MAHARSHI PATANJALI VIDYA MANDIR

SYLLABUS
CLASS 12
SESSION- 2025-26

SUBJECT – HISTORY

MONTH	BOOK	**CHAPTERS**
April	1	1. Bricks, Beads, and Bones
May		2. Kings, Farmers, and Towns
		3. Kingship, Caste and class
July		4. Thinkers, beliefs and buildings
August	2	5. Through the eyes of Travellers
		6. Bhakti-Sufi Traditions
UNIT TEST - 1	212	Chap 1
August		7. An Imperial Capital: Vijayanagar
September	2	8. Peasants, Zamindars and the Sate
HALF YEARLY EXAMINATION		CHAPTERS 1-7
October	3	10. Colonialism and the countryside
	Project Work in History	
November	3	11. Rebels and the Raj 13. Mahatma Gandhi and the National Movement
December	3	15. Framing the constitution
DECEMBER (1st PRE BOARD)		FULL SYLLABUS
JANUARY (2nd PRE BOARD)		FULL SYLLABUS

SUBJECT: HINDI

पाठ्य पुस्तकें -
1.आरोह -भाग 2 ,
2.वितान -भाग 2
3.व्याकरण- अभिव्यक्ति और माध्यम

अप्रैल-
गद्य- भक्तिन
पद्य- आत्म परिचय
व्याकरण -प्रिंट माध्यम और उसके विविध प्रकार

मई-
गद्य- बाजार दर्शन
पद्य-एक गीत
वितान-सिल्वर वैडिंग
व्याकरण- विभिन्न माध्यमों के लिए रचनात्मक लेखन

जुलाई-
गद्य- काले मेघा पानी दे
पद्य-पतंग ,कविता के बहाने
वितान -जूझ
व्याकरण- पत्र लेखन

अगस्त-
गद्य- पहलवान की ढोलक
पद्य- बात सीधी थी पर ,कैमरे में बंद अपाहिज
व्याकरण- पत्रकारीय लेखन के विभिन्न रूप और लेखन प्रक्रिया

सितंबर-
गद्य शिरीष के फूल
पद्य-उषा ,बादल राग
व्याकरण -रेडियो नाटक, कविता, नाट्य रूपांतरण, कहानी, अप्रत्याशित विषयों पर आधारित लेखन, आलेख लेखन,फीचर लेखन।

अक्टूबर-
गद्य - श्रम विभाजन और जाति प्रथा , मेरी कल्पना का आदर्श समाज
पद्य- कवितावली ,लक्ष्मण मूर्छा और राम का विलाप
वितान -अतीत में दबे पांव ,
व्याकरण-विशेष लेखन - स्वरूप और प्रकार,रचनात्मक लेखन का अभ्यास

नवंबर -
गद्य-रूबाइयां,मेरी कल्पना का आदर्श समाज
पद्य - छोटा मेरा खेत ,बगुलों के पंख
व्याकरण - सभी पाठों की पुनरावृत्ति

दिसंबर- पढ़ाए गए समस्त पाठों की पुनरावृत्ति ।

SUBJECT: ENGLISH CORE

APRIL

The Last Lesson (F)

My Mother at Sixty Six (F)

Lost Spring (F)

MAY

Deep Water (F)

The Third Level (V)

Tiger King (V)

Notice Writing (AWS)

JULY

The Rattrap (F)

Keeping Quiet (F)

Journey to the End of the Earth (V)

AUGUST

Invitations- Formal/Informal Invitation (AWS)

Indigo (F)

Poets and Pancakes (F)

The Enemy(V)

SEPTEMBER

The Interview (F)

A Thing of Beauty (F)

ASL(Both Listening and Speaking)

OCTOBER

A Roadside Stand (F)

Replies to Invitation (AWS)

Job Application with bio-data (AWS)

Report Writing(AWS)

Letter to the Editor (AWS)

Article Writing (AWS)

NOVEMBER

Going Places (F)

