

BHARATIYA VIDYA BHAVAN, KOCHI KENDRA
YEAR PLAN MATHEMATICS(041) CLASS XII 2024-2025

MONTH	TOPIC	SUB-TOPICS	CONCEPTS
MARCH	3.MATRICES	Introduction Matrix Types of matrices Operations on matrices Transpose of a matrix symmetric and skew symmetric matrices. Invertible matrices	Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non- commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restricted to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).
APRIL	4.DETERMINANTS	Introduction Determinant Area of a Triangle Minors and Cofactors Adjoint and Inverse of a Matrix Applications of Determinants and Matrices	Determinant of a square matrix (up to 3 x 3 matrices),, minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of systems of linear equations by examples, solving systems of linear equations in two or three variables (having unique solution) using inverse of a matrix.
JUNE	1.RELATIONS AND FUNCTIONS (Not for first Unit Test)	Introduction Types of Relations Types of Functions	Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.

FIRST UNIT TEST(10/06/24 - 15/06/24)			
JUNE	2 .INVERSE TRIGONOMETRIC FUNCTIONS	Introduction Basic Concepts	Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions
JUNE	12.LINEAR PROGRAMMING	Introduction Linear Programming Problem	Introduction, related terminology such as constraints, objective function, optimization, . Graphical method of solution for problems in two variables, feasible and infeasible regions (bounded OR unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).
JULY	5.CONTINUITY & DIFFERENTIABILITY	Introduction Continuity Differentiability Exponential and Logarithmic Functions Logarithmic Differentiation Derivatives of Functions in Parametric Forms Second Order Derivative	Continuity and differentiability, chain rule, derivative of inverse trigonometric functions like $\sin^{-1} x$, $\cos^{-1} x$, $\tan^{-1} x$, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.
JULY	6 .APPLICATION OF DERIVATIVES (Not for the second Unit Test)	Introduction Rate of Change of Quantities Increasing and Decreasing Functions Maxima and Minima	Rate of change of quantities, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real life situations).
SECOND UNIT TEST(Chapters 1,2,5,12)(31/07/24 - 07/08/24)			

AUGUST	7.INTEGRALS (Definite integrals not included for term end exam)	<p>Introduction Integration as an Inverse Process of Differentiation Methods of Integration</p> <p>Integrals of Some Particular Functions Integration by Partial Fractions Integration by Parts Definite Integral Fundamental Theorem of Calculus Evaluation of Definite Integrals by Substitution Some Properties of Definite Integrals</p>	<p>Integration as an inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.</p> $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}$ $\int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}, \int \frac{px + q}{ax^2 + bx + c}, \int \frac{px + q}{\sqrt{ax^2 + bx + c}}$ $\int \sqrt{a^2 \pm x^2} dx, \int \sqrt{x^2 - a^2}, \int \sqrt{ax^2 + bx + c}$ <p>Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.</p>
SEPTEMBER	8.APPLICATION OF INTEGRATION(Not for the Term end evaluation)	<p>Introduction Area under Simple Curves</p>	<p>Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses; (in standard form only)</p>
SEPTEMBER	9.DIFFERENTIAL EQUATIONS (Not for the Term end evaluation)	<p>Introduction Basic Concepts General and Particular Solutions of a Differential Equation Methods of Solving First Order, First Degree Differential Equations</p>	<p>Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree .</p>

			Solutions of linear differential equation of $dY/dx + P y = Q$, where P and Q are functions of x or constants . $dx/dy + Px = Q$ where P and Q are functions of y or constants
TERM END EVALUATION[Chapters 1,2,3,4,5,6,12,7(sections 7.1,7.2,7.3,7.4,7.5,7.6)](18/10/24 - 30/10/24)			
OCTOBER	10.VECTOR ALGEBRA	Introduction Some Basic Concepts Types of Vectors Addition of Vectors Multiplication of a Vector by a Scalar Product of Two Vectors	Vectors and scalars, magnitude and direction of a vector ,direction cosines and direction ratios of a vector ,types of vectors,(equal, unit, zero ,parallel and collinear vectors)position vector of a point ,negative of a vector ,components of a vector ,addition of vectors ,multiplication of vectors by a scalar ,position vector of a point dividing a line segment in a given ratio ,definition ,geometrical interpretation ,properties and application of scalar product of vectors ,vector product of vectors.
OCTOBER	11.THREE-DIMENSIONAL GEOMETRY	Introduction Direction Cosines and Direction Ratios of a Line Equation of a Line in Space Angle between Two Lines Shortest Distance between Two Lines	Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between 2 lines.
NOVEMBER	13.PROBABILITY	Introduction Conditional Probability Multiplication Theorem on Probability Independent Events Bayes' Theorem	Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, Mean of the random variable.
DECEMBER	FIRST MODEL EXAMINATION(02/12/24 -13/12/24)		

