max. Marks 30)**
Physical Fitness Test: SAI Khelo India Test, Brockport Physical Fitness Test (BPFT)*	6 Marks
Proficiency in Games and Sports (Skill of any one IOA recognized Sport/Game of Choice)**	7 Marks
Yogic Practices	7 Marks
Record File ***	5 Marks
Viva Voce (Health/ Games & Sports/ Yoga)	5 Marks

- *Test for CWSN (any 4 items out of 27 items. One item from each component: Aerobic Function, Body Composition, Muscular strength & Endurance, Range of Motion or Flexibility)
- **CWSN (Children With Special Needs – Divyang): Bocce/Boccia , Sitting Volleyball, Wheel Chair Basketball, Unified Badminton, Unified Basketball, Unified Football, Blind Cricket, Goalball, Floorball, Wheel Chair Races and Throws, or any other Sport/Game of choice.
- **Children with Special Needs can also opt any one Sport/Game from the list as alternative to Yogic Practices. However, the Sport/Game must be different from Test - 'Proficiency in Games and Sports'

*****Record File shall include:**

- **Practical-1:** Fitness tests administration. (SAI Khelo India Test)
- **Practical-2:** Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.
- **Practical-3:** Anyone one IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment. Also, mention its Rules, Terminologies & Skills.

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- **CWSN (Children With Special Needs – Divyang): Bocce/ Boccia , Sitting Volleyball, Wheel Chair Basketball, Unified Badminton,Unified Basketball, Unified Football, Blind Cricket, Goal ball, Floor ball, Wheel Chair Races and Throws, or any other Sport/Game of choice.
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PHYSICS

MONTH/ PERIODS	UNIT	TOPICS	LEARNING OBJECTIVES
APRIL (18)	RAY OPTICS AND OPTICAL INSTRUMENTS	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.	• To make the learners understand the applications of different lenses, mirrors and optical instruments in our daily life. • Also, make them aware of mathematical formulae and their applications. • To make them able to understand numerical problems.

APRIL (8)	**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**	• **To make the learners aware about the dual nature of radiation of light i.e. (particle and wave) along with experimental and Mathematical Verification.**
MAY (10)	**ATOMS AND NUCLEI**	**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). 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.**	• **To make the learners understand the basic structure of atom, composition of nucleus,** • **Theories given by different scientists Rutherford &Bohr's Atomic Model etc.)** • **In addition, its importance in one life.**

MAY (5)	**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 junction Semiconductor Diode-I-V Characteristics in forward and reverse bias, application of junction diode as a rectifier**	• **To make the learners aware about the semiconductor electronics**
JULY (15)	**ELECTRO STATICS (ELECTRIC CHARGES AND FIELD)**	**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 a 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**	• **To make the learners understand the theoretical and mathematical concepts of Electric charges and the properties and electrostatic forces and fields of different charge distribution.**

		spherical shell (field inside and outside)	
JULY (10)	**ELECTROSTATICS (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, a combination of capacitors in series and in parallel, the capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor. (No derivation, formulae only)**	**To enable the learner to** • **Appreciate the knowledge of electric charges and fields** • **Find the analogy between gravitational force and electrostatic force** • **Identify electrostatic force as conservative force**

AUGUST (18)	**CURRENT ELECTRICITY**	**Electric current, the 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 nonlinear), electrical energy and power, electrical resistivity and conductivity; temperature dependence of resistance. Internal resistance of a cell, potential difference, and emf of a cell, a combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge**	**To enable the learner to:** • **Derive and define drift velocity, mobility, electric current,** • **Draw V-I graphs for ohmic and non ohmic materials and Resistivity Temperature graphs for different materials** • **Derive the equivalent resistance in series and parallel combination** • **Define and write the relation between internal resistance and emf, equivalent emf and internal resistance in series and parallel combination** • **Write and apply Kirchhoff's rules** • **Describe the construction and the principle of Wheatstone bridge** • **Solve numerical problems based on the above topics**
AUGUST (12)	**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**	**To enable the learner to:** • **Concept of magnetic field, Oersted's experiment.** • **Biot - Savart law and its application to current carrying circular loop.**

		solenoids (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields	• **Ampere's law and its applications.**
SEPTEMBER (14)		**REVISION FOR MID-TERM EXAMINATION**	
OCTOBER (8)		**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.**	