Aunt Jennifer' s Tigers (F)

On the Face of It (V)

Memories of Childhood (V)

DECEMBER

English Project Work & Art Integration + Viva Voce

Revision & Discussion of Board Papers

1ST UNIT TEST: ALL CHAPTERS & AWS COMPLETED TILL May

HALF- YEARLY EXAM: EVERYTHING COMPLETED TILL SEPTEMBER

PRE- BOARDS: THE ENTIRE SYLLABUS

Abbreviations Used

(F) = Flamingo

(V) = Vistas

(AWS) = Advanced Writing Skills

ECONOMICS

MONTH	BOOK	CHAPTERS
April	Macroeconomics	1) Introduction To Macroeconomics 2) Circular Flow Of income 3) Measurement of N.I.
May	Indian Economic Development	1) Introduction to Indian Economy 2) Five Year Plans
	Macroeconomics	3) Measurement Of N.I Continued.
July	Macroeconomics	4) Money And Banking Meaning and supply of money, currency held by the public and net demand deposits held by commercial banks. Money creation, Central bank and

		its functions.
July	Indian Economic Development	3 Growth and development of Agriculture, Industry and foreign trade 4) Economic reforms since 1991
UNIT TEST-1 (JULY)	**MACROECONOMICS**	**CHAPTERS 1-3**
	INDIAN ECONOMIC DEVELOPMENT	**CHAPTERS 1-2**
August	Indian Economic Development	5) Rural Development 6) Human Capital formation
August-September	Macroeconomics	6) Determination of Income And Employment
HALF YEARLY EXAMINATION (September-October}	**MACROECONOMICS**	**CHAPTERS 1-4**
	INDIAN ECONOMIC DEVELOPMENT	**CHAPTERS 1-6**
October	Indian Economic Development	7) Employment& Unemployment.
October	Macroeconomics	7)Government Budget

	Project Work in Economics	
November	Indian Economic Development	8) Environment and Sustainable Development Meaning, effects of economic development on resources and environment including global warming
November	Macroeconomics	8) Balance Of Trade And Payments Meaning and components 9) Foreign exchange rate – meaning of fixed and flexible rates and managed floating .
December	Indian Economic Development	10) Developme nt Experience Of India with neighbours
December	Macro & Indian Eco Dev	Practice Questions of Last Year CBSE Papers.
DECEMBER(1st PRE BOARD)		**FULL SYLLABUS**

January(2nd PRE BOARD)		**FULL SYLLABUS**

SUBJECT: BIOTECHNOLOGY

Month Topics to be covered

April	Microbia lculture and application
May	Microbial culture and application (contd....)
July	Plant cell culture and application
	Recombinant DNA technology
August	Genomics and bioinformatics
September	Animal cell culture and applications
October	Protein structure and engineering
November	Protein structure and engineering (contd.....)

Practicals:

1. Use of special equipments in biotechnology experiments
2. Isolation of DNA from plant material.
3. Preparation of media.
4. Dilution of soil samples.
5. Pouring of media, spreading and streaking of sample on media.
6. Cell viability assay
7. Gram staining.
8. Computer based all practicals.

a. Studying DNA sequence comparing proteins using GenBank.

b. Compositional analysis

c. Motif analysis

d. Complementary sequence

e. Gen Bank.

Unit test I: Microbial culture and application

Half yearly: Microbial culture, plant cell culture, Recombinant DNA technology

Preboard I: All chapters

SUBJECT: BIOLOGY

Month Topics to be covered

April UnitX-Ecology

Organisms and Populations

May Ecosystem

July Biodiversity and conservation

August UnitVI-Reproduction

Sexual Reproduction in Flowering Plant

Human Reproduction

Reproductive health

September Unit VIII- Biology in Human Welfare

Human Health and Disease

Microbes in Human Welfare

October UnitVII-Genetics and Evolution

Principles of Inheritance and Variations

Molecular Basis of Inheritance

November Evolution

Unit IX- Biotechnology

Biotechnology: Principles and Processes

Biotechnology and its Applications

Unit Test - 1 Topics taught in the class.

