Computer Science
Class XII : 2023-24
Code No. – 083

Learning Outcomes :

At the end of this course, students will be able to:

1. Prerequisite : Computer Science- Class XI
2. Learning Outcomes

Student should be able to

a) apply the concept of function.
b) explain and use the concept of file handling.
c) use basic data structure: Stacks
d) explain basics of computer networks.
e) use Database concepts, SQL along with connectivity between Python and SQL.

MONTH & NO. OF WORKING DAYS : APRIL -18 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit I: Computational Thinking and Programming – 2 ● Revision of Python topics covered in Class XI. ● 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) ● Exception Handling: Introduction, handling exceptions using try-except-finally blocks ● 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	▪ Lecture method ▪ Diagrammatic representation ▪ Group discussion ▪ Demonstration of activities	The students will be able to learn ●Introduction to Files ●Types of Files ●Opening and Closing a Text File ● Writing to a Text File ●Reading from a Text File ●Setting Offsets in a File ●Creating and Traversing a Text File

MONTH & NO. OF WORKING DAYS : MAY -16 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit I: Computational Thinking and Programming – 2 ●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 writer(),writerow(),writerows() and read from a csv file using reader()	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to learn ●The Pickle Modul ● Opening and closing of binary files ● Reading from binary file ● Writing to binary files ●CSV files : Reading from CSV, Writing to CSV files

MONTH & NO. OF WORKING DAYS : JULY -22 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit I: Computational Thinking and Programming – 2 ●Data Structure: Stack, operations on stack (push & pop), implementation of stack using list. **Unit II: Computer Networks** •● **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)	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to… ● Learn Push and Pop methods of stack ● Develop program using Push and Pop methods and Display method to display the complete stack ● The evaluation of network ● How message sends and receives ● Various types of transmission media ● Various network devices ●Various network topologies (i.e. pattern of connecting various computer systems and other devices

•● **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)		

MONTH & NO. OF WORKING DAYS : AUGUST -23 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● 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 **Unit III: Database Management** ● **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)	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to learn ------ Various network protocols(i.e. rules that governs communication between various devices) Various web services that helps in navigations of web sites. ● About database where data is stored ● Relational Data model where data is stored in the form of rows and columns

MONTH & NO. OF WORKING DAYS : SEPTEMBER -23 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● **Structured Query Language:** introduction, 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, 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,	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to have the knowledge of -- ● Structured Query Language where in various types of queries related to creation of database with various types of constraints and various queries of manipulation of database and relation

MONTH & NO. OF WORKING DAYS : OCTOBER -20 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● **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	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to learn ---- ● Connectivity of Python to SQL database and the manipulation of database through python programs

MONTH & NO. OF WORKING DAYS : NOVEMBER - 19 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● **Interface of python with an SQL database** : Python programs related to (i) inserting records into a relation (ii) deleting record(s) from a relation (iii) searching a record from a relation (iv) updating a record into a relation	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to learn ---- ● Various methods of data manipulation like insert and delete record(s), search and update record(s) etc.

MONTH & NO. OF WORKING DAYS : DECEMBER - 22 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● Preparation of project report and practical file for CBSE Practical Examination	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to… ● Develop project in python interfacing mysql and project report file ● Develop practical file

MONTH & NO. OF WORKING DAYS : JANUARY -18 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● Preparing of Practical file (containing at least best 20 python programs and at least 10 SQL queries ● Preparing of Project report	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to… ● Prepare practical file ● Prepare Project report

Informatics Practices

CLASS XII _ 2023-24

Code No. 065

1. **Prerequisite:** Informatics Practices – Class XI

2. Learning Outcomes

At the end of this course, students will be able to:

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

MONTH & NO. OF WORKING DAYS : APRIL -18 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
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.	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to understand --- ● Data structure – Series, DataFrame ● Various way of creation of series. ● About CSV files and manipulation with DataFrame

MONTH & NO. OF WORKING DAYS : MAY - 16 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
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;	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to understand ------ ● Various ways of creation of DataFame and manipulation of data through dataframe

MONTH & NO. OF WORKING DAYS : JULY -22 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
●Importing/Exporting Data between CSV files and Data Frames. ● **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.	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to know ….. ● About CSV files and manipulation with DataFrame ●Visualization of data through various plots

MONTH & NO. OF WORKING DAYS : AUGUST -23 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit 2: Database Query using SQL Revision of database concepts and SQL commands covered in class XI 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().	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to know ● SQL Queries with math funcions ● SQL Queries with date functions

MONTH & NO. OF WORKING DAYS : SEPTEMBER - 23 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit 3: Introduction to Computer Networks Introduction to networks, Types of network: PAN, LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway Network Topologies: Star, Bus, Tree, Mesh. Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP.. Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to… ● know the types of network ● Know about network devices ● Internet services, websites and commonly used web browser.