OCTOBER (8)	**MAGNETISM AND MATTER**	**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**	**To enable the learner to:** • **Earth's magnetic field and magnetic elements.** • **Para-, dia- and ferro - magnetic substances**
OCTOBER (9) **NOVEMBER (12)**	**ELECTROMAGNETIC INDUCTION AND ALTERNATING CURRENT**	**Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.** **Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit (phasors only), resonance, power in AC**	**To enable the learner to** • **Changing magnetic field induces electromotive force (EMF) in a circuit. They will be able to calculate EMF and determine the direction of induced current using the right-hand rule in certain cases.** • Derivation of Mean or average value of a.c. Root – mean-square (rms) or effective or

		circuits, power factor, wattless current. AC generator, Transformer.	virtual value of a.c. Impedance, For LCR series circuit
NOVEMBER (4)	**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.**	**To enable the learners to understand** • **Derivation of Displacement current and Numerical based on electromagnetic wave velocity**
NOVEMBER (13)	**WAVE OPTICS**	**Wave front and Huygens's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygens'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)**	To enable the learners to understand • Huygens's Principle, and diffraction • **Interference patterns and single slit diffraction pattern**

PRACTICALS

- **Record of at least 8 Experiments [with 4 from each section], to be performed by the students.**
- **Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.**
- **The Report of the project carried out by the students.**

LIST OF EXPERIMENTS

SECTION A

1. **To determine resistivity of two / three wires by plotting a graph for potential difference versus current.**
2. **To find resistance of a given wire / standard resistor using meter bridge.**
3. **To verify the laws of combination (series) of resistances using a meter bridge.**

   OR

   To verify the laws of combination (parallel) of resistances using a meter bridge.
4. **To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.**

SECTION B

1. **To find the value of v for different values of u in case of a concave mirror and to find the focal length.**
2. **To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.**
3. **To determine refractive index of a glass slab using a travelling microscope**
4. **To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.**

LIST OF ACTIVITIES

SECTION A

1. **To assemble the components of a given electrical circuit.**
2. **To study the variation in potential drop with length of a wire for a steady current.**
3. **To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.**

SECTION B

1. **To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.**
2. **Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order**
3. **To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.**

POLITICAL SCIENCE (028)

Chapter No.	Chapter Name	Marks Allotted
	PART-I INDIAN CONSTITUTION AT WORK	
1	The End of Bipolarity	6
2	Contemporary Centres of Power	6
3	Contemporary South Asia	6
4	International Organizations	6
5	Security in the Contemporary World	6
6	Environment and Natural Resources	6
7	Globalisation	4
	Total	40
	PART-II POLITICAL THEORY	
1	Challenges of Nation-Building	6
2	Era of One-Party Dominance	4
3	Politics of Planned Development	2
4	India's External Relations	6
5	Challenges to and Restoration of the Congress System	4
6	The Crisis of Democratic Order	4
7	Regional Aspirations	6
8	Recent Developments in Indian Politics	8
		40
	PRACTICAL	20
	TOTAL	100
	Suggested reference book:- Political Science By - B .B.Tayal, Oswal and Sample Paper	

MONTH	PERIODS	CONTENT	LEARNING OBJECTIVES	SUGGESTED ACTIVITIES
April	35	Ch:2 The End of Bipolarity Ch:4 New centers of power Part-B Ch:1 Challenges of nation building	To make students understand about the disintegration of USSR. To make students learn about the European union and alternative centres of political and economic power.	Role play Find out about BRICKS
May	32	Ch:5 Contemporary South Asia Ch:6 United Nations and its organizations	To make the student aware about different International Organisations & their role in maintaining peace in the world.	Analyse the role of UNO in the present day situation.
July	32	Ch:7 Security in Contemporary world PART-B Ch:3 Planned development	To make students aware about POSCO	To find out the latest countries who have become democratic in the last few years.
August	32	Ch:8 Environment and natural resources Ch:9 Globalization	To make students aware about the recent developments in the political system of India How different countries of the world are inter connected through globalization.	Discussion in the class on the causes of environmental degradation. Discussion on the impact of globalization.