Half Yearly Chapter 11,12,13,1,2,3,7

Pre - Board I All chapters

Practicals-

List of Experiments

1. Prepare a temporary mount to observe pollen germination.

2.Study the plant population density by quadrat method,

3.Study the plant population frequency by quadrat method.

4. Prepare a temporary mount of onion root tip to study mitosis.

5. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B. Study and observer the following (Spotting):

1. Flowers adapted to pollination by different agencies (wind, insects, birds).

2. Pollen germination on stigma through a permanent slide or scanning electron micrograph.

3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).

4. Meiosis in onion bud cell or grasshopper testis through permanent slides.

5. T.S. of blastula through permanent slides (Mammalian).

6. Mendelian inheritance using seeds of different colour/sizes of any plant.

7. 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.

8. Controlled pollination - emasculation, tagging and bagging.

9. Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.

10.Models specimen showing symbolic association in root modules of leguminous plants, Cuscuta on host, lichens.

11.Flash cards models showing examples of homologous and analogous organs.

SUBJECT: CHEMISTRY

April - Solutions, Electrochemistry

May - Chemical kinetics

July - Biomolecules,Haloalkanes and haloarenes.

August - Alcohols, Phenol and ether

September - Aldehydes, Ketones and Carboxylic Acids ,Organic compounds containing Nitrogen

October - Organic compounds containing Nitrogen (continued)

November - d and f-block elements, Co-ordination compounds

December - co-ordination compounds (Contd.)

1'st Unit Test-	Solutions, Electrochemistry
Half yearly--	Solutions, Electrochemistry, General principles and process of isolation of elements, Chemical kinetics, Biomolecules, Haloalkanes and Haloarenes,Alcohols, Phenol and Ethers,
Pre Board Exams	**Complete Syllabus**

Chemistry Practical

Ist Term – 1. Salt Analysis - Test for Cations and anions

2. Core – Experiments –

a. To prepare double salt
b. To Identify carbohydrate, fats and proteins in a given food – stuff.
c. To prepare a colloidal sol of starch

d. To separate the coloured components present in the black ink by paper chromatography and compare Rf value.
e. To prepare a sample of Iodoform
f. To detect the presence of functional group in a given organic sample.

IInd Term –

Preparation of standard solution of Mohr's salt and oxalic acid and determination of molarity of unknown $KMnO_4$ solution.

SUBJECT: LEGAL STUDIES

APRIL

a) Introduction to Contracts b) Formation of Contract c) Intention to Contract d) Consideration e) Capacity to Contract f) Consent g) Types of Contracts h) Discharge of Contract i) Remedies in case of breach

a) Concept of law of Torts b) Sources of Law of Torts

MAY

c) Intentional Tort d) Defamation e) Negligence f) Strict Liability g) Absolute Liability

a) Types of Property b) Who can transfer property c) Essential of a valid transfer d) Types of Transfer- Sale, Lease, Exchange, Gift

JULY

a) Meaning of Intellectual Property b) International Obligations that have shaped Indian IPR c) WIPO d) Copyright e) Patent f) Trademark g) Geographical Indication h) Design

Structure, hierarchy of courts, and legal officers in India

Salient features of Indian judiciary

Legal officers in India

Independence of judiciary as a constitutional safeguard. (provisions relating to the judges)

Different roles of the supreme court of india

Public interest litigations- a powerful tool for judicial activism

Appointments, retirement and removal of judges

Courts and judicial review

AUGUST

Alternative dispute resolution in India (adr)