MONTH & NO. OF WORKING DAYS : OCTOBER - 20 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
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.	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to know …. ● About safe use internet ● About internet fraud and IT ACT 200 ● About e-waste and its management

MONTH & NO. OF WORKING DAYS : NOVEMBER - 19 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
• Preparing of Practical file (containing at least best 20 python programs and at least 10 SQL queries Preparing of Project report	• Lecture method • Practical method • Pictorial demonstration • Discussion Method	The students will be able to… • Prepare practical file Prepare Project report

MONTH & NO. OF WORKING DAYS : DECEMBER - 22 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
• Preparing of Practical file (containing at least best 20 python programs and at least 10 SQL queries • Preparing of Project report	• Lecture method • Practical method • Pictorial demonstration • Discussion Method	The students will be able to… • Prepare practical file • Prepare Project report

Curriculum 2023-2024

Subject: Accountancy

Class: XII

Learning Objectives

1.To familiarize students with new and emerging areas in the preparation and presentation of financial statements.

2. To acquaint students with basic accounting concepts and accounting standards.

3. To develop the skills of designing a need-based accounting database.

4. To appreciate the role of ICT in business operations.

5. To develop an understanding about recording of business transactions and preparation of financial statements.

April

Chapter	Methodology	Learning Outcomes
Part-B Unit 3-Analysis of Financial Statement	Mind Maps Story Telling	**After going through this Unit, the students will be able to:** · develop the understanding of major headings and subheadings (as per Schedule III to the Companies Act, 2013) of the balance sheet as per the prescribed norms / formats. · state the meaning, objectives and limitations of financial statement analysis. · discuss the meaning of different tools of 'financial statements analysis'. state the meaning, objectives and significance of different types of ratios. · develop the understanding of computation of current ratio and quick ratio. · develop the skill of computation of debt equity ratio, total asset to debt

		ratio, proprietary ratio and interest coverage ratio. develop the skill of computation of inventory turnover ratio, trade receivables and trade payables ratio and working capital turnover ratio. · develop the skill of computation of gross profit ratio, operating ratio, operating profit ratio, net profit ratio and return on investment.
May		
Unit 4- Cash Flow Statement	Mind Maps,Storytelling	**After going through this Unit, the students will be able to**: · state the meaning and objectives of the cash flow statement. · develop the understanding of preparation of Cash Flow Statement using indirect method as per AS 3 with given adjustments.
Project work for Summer Vacation		
July and August		
Part-A Unit 2- Accounting for Companies	Mind maps Story telling Role Play	**After going through this Unit, the students will be able to:** · state the meaning of share and share capital and differentiate between equity shares and preference shares and different types of share capital. · understand the meaning of private placement of shares and Employee Stock Option

		Plan. · explain the accounting treatment of share capital transactions regarding issue of shares. · develop the understanding of accounting treatment of forfeiture and re-issue of forfeited shares. · describe the presentation of share capital in the balance sheet of the company as per schedule III part I of the Companies Act 2013. · explain the accounting treatment of different categories of transactions related to the issue of debentures. · develop the understanding and skill of writing of discount / loss on the issue of debentures. · understand the concept of collateral security and its presentation in the balance sheet. · develop the skill of calculating interest on debentures and its accounting treatment. state the meaning of redemption of debentures.
September,October and November		
Revision for term exam		
Part-A Unit 1- Accounting for Partnership Firms	Mind maps Story telling Role play	**After going through this Unit, the students will be able to:** · state the meaning of partnership, partnership firm and partnership deed.

		· describe the characteristic features of partnership and the contents of partnership deeds. · discuss the significance of provision of Partnership Act in the absence of partnership deed. · differentiate between fixed and fluctuating capital, outline the process and develop the understanding and skill of preparation of Profit and Loss Appropriation Account. · develop the understanding and skill of preparing profit and loss appropriation account involving guarantee of profits. · develop the understanding and skill of making past adjustments. · state the meaning, nature and factors affecting goodwill · develop the understanding and skill of valuation of goodwill using different methods. · state the meaning of sacrificing ratio, gaining ratio and the change in profit sharing ratio among existing partners. · develop the understanding of accounting treatment of revaluation assets and reassessment of liabilities and treatment of reserves and accumulated profits by preparing a revaluation account and balance sheet. · explain the effect of change in profit sharing ratio on admission of a new partner. · develop the understanding and skill of treatment of goodwill as per AS-26, treatment of revaluation of

		assets and re-assessment of liabilities, treatment of reserves and accumulated profits, adjustment of capital accounts and preparation of balance sheet of the new firm.· explain the effect of retirement / death of a partner on change in profit sharing ratio. · develop the understanding of accounting treatment of goodwill, revaluation of assets and re-assessment of liabilities and adjustment of accumulated profits and reserves on retirement / death of a partner and capital adjustment. · develop the skill of calculation of deceased partner's share till the time of his death and prepare deceased partner's executor's account. · discuss the preparation of the capital accounts of the remaining partners and the balance sheet of the firm after retirement / death of a partner. understand the situations under which a partnership firm can be dissolved. · develop the understanding of preparation of realisation account and other related accounts.
December,January and February		
Revision of chapters and discussion on last 5 yrs question paper of CBSE.		