YEAR PLAN FOR THE ACADEMIC YEAR 2024-25			
ENGLISH CORE STD XII			
MONTH	TOPIC/SUBTOPIC		WRITING
	FLAMINGO	VISTAS	
MARCH/ APRIL	1. THE LAST LESSON 2. LOST SPRING P1. MY MOTHER AT SIXTY SIX	1. THE THIRD LEVEL 2. THE TIGER KING (NOT TO BE INCLUDED FOR UT 1)	
JUNE (21 DAYS)	P2. KEEPING QUIET (NOT TO BE INCLUDED FOR UT1) 3. DEEP WATER (NOT TO BE INCLUDED FOR UT1)	3. JOURNEY TO THE END OF THE EARTH (NOT TO BE INCLUDED FOR UT 1)	1. NOTICE
UNIT TEST 1 (JUNE 10 -15)			
JULY (24 DAYS)	4. THE RATTRAP (NOT TO BE INCLUDED FOR UT 2) P3. A THING OF BEAUTY (NOT TO BE INCLUDED FOR UT 2)		2. LETTER TO THE EDITOR
UNIT TEST 2 (JULY 31 - AUG 7)			
AUGUST (20 DAYS)	P4. A ROADSIDE STAND P5. AUNT JENNIFER'S TIGERS	4. THE ENEMY	3. REPORT WRITING (NEWSPAPER AND MAGAZINE)
SEPTEMBER (16 DAYS)	5. INDIGO 6. POETS AND PANCAKES (NOT TO BE INCLUDED FOR TERM END 1)		4. INVITATION - FORMAL & INFORMAL REPLY TO INVITATION

OCTOBER (22 DAYS)	7. THE INTERVIEW (NOT TO BE INCLUDED FOR TERM END 1)	5.ON THE FACE OF IT (NOT TO BE INCLUDED FOR TERM END 1)	5. ARTICLE 6. JOB APPLICATION LETTER
TERM END EVALUATION 1 (OCT 18 - 30)			
NOVEMBER (24 DAYS)	8. GOING PLACES	6. MEMORIES OF CHILDHOOD	
FIRST MODEL EXAMINATION (2 DEC -13 DEC) SECOND MODEL EXAMINATION (3 JAN -15 JAN) BOARD ASL – 20 MARKS (TO BE DONE AS STIPULATED BY THE CBSE)			

**BHARATIYA VIDYA BHAVAN, KOCHI KENDRA
INFORMATICS PRACTICES(065)
YEAR PLAN FOR THE ACADEMIC YEAR 2024-25**

CLASS: XII

MONTH	TOPIC	SUB-TOPICS	CONCEPTS
APRIL	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 on series – addition, subtraction, multiplication, division ,Head and Tail functions Selection, Indexing and Slicing Attributes of Series – name, index.name, values, size, emptyDataFrames: creation - from dictionary of Series, list of dictionaries, displaying dataframe Attributes of DataFrames – index, columns, dtypes, values, shape, size, T, ndim, head(), tail()	Data analysis using Python libraries,Concepts of data structures,Series creation and its operations. Creation of 2D data sructure: Dataframe and its attributes
JUNE	Unit 1: Data Handling using Pandas –I	Data Frames: Operations on rows and columns: add, select, delete, rename; Head and Tail functions;	Operations on dataframes and built in functions, concept of importing and exporting data using csv
UNIT TEST I -10/06/2024 TO 15/06/2024			
JULY	Unit 1: Data Handling using Pandas –I	Data Frames: creation - from Text/CSV files; Indexing using Labels, Boolean Indexing; Importing/Exporting Data between CSV files and Data Frames. iteration; Data Frame Creation using Text/CSV files	Dataframes indexing ,concept of importing and exporting data using csv
UNIT TEST II -31/07/2024 TO 07/08/2024			

AUGUST	Unit 1: Data Visualization Unit 4: Societal Impacts	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. Societal Impacts Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright	Visualizing data using matplotlib library,Societal Impacts-Digital footprint,IPR
SEPTEMBER	Unit 4: Societal Impacts Unit 2: Database Query using SQL	Societal Impacts Free and Open Source Software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. Awareness about health concerns related to the usage of technology Database Query using SQL Revision of database concepts and SQL commands covered in class XI Math functions: POWER (), ROUND (), MOD (). Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME ().	Societal Impacts- cybercrime and cyber laws, E-waste: hazards and management. Data Base Concepts and SQL single row functions
OCTOBER	Unit 2: Database Query using SQL	Text functions: UCASE ()/ UPPER (), LCASE ()/ LOWER (), MID ()/ SUBSTRING () /SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM 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	Data Base Concepts and SQL Aggregate functions
TERM END EVALUATION -18/10/2024 TO 30/10/2024			

<p>NOVEMBER</p>	<p>Unit 3: Introduction to Computer Networks</p>	<p>Introduction to networks, Types of network: PAN, LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway Network Topologies: Star, Bus, Tree, Mesh. Introduction to Internet, URL, W W W, 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.</p>	<p>Network and types of Network, Network Devices, Network Topology, Internet and web fundamentals</p>
<p>DECEMBER</p>	<p>FIRST MODEL EXAMINATION -02/12/2024 TO 13/12/2024</p>		
<p>JANUARY</p>	<p>SECOND MODEL EXAMINATION -03/01/2025 TO 15/01/2025</p>		