Adversarial and Inquisitorial Systems

Adversarial and Inquisitorial Systems

Arbitration

Mediation

Conciliation

Lok adalat

. Ombudsman

SEPTEMBER

a) Introduction to Contracts b) Formation of Contract c) Intention to Contract d) Consideration e) Capacity to Contract f) Consent g) Types of Contracts h) Discharge of Contract i) Remedies in case of breach

a) Concept of law of Torts b) Sources of Law of Torts c) Intentional Tort d) Defamation e) Negligence f) Strict Liability g) Absolute Liability

a) Types of Property b) Who can transfer property c) Essential of a valid transfer d) Types of Transfer- Sale, Lease, Exchange, Gift

a) Meaning of Intellectual Property b) International Obligations that have shaped Indian IPR c) WIPO d) Copyright e) Patent f) Trademark g) Geographical Indication h) Design

a) Law and Sustainable Development

OCTOBER

Forms of Legal Entities

a) Introduction b) Initiatives under International Scenario c) Provisions under Indian Constitution d) Environment Protection Act, 1986 e) Pollution Control Boards

Types of Legal Entities in India a) Sole Proprietorship b) Partnership c) Limited Liability Partnership d) Private Limited company e) Public Limited Company f) One Person Company

a) Objectives of Criminal law b) Legislations for Criminal laws in India c) Distinction between Intention and Motive d) Stages of crime e) The Indian Evidence Act f) Admission and Confession)

Human Rights Introduction 1. Historical Context b) Indian Constitutional framework on Human Rights and related Laws in India 1. The Preamble 2. Fundamental Rights-Part III of the Constitution 3. Directive Principles-Part IV- Articles 36-51 4. Fundamental Duties- Part IV(A)- Article 51

a) What are Quasi- Judicial Bodies? b) Various Human Rights Commissions 1. National Human Rights Commission (NHRC) 2. National Commission for Minorities 3. National Commission for Women (NCW) a) National Commission for Scheduled Castes and Scheduled Tribes b) National Commission for Protection of Child's Rights (NCPCR)

NOVEMBER

a) Introduction b) Historical Evolution of International Law c) What is International Law

d) Sources of International Law e) International Human Rights f) International Law & Municipal Law g) International Law & India h) Dispute Resolution

a) The Advocate Act,1961 b) Lawyers and Professional Ethics c) Advertising by Lawyers d) Liberalization and Globalization of legal profession e) Women and Legal Profession f) Legal Education in India, USA and UK g) Opportunities for Law Graduates

DECEMBER

a) Brief history of Legal services b) Free Legal Aid under Criminal law c) Legal aid by the State d) Legal Aid under the Indian Constitution e) National Legal Services Authority(NALSA) f) Legal Services Authority Act,1987 g) Legal Aid in context of social justice and Human Right

UNIT TEST 1 –

Syllabus covered in April and May

HALF YEARLY

Syllabus covered till September

FINAL – ENTIRE SYLLABUS

SUBJECT: ACCOUNTANCY

April & May-

1.Fundamentals of Partnership

2.Goodwill of the firm

3.Admission of Partner-New Ratio

July & August-

1.Admission (Cont.)

Revaluation Account

Partner's capital account

2.Retirement of Partner

3.Death of Partner

September & October

1.Dissolution of Partnership

2.Analysis of Financial statements

3.Comparitive Statement

November &December

1.Ratio Analysis

2.Cash Flow statement

3.Company Accounts-Shares & Debentures

SUBJECT: PHYSICAL EDUCATION

MONTH	BOOK	CHAPTERS
April	Physical Education	1) Management of Sporting Events
May	Physical Education	2) Children & Women in Sports

July	Physical Education	3) Yoga as Preventive Measure for lifestyle Disease
UNIT TEST-1 (JULY)	Physical Education	**CHAPTERS 1-2**
August	Physical Education	4) Physical Education & Sports for CWSN (Children with Special Needs- Divyang)
September	Physical Education	5) Sports & Nutrition
September	Physical Education	6) Test & Measurement in Sports
HALF YEARLY EXAMINATION (September-October}	Physical Education	**CHAPTERS 1-6**
October	Physical Education	7) Physiology & Injuries in Sports
November	Physical Education	8) Biomechanics & Sports
November	Physical Education	9) Psychology & Sports
December	Physical Education	10) Training in Sports
DECEMBER(1st PRE BOARD)	Physical Education	**FULL SYLLABUS**
January(2nd PRE BOARD)	Physical Education	**FULL SYLLABUS**