Sep.	**16**	**Ch:4 India's foreign policy** **MID TERM EXAMINATION**	**To make students aware about India's nuclear policy and external relations**	**Debate and Discussion**
October	**30**	**Ch:5 Parties and party system in India** **Ch:6 Democratic resurgence**	**To make them understand about the different political parties and election commission**	**Role play**
Nov.	**30**	**Ch:8 Regional Aspirations** **Ch: 9 Indian Politics recent: Trends and development**	**To make students aware about Indian politics**	**Group Activity and Poster making**
Dec.	**16**	**Revision** **PRE-BOARD EXAMINATION**	**To make students understand and revise all the concepts related to different chapters.**	
January	**08**	**PRE-BOARD EXAMINATION**		
Feb.	**10**	**Practice Papers & worksheets**	**BOARD EXAMINATION**	

PSYCHOLOGY (037)

Prescribed Books:

Psychology, Class XII, Published by NCERT

Theory Paper :3 Hours

Marks: 70

Units	Topics	Marks
I	Variations in Psychological Attributes	13
II	Self and Personality	13
III	Meeting Life Challenges	9
IV	Psychological Disorders	12
V	Therapeutic Approaches	9
VI	Attitude and Social Cognition	8
VII	Social Influence and Group Processes	6
	Total	70

COURSE CONTENT

MONTH/ PERIODS	UNIT	TOPIC	LEARNING OBJECTIVES	SUGGESTED ACTIVITIES
APRIL (35)	1.	Variations in Psychological Attributes The topics in this unit are: • Introduction • Individual Differences in Human Functioning • Assessment of Psychological Attributes • Intelligence • Psychometric Theories of Intelligence, Information Processing Theory: Planning, Attention-arousal and • Simultaneous successive Model of Intelligence, Triarchic Theory of Intelligence; Theory of Multiple Intelligences. • Individual Differences in Intelligence • Culture and Intelligence • Emotional Intelligence • Special Abilities: Aptitude: • Nature and Measurement • Creativity	Students will be able to evaluate on the concept of intelligence and will also be able to assess intelligence using various psychological tools. They will also be able to assess the 'g' factor of intelligence.	1.Mind map preparation 2.Class presentation (BYOD)

MAY (32)	**2.**	**Self and Personality** **The topics in this unit are:** 1. **Introduction** 2. **Self and Personality** 3. **Concept of Self** **Cognitive and Behavioural aspects of Self** 5. **Culture and Self** 6. **Concept of Personality** 7. **Major Approaches to the Study of Personality** • **Type Approaches** • **Trait Approaches** • **Psychodynamic Appraoch and Post Freudian Approaches** • **Behavioural Approach** • **Cultural Approach** • **Humanistic Approach** 8. **Assessment of Personality** • **Self-report Measures** • **Projective Techniques** • **Behavioural Analysis** **PRACTICAL:TEST -1**	**Students will be able to evaluate on the concept of self and personality and will also be able assess personality using various psychological tools.** **Students will be able to administer psychometric test successfully**	**1.Mind map preparation** **2. Prepare a questionnaire as a Self-report measure.** **3. Test administration**
JUNE		**SUMMER VACATION**		

JULY (32)	**3**	**Meeting Life Challenges** **The topics in this unit are*:*** 1. **Introduction** 2. **Nature, Types and Sources of Stress** 3. **Effects of Stress on Psychological Functioning and Health** • **Stress and Health** • **General Adaptation Syndrome** • **Stress and Immune System** • **Lifestyle** 4. **Coping with Stress** • **Stress Management Techniques** 5. **Promoting Positive Health and Well-being** • **Life Skills** **Positive Health** **PRACTICAL:TEST -2**	**Students will be able to mention the various sources of stress and discuss the various strategies to manage stress.** **Students will be able to administer psychometric test successfully**	**1. Make a power point presentation on the various stress management techniques.** **2. Mind map preparation** **3. Test administration**

AUGUST (32)	**4**	**Psychological Disorders** **The topics in this unit are:** 1. **Introduction** 2. **Concepts of Abnormality and Psychological Disorders** • **Historical Background** 3. **Classification of Psychological Disorders** 4. **Factors Underlying Abnormal Behaviour** 5. **Major Psychological Disorders** • **Anxiety Disorders** • **Obsessive-Compulsive and Related Disorders** • **Trauma-and Stressor-Related Disorders** • **Somatic Symptom and Related Disorders** • **Dissociative Disorders** • **Depressive Disorder** • **Bipolar and Related Disorders** • **Schizophrenia Spectrum and Other Psychotic Disorders** • **Neurodevelopmental Disorders** • **Disruptive, Impulse-Control and Conduct Disorders**	**Students will be able to state the difference between normal and abnormal behaviour. They will also be able to mention all the categories of psychological disorder.**	**1.Presentation of the categories of the disorders on a chart paper.** **2. Mind map preparation** **3. Test administration**