BHARATIYA VIDYA BHAVAN, KOCHI KENDRA
ARTIFICIAL INTELLIGENCE
YEAR PLAN FOR THE ACADEMIC YEAR 2024-2025

CLASS: XII

MONTH	TOPIC	SUB-TOPICS	CONCEPTS
MARCH/ APRIL	<p>PART A: Unit 2: Self-management Skills</p> <p>PART A: Unit 3: Information and Communication Technology Skills</p>	<p>PART A: Unit 2: Self-management Skills</p> <ul style="list-style-type: none"> • Session 1 Motivation and Positive Attitude • Session 2 Result Orientation • Session 3 Self-awareness <p>PART A: Unit 3: Information and Communication Technology Skills</p> <p>Session 1 Getting Started with Spreadsheet</p> <p>Session 2 Performing Basic Operations in a Spreadsheet</p> <p>Session 3 Working with Data and Formatting Text</p> <p>Session 4 Advanced Features in Spreadsheet</p> <p>Session 5 Presentation Software</p> <p>Session 6 Opening, Closing, Saving and Printing a Presentation</p> <p>Session 7 Working with Slides and Text in a Presentation</p> <p>Session 8 Advanced Features used in Presentation</p>	<p>PART A: Unit 2: Self-management Skills</p> <ul style="list-style-type: none"> • sources of motivation and inspiration • personality <p>PART A: Unit 3: Information and Communication Technology Skills</p> <p>spreadsheet application</p> <p>presentation application</p>

<p>JUNE</p>	<p>PART A:Unit 1 : Communication Skills-IV</p> <p>PART B: Unit 1: Capstone Project</p>	<p>Unit 1 : Communication Skills-IV:</p> <ul style="list-style-type: none"> • Session 1 Active Listening • Session 2 Parts of Speech • Session 3 Writing Sentences <p>Unit 1: Capstone Project</p> <ul style="list-style-type: none"> • Understanding the problem • Decomposing the problem through DT framework • Analytic Approach • Data Requirements • Data Collection • Modelling approach 	<p>Unit 1 : Communication Skills-III:</p> <ul style="list-style-type: none"> • Importance of active listening • Steps to active listening <p>Unit 1: Capstone Project: AI Project Cycle</p>
<p>Unit Test I Starts: 10/06/2024</p>			
<p>JULY</p>	<p>PART B: Unit 1:Capstone Project</p>	<p>Unit 1: Capstone Project</p> <ul style="list-style-type: none"> • How to validate model quality • Metrics of model quality by simple Maths and examples from small datasets • Introduction to commonly used algorithms and the science behind them • Showcase through a compelling story 	<p>Unit 1: Capstone Project:</p> <ul style="list-style-type: none"> • Model validation , RMSE , MSE , MAPE
	<p>PART A: Unit 4: Entrepreneurial Skills</p>	<p>PART A: Unit 4: Entrepreneurship Skills</p> <p>Session 1 Entrepreneurship and Entrepreneur</p> <p>Session 2 Barriers to Entrepreneurship</p> <p>Session 3 Entrepreneurial Attitudes</p> <p>Session 4 Entrepreneurial Competencies</p>	<p>PART A: Unit 4: Entrepreneurship Skills</p> <p>Behavioral and entrepreneurial competencies</p>

Unit Test II Starts: 31 /07/2024

AUGUST	PART B: Unit 2: Model Life Cycle	<p>PART B: Unit 2: Model Life Cycle</p> <ul style="list-style-type: none">• Different aspects of Model (Train, test, validate, hyper parameters, Commonly used platforms to build and runmodels)• Lifecycle of an AI model (Build, Deploy, Retrain)	<p>PART B: Unit 2: Model Life Cycle</p> <p>AI Project Cycle, Model validation, AI deployment, IBM Watson</p>
SEPTEMBER	PART A: Unit 5: Green Skills	<p>PART A: Unit 5: Green Skills</p> <p>Session 1 Green Jobs</p> <p>Session 2 Importance of Green Jobs</p>	<p>PART A: Unit 5: Green Skills</p> <p>Role of green jobs</p>
OCTOBER	PART B: Unit 3: Story- telling through data	<p>PART B: Unit 3: Story- telling through data</p> <ul style="list-style-type: none">• The Need for Storytelling• How to create stories?• Ethics of storytelling	<p>PART B: Unit 3: Story- telling through data</p> <ul style="list-style-type: none">• story telling