Curriculum 2023-24

Subject: Business Studies

Class: XII

Learning Objectives

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

April

Chapter	Methodology	Learning Outcomes
Part-B Unit-11- Marketing management	Mind Maps, storytelling, Case studies & Role Play	**After going through this Unit, the students will be able to:** · Understand the concept of marketing. · Explain the features of marketing. · Discuss the functions of marketing. · Explain the marketing philosophies. · Understand the concept of marketing mix. ·Describe the elements of

		marketing mix. ·Understand the concept of the product as an element of marketing mix. · Understand the concept of branding, labelling and packaging. · Understand the concept of price as an element of marketing mix. · Describe the factors determining price of a product. · Understand the concept of physical distribution. · Explain the components of physical distribution. · Describe the various channels of distribution. · Understand the concept of promotion as an element of marketing mix. · Describe the elements of the promotion mix. · Understand the concept of advertising. · Understand the concept of sales promotion. · Discuss the concept of public relations.

Chapter	Methodology	Learning Outcomes
Unit-12- Consumer protection	Mind Maps, storytelling, Case studies & Role Play	· Understand the concept of consumer protection. · Describe the importance of

		consumer protection. · Discuss the scope of Consumer Protection Act, 2019 Understand the concept of a consumer according to the Consumer Protection Act, 2019. · Explain the consumer rights · Understand the responsibilities of consumers · Understand who can file a complaint and against whom? · Discuss the legal redressal machinery under Consumer Protection Act, 2019. · Examine the remedies available to the consumer under Consumer Protection Act, 2019 Describe the role of consumer organizations and NGOs in protecting consumers' interests.
Project Work for Summer Vacation		

May

Chapter	Methodology	Learning Outcomes
Part-B Unit-9 Financial Management	Mind Maps, storytelling, Case studies & Role Play	**After going through this Unit, the students will be able to:** · Understand the concept of financial management. · Explain the role of financial management in an organisation. · Discuss the objectives of financial management Discuss the three financial decisions and the factors

		affecting them. · Describe the concept of financial planning and its objectives. · Explain the importance of financial planning. Understand the concept of capital structure. · Describe the factors determining the choice of an appropriate capital structure of a company. · Understand the concept of fixed and working capital. · Describe the factors determining the requirements of fixed and working capital.
Unit-10 Financial Market	Mind Maps, storytelling, Case studies & Role Play	· Understand the concept of financial market. Understand the concept of money market. · Discuss the concept of capital market. · Explain primary and secondary markets as type s of capital market. · Differentiate between capital and money markets. · Distinguish between primary and secondary markets. . Give the meaning of a stock exchange. · Explain the functions of a stock exchange. · Discuss the trading procedure in a stock exchange. · Give the meaning of depository services and demat account

		as used in the trading procedure of securities. State the objectives of SEBI. · Explain the functions of SEBI.

July

Chapter	Methodology	Learning Outcomes
Part-A Unit-1 Nature and significance of management	Mind Maps & Role Play	**After going through this Unit, the students will be able to:** · Understand the concept of management. · Explain the meaning of 'Effectiveness and Efficiency. · Discuss the objectives of management. · Describe the importance of management. · Examine the nature of management as a science, art and profession. Understand the role of top, middle and lower levels of management · Explain the functions of management Discuss the concept and characteristics of coordination. · Explain the importance of coordination
Unit-2 Principles of management	Mind Maps & Role Play	· Understand the concept of principles of management. · Explain the significance of management principles. · Discuss the principles of management developed by Fayol. Explain the principles

		and techniques of 'Scientific Management'. · Compare the contributions of Fayol and Taylor.
Part-A Unit-3 Business Environment	Mind Maps, storytelling, Case studies	**After going through this Unit, the students will be able to:** · Understand the concept of 'Business Environment'. · Describe the importance of Business Environment · Describe the various dimensions of 'Business Environment'. · Understand the concept of Demonetization.

August and September

Chapter	Methodology	Learning Outcomes
Unit-4 Planning	Mind Maps, Role Play, Case studies	· Understand the concept of planning. · Describe the importance of planning. · Understand the limitations of planning. · Describe the steps in the process of planning. ·Develop an understanding of single use and standing plans. · Describe objectives, policies, strategy, procedure, method, rule, budget and programme as

		types of plans.