		• **Feeding and Eating Disorders** • **Substance Related and Addictive Disorders** **PRACTICAL:TEST -3**	**Students will be able to administer psychometric test successfully**	
SEPT (16)	**5.**	**Therapeutic Approaches** **The topics in this unit are:** 1. **Nature and Process of psychotherapy** • **Therapeutic relationship** 2. **Types of Therapies** • **Behaviour Therapy** • **Cognitive Therapy** • **Humanistic-Existential Therapy** • **Alternative Therapies** • **Factors contributing to healing in Psychotherapy** • **Ethics in Psychotherapy** **Rehabilitation of the Mentally Ill**	**Students will be able to illustrate all the psychological therapies for the different disorders.**	**1.Role play** **2. Case study discussion** **3. Mind map preparation**
MID TERM EXAMINATION				

OCT (30)	**6.**	**Attitude and Social Cognition** **The topics in this unit are:** 1. **Introduction** 2. **Explaining Social Behaviour** 3. **Nature and Components of Attitudes** 4. **Attitude Formation and Change** • **Attitude Formation** • **Attitude Change** • **Attitude-Behaviour Relationship** 5. **Prejudice and Discrimination Strategies for Handling Prejudices.**	**Students will be able to define attitude and discuss the A-B-C components of attitude. They will also be able to elaborate on the concept of prejudices.**	**1.Case study discussion** **2. Mind map preparation** **3. Test administration**
NOV (30)	**7.**	**Social Influence and Group Processes** **The topics in this unit are:** 1. **Introduction** 2. **Nature and Formation of Groups** 3. **Type of Groups** 4. **Influence of Group on Individual Behaviour** • **Social Loafing**	**Students will be able to define group and differentiate between group and crowd. They will also be able to discuss the various elements of group.**	**1.Case study preparation** **2. Mind map preparation**

		• **Group Polarisation** **RECAITULATION OF UNIT 1,2&3**		
DEC (16)		**PROJECT: CASE PROFILE** **PRACTICAL:TEST -4** **PRACTICAL:TEST -5**	**Students will be able to build case profile with all the requirements needed for that.** **Students will be able to administer psychometric test successfully.**	
PRE BOARD 1				
JAN (8)		**REVISION**	**Students will be able to recapitulate the portions of syllabus**	**Worksheets, oral discussion**
PRE BOARD 2				
FEB (10)		**REVISION**	**Students will be able to recapitulate the portions of syllabus**	**Worksheets, oral discussion**

Practical schedule: **60 Periods**

A. **Development of case profile:**

Using appropriate methods like interview, observation & psychological tests.

B. **Test administration:**

Students are required to administer and interpret five psychological tests related to various psychological attributes like intelligence, aptitude, attitude, personality, etc.

C. **In the Practical examination, the student will be required to administer and interpret two psychological tests.**

Distribution of Marks:

Practical File and Case Profile	**10 Marks**
Viva Voce (Case Profile & Two Practical exams)	**05 Marks**
Two Practical exams (5 marks for conduct of practical exams and 10 marks for reporting)	**15 Marks**
Total	**30 Marks**

QUESTION PAPER DESIGN

CLASS – XII (2023-24)

Board Examination: Theory

Time: 3 Hours		**Maximum Marks: 70**	
S. No.	**Competencies**	**Total Marks**	**% Weightage**
1	**Remembering and Understanding: Exhibiting memory of previously learned material by recalling facts, terms, basic concepts, and answers; Demonstrating understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas**	**25**	**35%**
2	**Applying: Solving problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way**	**31**	**45%**
3	**Formulating, Analysing, Evaluating and Creating: Examining and breaking information into parts by identifying motives or causes; Making inferences and finding evidence to support generalizations; Presenting and defending opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria; Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions**	**14**	**20%**
	Total	**70**	**100%**