End Term Evaluation Starts: 18/10/2024

NOVEMBER	PART B: Unit 3: Story- telling through data	PART B: Unit 3: Story- telling through data <ul style="list-style-type: none"> • Types of Data and Suitable Charts • Stories During the Steps of Predictive Modeling • Best Practices of Storytelling 	PART B: Unit 3: Story- telling through data <ul style="list-style-type: none"> • power of data story telling
DECEMBER	First Model Examination Starts: 02/12/2024		
JANUARY	Second Model Examination starts: 03/01/2025		
FEBRUARY			
MARCH			

BHARATIYA VIDYA BHAVAN, KOCHI KENDRA
COMPUTER SCIENCE
YEAR PLAN FOR THE ACADEMIC YEAR 2024-25

CLASS: XII

MONTH	TOPIC	SUB-TOPICS	CONCEPTS
MARCH/ APRIL	Computational Thinking and Programming-2 Database Management	Revision of python topics in class XI Functions Database concepts Relational data model	Basic concepts of Python programming Creating reusable and modular code, promoting good programming practices such as code reusability, readability, and maintainability. Concepts of RDBMS.
UNIT TEST 1(10/6/2024)TOPICS :REVISION STD XI,FUNCTIONS,DATABASE CONCEPTS,RELATIONAL DATA MODEL			
JUNE	Database Management	Structured Query Language	The use of RDBMS to store, organize, and retrieve large amounts of data efficiently. Understand and use MySQL commands to store and manage data. Grouping and filtering of records to get cumulative data. Extracting data from multiple tables.
JULY	Computational Thinking and Programming-2 Database Management	Interface of Python with an SQL Database,Exception Handling	Client Server architecture -to transfer and manage data between a front end and back end. Handle errors raised by programs using try, except and finally.
UNIT TEST 2(31/7/2024)TOPICS :SQL,CONNECTIVITY,EXCEPTION HANDLING			
AUGUST	Computational Thinking and Programming-2	Introduction to Files,Text Files	Files as a medium for permanent storage. Types of Files and paths.Text File Handling

1

SEPTEMBER	Computational Thinking and Programming-2	Binary Files,CSV Files	Binary and CSV file Handling
TERM END EVALUATION (18/10/2024) TOPICS:REVISION STD XI,FUNCTIONS,DATABASE CONCEPTS,RELATIONAL DATA MODEL,SQL,CONNECTIVITY,EXCEPTION HANDLING,TEXT FILE,BINARY FILE,CSV FILE			
OCTOBER	Computer Networks	Data Structure,Evolution of Networking,Data communication terminologies,Transmission Media,Network Devices,Network Types,Network Protocol	Understand the concept of Stack. Various types of transmission media used in different types of networks, including wired ,wireless networks,network types,topologies,network protocol and network devices.
NOVEMBER	Computer Networks	Introduction to Web Services	Introduction to web services.
FIRST MODEL:2/12/2024 TO 13/12/2024			
SECOND MODEL:3/1/2025 TO 15/1/2025			

BHARATIYA VIDYA BHAVAN, KOCHI
YEAR PLAN FOR THE ACADEMIC YEAR 2024-'25
CLASS XII CHEMISTRY

MONTH	TOPIC	SUB-TOPIC	CONCEPTS
MARCH/APRIL	1. SOLUTIONS 6. HALOALKANES AND HALOARENES	SOLUTIONS - Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties - relative lowering of vapour pressure, Raoult's law, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor. Haloalkanes and halo arenes - Nomenclature, nature of C-X bond, physical properties.	SOLUTIONS - Concentration terms and units, Henry's and Raoult's law, Ideal and non-ideal solution, colligative properties, osmosis and reverse osmosis, abnormal molar mass and van't Hoff's factor. Haloalkanes and halo arenes - IUPAC nomenclature, preparation, properties, reaction mechanisms of haloalkanes and haloarenes
JUNE	6. HALOALKANES AND HALOARENES 7. ALCOHOLS, PHENOLS AND ETHERS	Haloalkanes and halo arenes :Chemical properties, mechanism of substitution reactions, optical rotation. Nature of C-X bond, substitution reactions (Directive influence of halogen in mono substituted compounds only). Uses and environmental effects of dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT. Alcohols, Phenols and ethers : Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol. Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses	Haloalkanes and halo arenes -Application of haloalkanes and haloarenes Alcohols, Phenols and Ethers - IUPAC nomenclature, preparation, properties, reaction mechanisms of Alcohols, phenols and Ethers
FIRST UNIT - TEST (10/6/2024-15/6/2024) PORTIONS - SOLUTIONS HALOALKANES AND HALOARENES- Including physical properties			
JULY	8. ALDEHYDES, KETONES AND CARBOXYLIC ACIDS	Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes: uses. Carboxylic acid-Nomenclature, acidic nature, methods of preparation, physical and chemical properties: uses	IUPAC nomenclature of aldehydes, ketones and carboxylic acids, structure of carboxyl groups, preparation of aldehydes and ketones, physical and chemical characteristics of aldehydes and ketones, preparation of carboxylic acids, physical and chemical characteristics of carboxylic acids. Application of aldehydes, ketones and acids.
SECOND UNIT - TEST (31/07/2024 - 7/8/2024) PORTIONS-6. HALOALKANES & HALOARENES - from chemical properties. 7. ALCOHOLS, PHENOLS AND ETHERS 8. ALDEHYDES, KETONES AND CARBOXYLIC ACIDS - upto physical properties (physical properties not included)			