SUBLECT: BUSINESS STUDIES

April & May-
1.Nature & Significance of management
2.Principles of management

July & August-
1.Business Environment
2.Planning
3.Staffing
4.Organising
5.Directing

September & October
1.Controlling

2. Financial Management

November &December
1.Financial Market
2.Marketing management
3.Consumer Protection

SUBJECT: STANDARD MATHEMATICS

April	Matrices&Determinants
	Adjoint&InverseofaMatrix
	SolutionofSystemof LinearEquations
May	RelationsandFunctions
July	InverseTrigonometric Functions
	Continuity and Differentiability
	Differentiation
August	Application of Derivatives-Rate of Change of Quantities
	Increasing, DecreasingFunctions, Maxima and Minima
	Indefinite Integration
September	Definite Integration and its properties
October	Area Enclosed by Curves
	Differential Equations
November	VectorAlgebraexceptscalar triple product.
	Three-D Geometry

	LinearProgramming
December	Probability

IstUnitTest	Chapterscovered fromApril to May
Half YearlyExamination	Chapterscovered fromAprilto August
Pre-BoardExamination	Whole Syllabus

SUBJECT: APPLIED MATHEMATICS

April	Matrices & Determinants
	Inverse of a Matrix
	Solution of system of simultaneous equations
May	Numbers ,Quantification & Numerical Applications.
July	Calculus (Differentiation and its applications)
August	Maxima and Minima , Increasing/Decreasing Functions
	Indefinite Integration
September	Definite Integrals , Area under the curve
October	Application of Integration
	Differential Equations and its applications
November	Inferential Statistics
	Index Numbers and Time Based Data
	Probability Distribution
December	Financial Mathematics
	Linear Programming

Ist Unit Test	Chapters covered from April to May
Half Yearly Examination	Chapters covered from April to August
Pre-Board Examination	Whole Syllabus

SUBJECT: COMPUTER SCIENCE

MONTH	CHAPTER	TOPICS
APRIL	REVISION OF PYTHON BASICS	REVISION OF PYTHON TOPICS COVERED IN CLASS XI.
	TEXT FILE HANDLING	INTRODUCTION TO FILES, 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 WRITELINES(), READING FROM A TEXT FILE USING READ(), READLINE() AND READLINES(), SEEK AND TELL METHODS, MANIPULATION OF DATA IN A TEXT FILE
MAY	BINARY FILE HANDLING	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

JULY	EXCEPTION HANDLING	INTRODUCTION, HANDLING EXCEPTIONS USING TRY-EXCEPT-FINALLY BLOCKS
	CSV FILE HANDLING	IMPORT CSV MODULE, OPEN / CLOSE CSV FILE, WRITE INTO A CSV FILE USING WRITER(),WRITEROW(),WRITEROWS() AND READ FROM A CSV FILE USING READER()
AUGUST	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)
SEPTEMBER	DATA STRUCTURE	STACK, OPERATIONS ON STACK (PUSH & POP), IMPLEMENTATION OF STACK USING LIST.
	DATABASE CONCEPTS	INTRODUCTION TO DATABASE CONCEPTS AND ITS NEED
	RELATIONAL DATA MODEL	RELATION, ATTRIBUTE, TUPLE, DOMAIN, DEGREE, CARDINALITY, KEYS (CANDIDATE KEY, PRIMARY KEY, ALTERNATE KEY, FOREIGN KEY)