Chapter	Methodology	Learning
Part-A Unit 5- Organizing	Mind Maps, storytelling	**After going through this Unit, the students will be able to:** · Understand the concept of organizing as a structure and as a process. · Explain the importance of organising. Describe the steps in the process of organising. · Describe functional and divisional structures of organisation. · Explain the advantages, disadvantages and suitability of functional and divisional structure. · Understand the concept of formal and informal organisation. · Discuss the advantages and disadvantages of formal and informal organisation. Understand the concept of delegation. · Describe the elements of delegation. · Appreciate the importance of delegation. Understand the concept of decentralisation. · Explain the importance of decentralisation. · Differentiate between delegation and

		decentralisation.
Part-A Unit 6- Staffing	Mind Maps, storytelling, Role Plays & Case studies	**After going through this Unit, the students will be able to:** · Understand the concept of staffing. · Explain the importance of staffing · Understand the specialized duties and activities performed by Human Resource Management · Describe the steps in the process of staffing Understand the meaning of recruitment. · Discuss the sources of recruitment. Explain the merits and demerits of internal and external sources of recruitment. Understand the meaning of selection. · Describe the steps involved in the process of selection. Understand the concept of training and development. · Appreciate the importance of training to the organisation and to the employees. · Discuss the meaning of induction training, vestibule training, apprenticeship training and internship training. · Differentiate between training and development. · Discuss on the job and off the job methods of training.

Revision for Ist Term

October and November

Chapter	Methodology	Learning
Unit 7 Directing	Mind Maps, storytelling, Role Plays & Case studies	· Describe the concept of directing. · Discuss the importance of directing Describe the various elements of directing Understand the concept of motivation. · Develop an understanding of Maslow's Hierarchy of needs. · Discuss the various financial and non-financial incentives. Understand the concept of leadership. · Discuss the various styles of leadership. Understand the concept of communication · Understand the elements of the communication process. · Discuss the concept of formal and informal communication. · Discuss the various barriers to effective communication. · Suggest measures to overcome barriers to communication.
Unit-8 Controlling	Mind Maps, storytelling, Role Plays & Case studies	· Understand the concept of controlling. · Explain the importance of controlling -Describe the relationship between planning and controlling -

		Discuss the steps in the process of controlling

- **Revision of chapters and discussion on previous 5 years question papers (CBSE)**

CURRICULUM 2023-2024

Chemistry

Class XII

OBJECTIVES

1 Promote understanding of basic facts and concepts of chemistry while retaining the excitement of chemistry.

2 Make students capable of studying chemistry in academic and professional courses(such as medicine, engineering ,technology) at tertiary level.

3 Expose the students to various emerging new areas of chemistry and apprise them with their relevance in future studies and their application in various spheres of chemical science and technology.

4 Equip students to face various challenges related to health,

nutrition ,environment,population, weather, industries and agriculture.

5 Develop problem solving skills in students.

6 Apprise students with the interface of chemistry with other

disciplines of science such as Physics, Biology, Engineering Geology and Mathematics.

7 Acquaint students with different aspects of chemistry and its use in daily life.

8 Develop an interest in students to study chemistry as a discipline.

9 Integrate life skills and values in context of chemistry

COURSE STRUCTURE

S.No.	Title	No. of Periods	Marks
1	Solutions	10	7
2	Electrochemistry	12	9
3	Chemical Kinetics	10	7
4	d -and f -Block Elements	12	7
5	Coordination Compounds	12	7
6	Haloalkanes and Haloarenes	10	6
7	Alcohols, Phenols and Ethers	10	6
8	Aldehydes, Ketones and Carboxylic Acids	10	8
9	Amines	10	6
10	Biomolecules	12	7
	Total		70

EXAM	MONTH	SYLLABUS
PERIODIC 1	**JULY**	**SOLUTIONS, ELECTROCHEMISTRY, CHEMICAL KINETICS**
PERIODIC 2 /HALF YEARLY	**SEPTEMBER**	**SOLUTIONS ELECTROCHEMISTRY, CHEMICAL KINETICS, HALOALKANES AND HALOARENES, ALCOHOLS, PHENOLS AND ETHERS, ALDEHYDES KETONES AND CARBOXYLIC ACIDS, AMINES**
PERIODIC 3/PRE BOARD 1	**DECEMBER**	**ALL TEN UNITS** **AS PER CBSE CURRICULUM**
PRE BOARD II	**JANUARY**	**ALL TEN UNITS** **AS PER CBSE CURRICULUM**
CBSE EXAM	**FEBRUARY & MARCH**	**AS PER CBSE CURRICULUM**

MONTH ;APRIL

NO. OF DAYS 18

UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
UNIT Solutions No. of periods :10 TOPIC ● Types of solutions ● Expression of concentration of solutions of solids in liquids ● Solubility of gases in liquids ● Solid solutions	Lecture method Interactive approach Demonstration	Students will be able to: ● Describe the formation of different types of solutions ● Express concentration of solutions in different units ● State and explain Henry's law and Raoult's law ● Distinguish between ideal and non ideal solution ● Explain deviations of ideal solutions from Raoult's law ● Describe colligative properties of solutions and correlate with the molar masses of the solutes