AUGUST	2. ELECTROCHEMISTRY	Redox reactions, 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, 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, fuel cells, corrosion.	Electrochemical cell, Nernst equation, Electrolytic conductivity and molar conductivity, Kohlrausch's law, electrolysis, fuel cells and batteries, corrosion
SEPTEMBER	3. CHEMICAL KINETICS 10. BIOMOLECULES	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. BIOMOLECULES : Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. Proteins – Elementary idea of – amino acids, peptide bond, polypeptides, proteins, structure of proteins- primary, secondary, tertiary, quaternary structures (qualitative idea only), denaturation of proteins, enzymes. Hormones- Elementary idea excluding structure. Vitamins- Classification and functions. Nucleic acids – DNA and RNA	Chemical kinetics - types of chemical reactions, average rate of reaction, rate equation, order of reaction, rate constant, rate of reaction, rate equation for different orders of reaction, rate constant and order of reaction, collision theory. Biomolecules - Carbohydrates- classification, fructose and glucose, sources of protein, types of protein, denaturation of protein, enzymes, vitamins, structure and chemical composition of nucleic acids, role of biomolecules.
OCTOBER	4. d and f BLOCK ELEMENTS 5. COORDINATION COMPOUNDS	"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 $KMnO_4$. Co-ordination compounds : Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT	"d" and "f" Block Elements : Position of transition elements, electronic configuration, physical and chemical characteristics of transition elements, variable oxidation number, electrode potential, oxidation states, magnetic properties, complex compounds, preparation of metal oxides, properties of f-block elements Co-ordination compounds : Werner's theory, coordination entity, coordination number, polyhedron, oxidation number of central atom, homoleptic and heteroleptic complexes, IUPAC nomenclature, isomerism, valence bond theory, magnetic properties of complexes.
TERM END EXAMINATION (18/10/24 - 30/10/24)			
PORTIONS - SOLUTIONS, HALOALKANES AND HALOARENES, ALCOHOLS, PHENOLS AND ETHERS, ALDEHYDES, KETONES AND CARBOXYLIC ACIDS, ELECTROCHEMISTRY, CHEMICAL KINETICS			
NOVEMBER	5. COORDINATION COMPOUNDS 9. AMINES	Coordination compounds : CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative inclusion, extraction of metals and biological system). 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	Coordination compounds : Crystal field theory, synergic bond, applications of complex compounds. Amines : Structure of amines, classification, IUPAC nomenclature, preparation, physical and chemical properties, diazotisation, preparation of diazonium salts, importance of diazonium salts

BHARATIYA VIDYA BHAVAN, KOCHI

YEAR PLAN FOR THE ACADEMIC YEAR 2024- 2025

Std. XII - PHYSICS

MONTH	TOPIC	SUB-TOPICS	CONCEPTS
APRIL	Chapter-1: Electric Charges and Fields	Electric charges, Electric Field, Electric Flux, Gauss's law	Electric charges, Conservation of charge, Coulomb's law-force between two- point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).
JUNE	Chapter-2: Electrostatic Potential and Capacitance Chapter-3: Current Electricity	Electric potential & potential energy, equipotential surfaces, Conductors and insulators, Dielectrics and electric polarization Capacitors and capacitance Electric current, drift velocity, Ohm's law, temperature dependence of resistance, Internal resistance and emf of a cell, Kirchoff's rules, Wheatstone bridge.	Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two-point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor (no derivation, formulae only). Electric current, flow of electric charges velocity, mobility and their relation with electric current; Ohm's law, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance, Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchoff's rules, Wheatstone bridge.

FIRST UNIT TEST

**Electric Charges and Fields ,
Electrostatic Potential and Capacitance (including potential due to a dipole)**

JULY	<p>Chapter-4: Moving Charges and Magnetism(continues)</p> <p>Chapter-5: Magnetism and Matter</p>	<p>Biot - Savart law and its applications, Ampere's law and its applications, force on a moving charge in uniform magnetic and electric fields.</p> <p>Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors, torque experienced by a current loop in uniform magnetic field, moving coil galvanometer</p> <p>Bar magnet, magnetic field intensity due to a magnetic dipole (bar magnet), torque on a magnetic dipole.</p> <p>Magnetic properties of materials, Magnetization of materials, effect of temperature on magnetic properties.</p>	<p>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.</p> <p>Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines.</p> <p>Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.</p>
<p>SECOND UNIT TEST Electrostatic Potential and Capacitance (from equipotential surface) -,Current Electricity , Moving Charges and Magnetism (including Ampere circuital law and its applications.)</p>			
AUGUST	<p>Chapter-6: Electromagnetic Induction</p> <p>Chapter-7: Alternating Current</p>	<p>Electromagnetic induction; Lenz's Law, Self and mutual induction.</p> <p>Alternating currents, LCR series circuit (phasors only), AC generator, Transformer.</p>	<p>Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.</p> <p>Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit (phasors only), resonance, power in AC circuits, power factor, wattless current. AC generator, Transformer.</p>