OCTOBER	STRUCTURED QUERY LANGUAGE – PART I	DATA DEFINITION LANGUAGE AND DATA MANIPULATION LANGUAGE, DATA TYPE (CHAR(N), VARCHAR(N), INT, FLOAT, DATE), CONSTRAINTS (NOT NULL, UNIQUE, PRIMARY KEY), CREATE DATABASE, USE DATABASE, SHOW DATABASES, DROP DATABASE, SHOW TABLES, CREATE TABLE, DESCRIBE TABLE, ALTER TABLE (ADD AND REMOVE AN ATTRIBUTE, ADD AND REMOVE PRIMARY KEY), DROP TABLE
NOVEMBER	STRUCTURED QUERY LANGUAGE – PART II	INSERT, DELETE, SELECT, OPERATORS (MATHEMATICAL, RELATIONAL AND LOGICAL), ALIASING, DISTINCT CLAUSE, WHERE CLAUSE, IN, BETWEEN, ORDER BY, MEANING OF NULL, IS NULL, IS NOT NULL, LIKE, UPDATE COMMAND, DELETE COMMAND, AGGREGATE FUNCTIONS (MAX, MIN, AVG, SUM, COUNT), GROUP BY, HAVING CLAUSE, JOINS: CARTESIAN PRODUCT ON TWO TABLES, EQUI-JOIN AND NATURAL JOIN
	INTERFACE OF PYTHON WITH AN SQL DATABASE.	CONNECTING SQL WITH PYTHON, PERFORMING INSERT, UPDATE, DELETE QUERIES USING CURSOR, DISPLAY DATA BY USING CONNECT(), CURSOR(), EXECUTE(), COMMIT(), FETCHONE(), FETCHALL(), ROWCOUNT, CREATING DATABASE CONNECTIVITY APPLICATIONS, USE OF %S FORMAT SPECIFIER OR FORMAT() TO PERFORM QUERIES
DECEMBER	EVOLUTION OF NETWORKING	INTRODUCTION TO COMPUTER NETWORKS, EVOLUTION OF NETWORKING (ARPANET, NSFNET, INTERNET)

	DATA COMMUNICATION TERMINOLOGIES	CONCEPT OF COMMUNICATION, COMPONENTS OF DATA COMMUNICATION (SENDER, RECEIVER, MESSAGE, COMMUNICATION MEDIA, PROTOCOLS), MEASURING CAPACITY OF COMMUNICATION MEDIA (BANDWIDTH, DATA TRANSFER RATE), IP ADDRESS, SWITCHING TECHNIQUES (CIRCUIT SWITCHING, PACKET SWITCHING)
	TRANSMISSION MEDIA	WIRED COMMUNICATION MEDIA (TWISTED PAIR CABLE, CO-AXIAL CABLE, FIBER-OPTIC CABLE), WIRELESS MEDIA (RADIO WAVES, MICRO WAVES, INFRARED WAVES)
	NETWORK DEVICES	MODEM, ETHERNET CARD, RJ45, REPEATER, HUB, SWITCH, ROUTER, GATEWAY, WIFI CARD
	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

	INTRODUCTION TO WEB SERVICES:	WWW, HYPER TEXT MARKUP LANGUAGE (HTML), EXTENSIBLE MARKUP LANGUAGE (XML), DOMAIN NAMES, URL, WEBSITE, WEB BROWSER, WEB SERVERS, WEB HOSTING
	FINAL PROJECT	
UNIT TEST – I	REVISION OF PYTHON BASICS, TEXT FILE HANDING	
HALF YEARLY EXAMINATION	REVISION OF PYTHON BASICS, TEXT FILE HANDING, BINARY FILE HANDLING, CSV FILE HANDLING, FUNCTIONS, DATA STRUCTURE	
PREBOARD EXAMINATION	WHOLE SYLLABUS	

SUBJECT: COMPUTER SCIENCE (PRACTICAL)

MONTH	CHAPTER
APRIL- SEPTEMBER	• REVISION OF PYTHON BASICS • TEXT FILE HANDLING • BINARY FILE HANDLING • CSV FILE HANDLING • FUNCTIONS • DATA STRUCTURES
OCTOBER - DECEMBER	• STRUCTURED QUERY LANGUAGE – PART I • STRUCTURED QUERY LANGUAGE – PART II • INTERFACE OF PYTHON WITH AN SQL DATABASE.