● Raoult's law ● Colligative properties ● Relative lowering of vapour pressure ● Elevation of boiling point ● Depression of freezing point ● Osmotic pressure ● Determination of molecular masses using colligative properties ● Abnormal molecular masses ● Van't Hoff factor		● Explain abnormal colligative properties exhibited by some solutes in solutions
UNIT Electrochemistry No. of periods :12 TOPIC ● Redox reaction ● 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		Students will be able to: ● Describe an electrochemical cell and differentiate between Galvanic cell and electrolytic ● Apply Nernst Equation for calculating the EMF of electrochemical cell and define Standard potential ● Derive relation between Standard potential of the cell Gibbs energy of cell reaction and equilibrium constant.
PRACTICAL **1** Preparation of crystals of Mohr's salt 2 Quantitative analysis Titration of Mohr's salt vs KMnO4 Titration of oxalic acid vs KMnO4	Lecture method Interactive approach Demonstration Performing experiments and recording observations, Analysis	Students will be able to 1 prepare crystals of double salt, Mohr's salt 2 Perform volumetric redox titrations. 3 Apply Concepts of molarity in calculations in

MONTH: :MAY

NO.OF DAYS:: 16

UNIT/TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
UNIT Electrochemistry TOPIC ● Conductance in electrolytic solution ● Specific and molar conductivity ● Variation of conductivity with concentration ● Kohlrausch's law ● Electrolysis ● Laws of electrolysis ● Dry cell ● Electrolytic and Galvanic cells ● Lead accumulator ● Fuel cells ● Corrosion UNIT CHEMICAL KINETICS No. of periods:10 TOPIC ● 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 reaction rate constant ● Integrated rate equation and half life of zero and first order reaction ● Concept of collision theory	Lecture method Peer teaching Interactive approach Lecture Method Interactive approach Demonstration	Students will be able to: ● Define resistivity conductivity and molar conductivity of ionic solution ● Differentiate between ionic and electrolytic conductance. ● Describe the method for measurement of conductivity of electrolytic solutions and calculation of their molar conductivity. ● Justify the variation of conductivity and molar conductivity of solutions with change in their concentration ● Enunciate the kohlrausch law and learn its application ● Understand quantitative aspects of electrolysis ● Describe the construction of some primary and secondary batteries and fuel cells ● Explain corrosion as an electrochemical process Students will be able to: ● Define the average and instantaneous rate of a reaction ● Express the rate of a reaction in terms of change in concentration of either of the reactants or products with time ● Distinguish between elementary and complex reactions ● Differentiate between the molecularity and order of a reaction ● Define rate constant ● Discuss the dependence of rate of a reaction on concentration temperature and catalyst ● Derive integrated rate equation for the zero and first order reactions ● Describe collision theory

(Elementary idea) ● Activation energy ● Arrhenius equation **PRACTICAL** 1 Chemical kinetics Effect of change in concentration on Rate of reaction between sodium thiosulphate and HCl 2 Chromatography **INVESTIGATORY PROJECT** (As holidays Home work)	Demonstration Method Performing experiments,Recording observations, and analysis Guidelines for Investigatory project will be given	Students will be able to ● Correlate factors affecting rate of reaction by performing experiment ● Understand the principle of paper chromatography ● Calculate RF values. Students will be able to ● Select topic of their project ● Carry out necessary investigation and data collection ● Draft of project report

Month ; July

No. of days ;22

UNIT/TOPIC	METHODOLOGY	
UNIT Haloalkanes and haloarenes No. of periods:10 TOPIC ● Haloalkanes ● Nomenclature ● Nature of C-X bond ● Physical and chemical properties ● Optical rotation ● Mechanism of substitution reactions ● Haloarenes ● Nature of C-X bond ● Substitution reactions ● Directive influence of halogen in monosubstituted compounds only ● Uses and en vironmental effects of dichloromethane ,trichloromethan e,tetra chlorimethane,Io doform,freon,DD T UNIT Alcohols,phenols and ethers No. of periods;10 TOPIC ● Alcohols ● Nomenclature ● Method of preparation ● Physical and chemical properties of primary alcohols	Lecture method Interactive approach Concept maps Art integrated learning	Students will be able to: ● Name haloalkanes and haloarenes according to the IUPAC system of nomenclature ● Describe the reactions involved in preparation of haloalkanes and haloarenes and understand various reactions that they undergo ● Correlate the structure of Halo alkanes and haloarenes with various types of reactions ● Use stereochemistry as a tool for understanding the reaction mechanism ● Highlight the the environmental effects of polyhalogen compounds Students will be able to: ● Name alcohols phenols and ethers according IUPAC system of nomenclature ● Discuss the reactions involved in the