SEPTEMBER	<p>Chapter–8: Electromagnetic Waves Chapter–9: Ray Optics and Optical Instruments Chapter–10: Wave Optics</p>	<p>Basic idea of displacement current, Electromagnetic waves, Electromagnetic spectrum</p> <p>Reflection of light, spherical mirrors, refraction of light, refraction at spherical surfaces, lenses, , lens maker’s formula, refraction of light through a prism.</p> <p>Optical instruments</p> <p>Wave front and Huygen’s principle, Interference, diffraction due to a single slit.</p>	<p>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.</p> <p>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.</p> <p>Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.</p> <p>Wave front and Huygen’s principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen’s principle. Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only).</p>
OCTOBER	<p>Chapter–11: Dual Nature of Radiation and Matter Chapter–12: Atoms Chapter–13: Nuclei</p>	<p>Dual nature of radiation, Photoelectric effect, Einstein's photoelectric equation, de-Broglie relation.</p> <p>Alpha-particle scattering experiment; Bohr model of hydrogen atom.</p> <p>Composition and size of nucleus, nuclear force, mass defect & binding energy per nucleon , nuclear fission, nuclear fusion</p>	<p>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.</p> <p>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).</p> <p>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.</p>
<p>TERM END EVALUATION Electric Charges and Fields & Electrostatic potential and capacitance , Current Electricity , Moving Charges and Magnetism & Magnetism and Matter ,EMI & AC , EM Waves, Ray Optics (upto Optical instruments)</p>			

NOVEMBER	Chapter-14: Semiconductor Electronics: Materials, Devices and Simple Circuits	Energy bands in conductors, Intrinsic and extrinsic semiconductors- , p-n junction, application of junction diode.	Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier.
DECEMBER	FIRST MODEL EXAM (ALL CHAPTERS)		
JANUARY	SECOND MODEL EXAMINATION (ALL CHAPTERS)		

BHARATIYA VIDYA BHAVAN, KOCHI KENDRA**STD XII – BOTANY – YEAR PLAN(2024-25)****2024-2025**

MONTH	TOPIC	SUB TOPICS
MARCH/ APRIL	4.Principles of Inheritance and variation	4.1 Mendel's Laws of Inheritance 4.2 Inheritance of One Gene 4.3 Inheritance of Two Genes 4.4 Sex Determination
JUNE	4.Principles of Inheritance and variation (Contd.)	4.5 Mutation 4.6 Genetic Disorders
FIRST UNIT TEST [JUNE 10th TO 15 th] CHAPTER 4: Principles of Inheritance and variation -Upto 4.6.2 (included)		
JUNE/JULY	5.Molecular basis of inheritance	5.1 The DNA 5.2 The Search for Genetic Material 5.3 RNA World 5.4 Replication 5.5 Transcription 5.6 Genetic Code 5.7 Translation 5.8 Regulation of Gene Expression
AUGUST	5.Molecular basis of inheritance(Contd.)	5.9 Human Genome Project,Rice Genome Proect 5.10 DNA Fingerprinting

SECOND UNIT TEST [JULY 31st TO AUGUST 7th]**CHAPTERS 4 and 5****4. Principles of Inheritance and variation-4.7 to 4.8.3****5. Molecular basis of Inheritance -5.1 to 5.3 (Included)**

SEPTEMBER	1-Sexual Reproduction in Flowering Plants	1.1 Flower – A Fascinating Organ of Angiosperms 1.2 Pre-fertilisation : Structures and Events 1.3 Double Fertilisation 1.4 Post-fertilisation: Structures and Events 1.5 Apomixis and Polyembryony
OCTOBER	9-Biotechnology Principles and Processes	9.1 Principles of Biotechnology 9.2 Tools of Recombinant DNA Technology 9.3 Processes of Recombinant DNA Technology
OCTOBER	10-Biotechnology and its Applications	10.1 Biotechnological Applications in Agriculture 10.2 Biotechnological Applications in Medicine
TERM END EVALUATION [OCTOBER 18th TO OCTOBER 30th] CHAPTERS 1, 4, 5 and 9 1-Sexual Reproduction in Flowering Plants 4.Principles of Inheritance and variation 5.Molecular basis of inheritance 9-Biotechnology Principles and Processes (9.1 TO 9.2.2) - 9.2.2 onwards NOT included		
NOVEMBER	10-Biotechnology and its Applications (Contd.)	10.3 Transgenic Animals 10.4 Ethical Issues
FIRST MODEL EXAMINATION [DECEMBER 2nd TO DECEMBER 13th] CHAPTERS 1,4,5,9 and 10		
SECOND MODEL EXAMINATION [JANUARY 3rd TO 15 th] CHAPTERS 1,4,5,9 and 10		