SUBJECT: COMPUTER SCIENCE(PRACTICAL)

MONTH	Topics	PRACTICAL
APRIL MAY JULY AUGUST SEPTEMBER	PYTHON PROGRAMMING	1. Read a text file line by line and display each word separated by a #. 2. Read a text file and display the number of vowels/consonants/uppercase/lowercase characters in the file. 3. Remove all the lines that contain the character 'a' in a file and write it to another file. 4. Create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message. 5. Create a binary file with roll number, name and marks. Input a roll number and update the marks. 6. Create a CSV file by entering user-id and password, read and search the password for given user-id. 7. Write a random number generator that generates random numbers between 1 and 6 (simulates a dice). 8. Write a Python program to implement a Stack using list.
OCTOBER	DATABASE MANAGEMENT	1. Create a student table and insert data. Implement the following SQL commands on the student table: • ALTER table to add new attributes / modify data type / drop attribute

NOVEMBER		• UPDATE table to modify data • ORDER BY to display data in ascending / descending order • DELETE to remove tuple(s) • GROUP BY and find the min, max, sum, count and average 2. Similar exercise for other cases. 3. Integrate SQL with Python by importing suitable module.
DECEMBER	FINAL PROJECT	

SUBJECT: PHYSICS

Month	Topics to be covered
April	Electrostatics (Introduction to force and field) Electrostatics **Chapter–1: Electric Charges and Fields**
May	**Chapter–2: Electrostatic Potential and Capacitance**
July	Chapter–2: Electrostatic Potential and Capacitance (continued) **Unit II: Current Electricity (Chapter 3)**
August	Unit II: Current Electricity (continued) **Unit III: Magnetic Effects of Current and Magnetism** **Chapter–4: Moving Charges and Magnetism** **Chapter–5: Magnetism and Matter** Unit IV: Electromagnetic Induction and Alternating Currents **Chapter–6: Electromagnetic Induction**

September	**Chapter–7: Alternating Current** **Chapter–8: Electromagnetic Waves** **Unit VI: Optics** **Chapter–9: Ray Optics and Optical Instruments**
October	Ray Optics (continued) and wave **optics Chapter–10: Wave Optics**
November	**Waves optics (Continued), Unit VII: Dual Nature of Radiation and MatterChapter–11: Dual Nature of Radiation and Matter** **Unit VIII: Atoms and Nuclei** **Chapter–12: Atoms** **Chapter–13: Nuclei** **Chapter–14: Semiconductor Electronics:**
December	**Chapter–14: Semiconductor Electronics: (continued)**

Unit Test - I	Unit–I Electrostatics Chapter–1: Electric Charges and Fields Chapter–2: Electrostatic Potential and Capacitance
Half Yearly	Unit–I Electrostatics Chapter–1: Electric Charges and Fields Chapter–2: Electrostatic Potential and Capacitance Unit-II Current Electricity Chapter–3: Current Electricity Unit-III Magnetic Effects of Current and Magnetism Chapter–4: Moving Charges and Magnetism Chapter–5: Magnetism and Matter Unit-IV Electromagnetic Induction and Alternating Currents Chapter–6: Electromagnetic Induction Chapter–7: Alternating Current
Pre – Board	Entire CBSE curriculum of Physics (2024-25)

Physics Practical -

Till – Half Yearly

Section – A **Section – B**

a. Sonometer: To find the frequency of AC mains with a sonometer

2. Half Deflection : To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.

3.Metre Bridge:To find resistance of a given wire / standard resistor using metre bridge.

4.Ohm's law: To determine resistivity of two / three wires by plotting a graph for potential difference versus current.

Till Pre Broad

1. Glass Prism: To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.

2. Convex Lens (u-v method): To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v.

3. Refractive Index of Unknown Liquid : To find the refractive index of a liquid using a concave mirror and a plane mirror.