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 reaction ● Uses of phenols ● Ethers ● Nomenclature ● Methods of preparation ● Physical and chemical properties ● Uses **PRACTICAL** 1 Prepararion of lyophilic sol 2 Preparation of lyophobic sol 3 Identification of functional group Alcohol and phenol **INVESTIGATORY PROJECT**	Lecture method Interactive approach Concept map Art integrated learning	preparation of alcohols from alkanes and aldehydes ketones and carboxylic acid ● Discuss the reactions involved in preparation of phenols from halarenes, benzene sulphonic acids, diazonium salt and cumene ● Discuss the reactions for preparation of ethers from alcohols, alkyl halides and sodium alkoxides ● Correlate physical properties of alcohols ,phenols and ethers with their structures ● Discuss chemical reactions of three classes of compounds on the basis of their structure

		Students will be able to ● Distinguish between lyophilic and lyophobic sols ● Appreciate different. methods of preparation of sols ● Distinguish between alcohols and phenols by performing chemical tests. Students will be able to ● Perform experiments ● Write project report
	Demonstration Method Performing experiments,Recording observations, and analysis Performing experiments	

Month ; August

No. of days ;23

UNIT/TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
UNIT	Lecture method	Students will be able to:

Aldehydes, Ketones and carboxylic acids No. of periods :10 TOPIC ● Aldehydes and ketones ● Nomenclature nature of carbonyl group ● Methods of preparation ● Physical and chemical properties ● Mechanism of nucleophilic addition ● Reactivity of Alpha hydrogen in aldehydes ● Uses ● Carboxylic acids ● Nomenclature ● Acidic nature ● Methods of preparation ● Physical and chemical properties ● Uses UNIT Amines No. of periods:10 TOPIC ● Amines ● Nomenclature ● Classification ● Structure ● Methods of preparation ● Physical and chemical properties ● Uses ● Identification of primary, secondary and tertiary amines ● Diazonium salts ● Preparation	Interactive approach Concept maps	● Write the common and IUPAC names of aldehydes ketones and carboxylic acids ● Write the structures of the compounds containing functional groups namely carbonyl and carboxyl group ● Describe the important methods of preparation and reactions of these classes of compounds ● Correlate physical properties and chemical reactions of aldehydes ketones and carboxylic acids with their structures ● Explain the mechanism of a few selective reactions of aldehydes and ketones ● Understand the various factors affecting the acidity of carboxylic acids and their reactions ● Describe the uses of aldehydes ketones and carboxylic acids Students will be able to ● Describe amines as derivatives of ammonia having a pyramidal structure ● Classify amines as Primary, secondary and tertiary name a means by common names and IUPAC system ● Describe some important methods of preparation of amines ● Explain the properties of amines ● Distinguish between primary secondary and tertiary amines ● Describe the method of preparation of diazonium salts and their importance in the synthesis of series of aromatic compounds including azodyes

● Chemical reactions ● Importance in synthetic organic compounds	Lecture method Interactive approach Concept maps	
PRACTICAL 1 Identification of functional group Aldehyde,ketone,carboxylic acids 2 Preparation of 2 Naphthol aniline dye 3 Salt Analysis	Demonstration Method Performing experiments,Recording observations, and analysis	Students will be able to ● Distinguish between aldehydes and ketones by performing chemical tests ● Identify presence of carboxylic acid Group. ● Prepare azo dye and visualize diazotisation and coupling reaction
INVESTIGATORY PROJECT		Students will be able to ● Finalize their project report

	Discussion with students for any necessary changes in their project	

Month ; September

No. of days ;23

UNIT/TOPIC	**METHODOLOGY**	
UNIT Biomolecules No. of periods:12 TOPIC ● Carbohydrates ● Classification aldoses and ketoses ● Monosaccharides ● Glucose and Fructose ● D-L configuration ● Oligosaccharides ,sucrose, lactose,Maltese ● Polysaccharides, starch,cellulose, glycogen ● Importance of carbohydrates ● Proteins ● Elementary idea of amino acids ● Peptide Bond ● Polypeptides ● Structure of proteins primary ,secondary, tertiary and quaternary	Lecture method Collaborative learning	Students will be able to ● Define the various molecules like carbohydrates proteins and nucleic acids,vitamins and harmones,enzymes. ● Classify carbohydrates, proteins and nucleic acids on the basis of their structures ● Explain the difference between DNA and RNA ● Appreciate the role of biomolecules

structure ● Denaturation of proteins ● Enzymes ● Hormones Elementary idea ● Vitamins Classification and functions ● Nucleic acids ● DNA and RNA REVISION FOR TERM EXAM		