BHARATIYA VIDYA BHAVAN, KOCHI KENDRA			
STD XII – ZOOLOGY – YEAR PLAN			
2024-2025			
MONTH	TOPIC	SUB TOPICS	CONCEPTS
MARCH - APRIL	CHAPTER 2 HUMAN REPRODUCTION	2.1 Male reproductive system 2.2 Female reproductive system 2.3 Gametogenesis	Structure and functions of male reproductive organs Structure and functions of female reproductive organs Spermatogenesis and oogenesis,
JUNE	HUMAN REPRODUCTION contd..	2.4 Menstrual cycle 2.5 Fertilization and implantation 2.6 Pregnancy and embryonic development 2.7 Parturition and lactation	Hormonal control, structure of sperm , structure of ovary Various events during menstrual cycle, hormonal control, menstrual hygiene Structure of ovum , sex determination, cleavage Formation of placenta , placental hormones , milestones of embryonic development Foetal ejection reflex , significance of colostrum
FIRST UNIT TEST (JUNE 10-15) CHAPTER 2. HUMAN REPRODUCTION 2.1 TO 2.5 (EXCLUDING 2.5 FERTILIZATION AND IMPLANTATION)			
JUNE	CHAPTER 3 REPRODUCTIVE HEALTH	3.1 Reproductive health - problems and strategies 3.2 Population explosion and birth control 3.3 Medical termination of pregnancy 3.4 Sexually transmitted diseases 3.5 Infertility	Need for reproductive health IMR, MMR, contraceptive methods Why MTP is legalised? Types of STDs, symptoms and preventive measures ART - IVF, ZIFT, GIFT

JULY	CHAPTER 6 EVOLUTION	6.1 Origin of life 6.2 Evolution Of life forms - a theory 6.3 What are the evidences of evolution ? 6.4 What is adaptive radiation ? 6.5 Biological evolution 6.6 Mechanism of evolution 6.7 Hardy-weinberg 6.8 A brief account of evolution principle 6.9 Origin and evolution of man	Big bang theory, formation of universe Different theories on origin of life Paleontology, comparative anatomy, embryology, molecular evidences Darwin's finches , placental mammals and marsupials of australia Branching descent and natural selection Hugo de Vries theory and Darwin's theory on evolution Hardy Weinberg equilibrium, founder effect, opertional techniques of natural selection Evolution of plants and animals through geological periods Different evolutionary stages of man
SECOND UNIT TEST (JULY 31 - AUGUST 7) CHAPTER 2 HUMAN REPRODUCTION (FROM 2.5 TILL THE END OF THE CHAPTER) AND CHAPTER 3 REPRODUCTIVE HEALTH			

AUGUST	CHAPTER 7 HUMAN HEALTH AND DISEASE	7.1 Common Diseases in Humans 7.2 Immunity 7.3 AIDS 7.4 Cancer 7.5 Drugs and Alcohol Abuse	Source, symptoms, target site and mode of transmission of common diseases in humans Innate and acquired, active and passive, vaccination, allergies, auto immunity and immune system Replication of retro virus, its transmission and prevention Types, causes, detection, diagnosis and treatment Classification of drugs, their source, target site and effect on our body Adolescence and drug abuse, addiction and dependence, effects of drug, alcohol abuse, prevention and control
AUGUST	CHAPTER 8 MICROBES IN HUMAN WELFARE	8.1 Microbes in Household Products 8.2 Microbes in Industrial Products 8.3 Microbes in Sewage Treatment 8.4 Microbes in Production of Biogas 8.5 Microbes as Biocontrol Agents 8.6 Microbes as Biofertilisers	Microbes in food processing Fermented beverages, antibiotics, bioactive molecules Primary and secondary treatment of sewage Study of biogas plant and biogas production Biological control of pests and diseases Organic farming , role of mycorrhizae and cyano bacteria
SEPTEMBER	CHAPTER 11 ORGANISMS AND POPULATIONS	11.1 Populations	Population attributes, growth, growth models, life history variation, population interactions

SEPTEMBER	CHAPTER 12 ECOSYSTEM	12.1 Ecosystem–Structure and Function 12.2. Productivity 12.3 Decomposition 12.4 Energy Flow 12.5 Ecological Pyramids	Stratification NPP, GPP, primary production and secondary production Decomposition cycle PAR, GFC, DFC and standing crop Types of ecological pyramids
OCTOBER	CHAPTER 13 BIODIVERSITY AND ITS CONSERVATION	13.1 Biodiversity 13.2 Biodiversity Conservation	Types of biodiversity, representation of global biodiversity, patterns of biodiversity, loss of biodiversity Why and How should we conserve biodiversity? In situ and Ex-situ
TERM END EVALUATION (OCTOBER 18-30) CH 2, 3, 6 AND 7			
NOVEMBER	REVISION		
FIRST MODEL EXAMINATION (DECEMBER 2 - 13) FULL PORTIONS			
SECOND MODEL EXAMINATION (JANUARY 3 - 15) FULL PORTIONS			