4 Combination of Convex Mirror with Convex Lens: To find the focal length of a convex mirror, using a convex lens.

PSYCHOLOGY

MONTH		
April	**Chapter -1** Variations in Psychological Attributes: Intelligence	**Practical-1** Intelligence: Progressive Matrices
May	**Chapter - 2** Self and Personality	Introduction to the Case Study
July	**Chapter - 3** Meeting Life Challenges	**Practical- 2**
August	**Chapter- 4** Psychological Disorders	Case – Study
UNIT TEST-1		**CHAPTERS 1-2**
September	**Chapter- 5** **Therapeutic Approaches**	**Practical -3**
Half Yearly Exam	**-**	**Chapter- 1-4**
October	**Chapter-6** Attitude and Social Cognition	**Practical- 4**
November	**Chapter- 7** Social Influence and Group Processes	**Practical- 5** Case Study
December	**Full Syllabus**	**Pre-Board - 1**
January	Full Syllabus	Pre -Board -2

		INFORMATICS PRACTICES
MONTH	**CHAPTER**	**TOPICS**
APRIL MAY	**Unit 1:** Data Handling using Pandas -I	Introduction to Python libraries- Pandas, Matplotlib. Data structures in Pandas - Series and Data Frames. Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing. Data Frames: creation - from dictionary of Series, list of dictionaries, Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing; Importing/Exporting Data between CSV files and Data Frames
JULY	**Unit 1:** Data Visualization	Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram Customizing plots: adding label, title, and legend in plots.
AUGUST	**Unit 2:** Database Query using SQL	Math functions: POWER (), ROUND (), MOD (). Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM (). Date Functions: NOW(), DATE(), MONTH(), MONTHNAME (), YEAR(), DAY(), DAYNAME (). Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*). Querying and manipulating data using Group by, Having,Order by. Working with two tables using equi-join
SEPTEMBER OCTOBER	**Unit 3:** Introduction to Computer Networks	Introduction to networks, Types of network: LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway Network Topologies: Star, Bus, Tree, Mesh. Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP. Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.

NOVEMBER	**Unit 4:** Societal Impacts	Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. Awareness about health concerns related to the usage of technology.

DECEMBER	PROJECT WORK.
UNIT TEST – I	Data Handling using Pandas -I
HALF YEARLY EXAMINATION	Data Handling using Pandas -I , Data Visualization
PRE-BOARD-I	Data Handling using Pandas –I, Data Visualization, Database Query using SQL, Introduction to Computer Networks, Societal Impacts
PRE-BOARD-II	Data Handling using Pandas –I, Data Visualization, Database Query using SQL, Introduction to Computer Networks, Societal Impacts

MONTH	UNIT	CHAPTER
APRIL - SEPTEMBER	UNIT-1, UNIT-2	Data Handling using Pandas -I Data Visualization Database Query using SQL
OCTOBER-DECEMBER	UNIT -2, UNIT-3 & UNIT-4	Introduction to Computer Networks Societal Impacts

LIST OF PRACTICALS

APRIL-SEPTEMBER	**(A) Data Handling:** 1) Create a panda's series from a dictionary of values and a ndarray 2) Given a Series, print all the elements that are above the 75th percentile. 3) Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category. 4) Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions 5) Filter out rows based on different criteria such as duplicate rows. 6) Importing and exporting data between pandas and CSV file
	(B) Visualization: 1) Given the school result data, analyses the performance of the students on different parameters, eg. subject wise or class wise. 2) For the Data frames created above, analyze, and plot appropriate charts with title and legend. 3) Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.
OCTOBER-NOVEMBER	**(C) Data Management :** 1) Create a student table with the student id, name, and marks as attributes where the student id is the primary key. 2) Insert the details of a new student in the above table. 3) Delete the details of a student in the above table. 4) Use the select command to get the details of the students with marks more than 80. 5) Find the min, max, sum, and average of the marks in a student marks table. 6) Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by. 7) Write a SQL query to order the (student ID, marks) table in descending order of the marks.