Month ; October

No. of days ; 20

UNIT/TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
UNIT d block elements No. of periods:12 TOPIC ● General introduction ● Electronic configuration ● Occurrence and characteristics of transition metals ● General trends in properties of the first row transition metal ● Metallic character and ionization enthalpy ● Oxidation states and ionic radii	Lecture method Interactive approach Question answer technique Art integrated learning (3-D models)	Students will be able to: ● learn position of d and f block elements in the periodic table ● Know the electronic configuration of transition elements and inner transition elements ● Appreciate the relative stability of various oxidation states in terms of electrode potential values ● Describe the preparation properties structures and uses of some important compounds like potassium dichromate and potassium permanganate ● Understand the general characteristics of d and f block elements and their general horizontal and group ttends ● Describe the properties of the F block elements and give comparative account of lanthanides and actinoids with respect to their electronic

● Colour ● Catalytic property ● Magnetic properties ● Interstitial Compounds ● Alloy formation ● Preparation and proper of K2Cr2O7 and KMnO4 ● lanthanoids ● Electronic configuration ● Oxidation States ● Chemical reactivity ● Lanthanoid contraction and its consequences ● Actinoids ● Electronic configuration ● Oxidation states ● Comparison with lanthanoids **PRACTICAL** Salt analysis		configuration Oxidation state and chemical behaviour Students will be able to ● Identify acidic and basic radical in given salt ● Understand Concept of precipitation, solubility and ionic product ● Apply principle of common ion effect in salt analysis.

	Demonstration Method Performing experiments,Recording observations, and analysis	

Month ; November

No. of days ;19

UNIT/TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
UNIT Coordination compounds No. of periods :12 TOPIC ● Coordination compounds ● Introduction ● Ligands ● Coordination number ● Colour ● Magnetic properties and shapes ● IUPAC nomenclature mononuclear coordination compounds ● Bonding ● Werner's theory ● Valence bond theory and	Lecture method Group discussion	Students will be able to ● Appreciate the postulates of werner's theory of coordination compounds ● Know the meaning of terms like coordination entity central atom ligand coordination number coordination sphere oxidation number homoleptic and heteroleptic complex ● Learn the rules of nomenclature of coordination compounds ● Write the formulas and names of mononuclear coordination compounds ● Define different types of isomerism of coordination compounds ● Understand the nature of bonding in coordination compounds in terms of valence bond theory and crystal field theory ● Appreciate the importance and applications of coordination compounds in our day to day

crystal field theory ● Structure and stereoisomerism ● Importance of coordination compounds in qualitative analysis, extraction of metals and biological system. REVISION **PRACTICAL** Salt Analysis	Demonstration Method Performing experiments,Recording observations, and analysis	Students will be able to ● Identify acidic and basic radical in given salt ● Understand Concept of precipitation, solubility and ionic product ● Apply principle of common ion effect in salt analysis.

Month ; December

No. of days ; 22

UNIT/TOPIC	**METHODOLOGY**	
PREBOARD AND REVISION	PEN PAPER TESTS DOUBT CLEARING SESSIONS	

Month ; January

No. of days ;18

UNIT/TOPIC	**METHODOLOGY**	
PREBOARD REVISION CBSE PRACTICALS	PEN PAPER TESTS DOUBT CLEARING SESSIONS	

Month ; February

No. of days ;15

UNIT/TOPIC	**METHODOLOGY**	
CBSE PRACTICAL AND EXAMS	CONDUCTION OF CBSE PRACTICAL AND EXAM AS PER GUIDELINES	

CURRICULUM 2023-24

SUBJECT- BIOLOGY

CLASS- XII

LEARNING OBJECTIVES-

1- Define basic biological concepts and processes.

2- Describe levels of an organization and related functions in plants and animals.

3- Describe the intricate relationship between various cellular structures and their corresponding functions.

4- Demonstrate critical thinking skills.

MONTH –APRIL NO. OF WORKING DAYS- 18		
Topic	**METHODOLOGY**	**LEARNING OUTCOMES**
UNIT: REPRODUCTION 2. Sexual Reproduction in Flowering Plants.	● Demonstration and Lecture method ● Laboratory method (demonstration of pollen germination with locally available flower in nutrient medium). ● Ppt and videos on this lesson.	● Acquire the knowledge to identify various flowers pollinated by various agencies. ● Development of special modes of fruit formation and its key concepts. ● Concept of endosperm formation and its importance.
3- Human Reproduction	● Demonstration and Lecture method ● Study of spermatogenesis and oogenesis in mammalian testis and ovary via slides.	● Students will be able to understand the concept of spermatogenesis and oogenesis and various hormonal changes occurring during it. ● Will know the various stages of implantation and its affect on uterus. ● Role of placenta and placental hormones during pregnancy.