BHARATIYA VIDYA BHAVAN, KOCHI
YEAR PLAN FOR THE ACADEMIC YEAR 2024-25
Subject: PSYCHOLOGY (037)
CLASS : XII

MONTH	TOPIC	SUB-TOPICS	CONCEPTS
MARCH/ APRIL	Variations in Psychological Attributes	Individual differences in human functioning assessment of psychological attributes. Intelligence, theories of intelligence. Individual differences in intelligence. Culture and intelligence. Emotional intelligence. Special abilities. Creativity	Theory of multiple intelligence, Triarchic theory of intelligence, PASS model. Variations in intelligence. Some misuse of intelligence test. Characteristics of emotionally intelligent person Aptitude: Nature and measurement
	Self and personality	Concept of self , cognitive and behavioural aspects of self, culture and self , Concept of personality, Major approaches to the study of personality, Assessment of personality	self esteem, self efficacy, self regulation.type approaches, trait approaches, 5 factor model of personality, psychodynamic approach, behavioural approach, cultural approach, humanistic approach, self report measure, projective techniques, behavioural analysis

JUNE	Meeting life challenges	Nature, types and sources of stress. Effects of stress on psychological functioning and health. Coping with Stress promoting positive health and wellbeing	A measure of stressful life events, examination anxiety stress and health, GAS, Stress and immune system lifestyle, stress management techniques, lifeskills, resilience and health
	FIRST UNIT TEST 10.06.2024	(25 MARKS)	
JUNE/JULY	Psychological disorders	Concepts of abnormality classification of psychological disorder, factors underlying abnormal behaviour, major psychological disorders	Anxiety disorders, somatic symptom disorders, dissociative disorders, mood disorders, schizophrenic disorders and its subtype, OCD, stress related disorders, neurodevelopmental disorders, substance use disorders effects of commonly abused substances
	SECOND UNIT TEST 31.07.2024	(25 MARKS)	
AUGUST	Therapeutic Approaches	Nature and process of psychotherapy. Types of therapies. Rehabilitation of the mentally ill	Therapeutic relationship. Steps in the formation of a client's problem, behavioural therapy, relaxation procedures, Cognitive therapy, Humanistic-Existential therapy, Alternative therapy.

SEPTEMBER	Attitude and Social cognition	Explaining Social behaviour nature and components of attitude attitude formation and change prejudice and discrimination, Strategies for handling prejudice	Green environment: ABC components of an attitude. Attitude formation, Attitude change, attitude behaviour relationship
	TERM END EXAMINATION 18.10.2023	(70 MARKS)	
NOVEMBER	Social influence and group processes	Nature and formation of groups. Types of groups. Influence of group on individual behaviour.	Group think, the minimal group paradigm experience social loafing, group polarization.
	FIRST MODEL EXAMINATION- 2.12.2024 (70+30= 100MARKS)		
	SECOND MODEL EXAMINATION - 3.01.2025 (70+30=100 MARKS)		
<u>SEEN AND SIGNED BY:</u>			
BVM, GIRINAGAR		KRISHNA PRIYA S PRABHU	
BAV. KAKKAND		R SRUTHI	

PORTIONS FOR EXAMINATION

FIRST UNIT TEST (10.6.2024)	Chapter 1 and Chapter 2
SECOND UNIT TEST (31.07.2024)	Chapter 2 and Chapter 3
TERM END EVALUATION (18.10.2024)	Chapter 1 to Chapter 5

BLUE PRINT

FOR 25 MARKS

1x5	5 marks
2x2	4 marks
3x3	9 marks
Case study based	7 marks

BLUE PRINT

FOR 70 MARKS

1x15	15 marks
2x6	12 marks
3x3	9 marks
4x4	16 marks
6x2	12 marks
Case study 3+3	6 marks

BHARATIYA VIDYA BHAVAN, KOCHI KENDRA
YEAR PLAN - 2024-'25
STD: XII - SUBJECT: ECONOMICS (030)

	PART A–MACROECONOMICS
April/May	Unit 2: Money & Banking
June/ July	Unit 1-National Income and related aggregates
August	Unit 4: Government budget and the economy
September	Unit 5: Balance of Payments & Foreign Exchange
October	Unit 3: Determination of income and employment

	PART-B- INDIAN ECONOMIC DEVELOPMENT
March/April	Unit 1: Development Experience (1947-90) Indian economy on the eve of Independence Indian economy 1950-90
July	Unit 2: Economic Reforms since 1991 (LPG) Unit 3: Current challenges 5: HCF
August	Unit 3: Current challenges 6: Rural development 7: Employment
September	Unit 3: Current challenges 9: Environment and Sustainable Development
November	Unit 4: Comparative Development Experiences of India and its neighbours