II. Practical: 30 Marks

पाठ्यक्रम **(2025-26)**
कक्षा बारहवीं
विषय हिंदी

माह	इकाई	विषयवस्तु	कला समेकित गतिविधियाँ
		1 पाठ्यपुस्तक 2.गद्य 3. पद्य 4 व्याकरण 5 लेखन 6. अंतराल	
अप्रैल / 26		गद्य-प्रेमधन की छाया स्मृति,सुमिरिनी के मनके पद्य- देवसेना का गीत,कार्नेलिया का गीत व्याकरण-जनसंचार के माध्यम- प्रिंट माध्यम अंतराल- सूरदास की झोपड़ी	भारत की विशेषताओं पर एक रचनात्मक लेख लिखिए
मई/ 22		गद्य- सुमिरिनी के मनके,संवदिया पद्य- सरोज स्मृति(निराला), यह दीप अकेला व्याकरण-जनसंचार के माध्यम- रेडियो,समाचार लेखन	हिंदी परियोजना कार्य के विषयों का चुनाव किया जाएगा
जुलाई /26		गद्य – गांधी ,नेहरू और यास्सेर अराफात , कुटज पध—- बारहमासा,एक बूंद व्याकरण—- इंटरनेट ,कहानी की रूपरेखा,फीचर लेखन	परियोजना कार्य से संबंधित विषय के बारे में छात्रों को जानकारी देकर कार्य करवाया जाएगा
अगस्त/24		गद्य– शेर, पहचान ,चार हाथ , साझा पद्य— भरत राम का प्रेम बनारस (केदारनाथ अग्रवाल) अंतराल– बिस्कोहर की माटी व्याकरण—नाटक की रूपरेखा	भरत के त्याग और समर्पण की किसी एक घटना का सचित्र वर्णन कीजिए बनारस शहर की विशेषताओं का सचित्र वर्णन कीजिए
सितंबर /12	अर्धवार्षिक परीक्षा	व्याकरण—- आलेख लेखन रचनात्मक लेखन अपठित गद्यांश अपठित काव्यांश (करवाए गए कार्य की पुनरावृति)	श्रवण वाचन कौशल करवाया जाएगा

अक्टूबर /22		गद्य— जहां कोई वापसी नहीं पद्य– विद्यापति की पदावली ,दिशा (केदार नाथ सिंह), तोड़ो अंतराल—- अपना मालवा खौ उजरो सभ्यता	विस्थापन की समस्या पर लेख लिखिए
नवंबर /25		गद्य—दूसरा देवदास पद्य– कवित (घनानंद),वसंत आया(रघुवीर सहाय) व्याकरण- कविता की रूपरेखा, सभी पाठों के बहुविकल्पीय प्रश्न उत्तर	पाठों के कार्य प्रपत्र करवाए जाएंगे|
दिसंबर /12	प्री बोर्ड परीक्षा	सभी कविताओं की सप्रसंग व्याख्या (पुनरावृति)	
जनवरी /10 फरवरी /10	प्री बोर्ड परीक्षा	यू लाइक सैंपल पेपर यू लाइक सैंपल पेपर	

शैक्षणिक उद्देश्य -

गद्य---गद्य विधा के माध्यम से जीवन के परिवेश, समकालीन यथार्थ वह चुनौतियों के प्रति सजग रहना। भाषा साहित्य को मजबूत करना। सृजनात्मक साहित्य की सराहना, उस का आनंद उठाना और उसके प्रति सृजनात्मक और आलोचनात्मक दृष्टि का विकास करना।

पद्य--विद्यार्थियों में साहित्य ज्ञान, रस, अलंकार भाषा व भाव विकसित करके उसकी महत्व उपयोगिता को समझना। विविध कवियों की रचनाओं को पढ़ना वह साहित्य के प्रति अनुराग उत्पन्न करना।

व्याकरण- 1.संचार माध्यमों में प्रयुक्त हिंदी भाषा की प्रकृति से अवगत कराना और नवीन विधियों के प्रयोग की क्षमता को बढ़ाना।

2. अमूर्त विषयों पर प्रयुक्त भाषा का विकास और कल्पनाशीलता और मौलिक चिंतन के लिए प्रयोग करना।

3. कविता व कहानी के प्रति छात्रों के मन में अनुराग लिखने के लिए प्रेरित करना।