MONTH –MAY NO. OF WORKING DAYS- 16		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
3- Human Reproduction cont.		
4-Reproductive Health	● Demonstration and Lecture method ● Student centered method (inside the class)	● Students will be aware of various methods which are developed to combat infertility. ● Use of contraceptions and their effect on body
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
UNIT- GENETICS AND EVOLUTION 5- Principles of Inheritance and Variations	● Demonstration and Lecture method ● Observation of various topics through videos and ppt.	● Concept building on mendelian genetics. ● Various attributes of mendelian and chromosomal disorders. ● Blood groups and their role in various organisms. ● Role of mutation and its affect can be studied. ● . Family diseases can be studied with the help of pedigree analysis chart.
MONTH - JULY NO. OF WORKING DAYS- 22		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
5- Principles of Inheritance and Variations (cont.)		
6-Molecular Basis of Inheritance	● Demonstration and Lecture method ● Showing e-content (videos, ppts)	● Concept of DNA and its structure is developed. ● DNA packaging and its applications. ● Genetic code and its relation with protein synthesis.
7- Evolution	● Demonstration and Lecture method ● Student centered	● Concept building on various theories of evolution

	method.	• Knowledge about evolution ,its patterns and evidences of evolution • Strategies of hardy Weinberg principle. • Deviations from Hardy Weinberg principle. • Knowledge of evolution of plants and animals.

MONTH - AUGUST NO. OF WORKING DAYS- 23		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
8-Human Health and Diseases	• Demonstration and Lecture method • Through ppts and videos.	• Knowledge of how diseases are spread will be developed. • Concept of personal hygiene and its importance will be developed. Drugs and misuse will be administered.
10-Microbes in Human Welfare	• Demonstration method • Lecture method	• Know the importance of microbes in day to day life. • Role of antibiotics, its use and its manufacture. • Role of microbes an biocontrol agents.
MONTH - SEPTEMBER NO. OF WORKING DAYS- 23		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
10- Microbes in Human Welfare (CONTD.) & Revision		
MONTH - OCTOBER NO. OF WORKING DAYS-20		

CHAPTER	METHODOLOGY	LEARNING OUTCOMES
11-Biotechnology: Principles and Processes	• Demonstration and Lecture method • Ppts	The students will be able to – • Know the concept of biotechnology and its applications. • How this can be used in different methodologies • Formation and implications of rDNA
12-Biotechnology and Its Application	•Demonstration and Lecture method • Ppts and recent related discovery discussion	The students will be able to understand the • concept of gene therapy and its applications in various diseases • The use of various GMOs and their benefit to organisms.
13- Organisms and Populations.	• Demonstration and Lecture method	The students will be able to- • Relate the various kinds of population interactions • Population characteristics and its estimation will be known. • Concept of habitat and niche will be broadened.
MONTH - NOVEMBER **WORKING DAYS- 19**		**NO. OF**
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
14- Ecosystem	• Demonstration and Lecture method	The students will be able to understand- • The concept of primary and secondary

	• ppts	productivity will be developed. • Ecological succession and its application • Energy flow and its estimation via 10% law
15- Biodiversity and its Conservation	• Demonstration and Lecture method • Student centric method	The students will be able to- • Differentiate between various conservation strategies. • Knowledge of red data book will be enhanced. • Identification of biodiversity hot spots
MONTH - DECEMBER NO. OF WORKING DAYS- 22 **REVISION and PERIODIC II**		
MONTH-JANUARY (18)days	**PRACTICE EXAM II**	
MONTH- FEBRUARY (15)days	**BOARD EXAMS**	
MONTH-MARCH	**BOARD EXAMS**	

DAV PUBLIC SCHOOL BRIJ VIHAR GHZ UP

CURRICULUM ECONOMICS 2023-24

CLASS XII

LEARNING OBJECTIVES:

Understanding of some basic economic concepts and development of economic reasoning which learners can apply in day-to-day life.

Realization of learners' role in Nation building.

Equipment with basic tools of economics to analyze economic issues.

Development of understanding that there can be more than one view on any economic issue and necessary skills to argue logically with reasoning.

Understand the components which are used in measuring National Income.

Understanding how the Macro model works in the economy and is helpful in achieving the objectives of macro economy.

MONTH: APRIL,2023 **NO OF WORKING DAYS:18**

TOPIC	METHODOLOGY	LEARNING OUTCOMES
Development Policies and Experience (1947-1990) Indian Economy on The Eve of	Familiarize the students about the state of the Indian Economy in 1947 Write the bullet points on the black board and discuss all the points in class	Understanding the economy before independence. British policies were more with the protection and promotion of

Independence	(INFOGRAPHICS) Factors that led to the underdevelopment and stagnation of the Indian Economy will be asked from students and they will be asked to make a flow chart of it	British economic interests . The rule of British India govt led to collapse of Indian agriculture, industry At the time of independence, the social and Economic challenges before the country were large.
Indian Economy (1950-1990)	Economic system that the Indian Economy adopted, will be discussed in class. Economic planning and its objectives which will be explained using blackboard. Goals of five-year planning will be explained using flow charts. The Green Revolution in the agriculture sector will be discussed and how it helped India to become self-sufficient in food grain production. Various policies will be explained which raised the contribution of the industrial sector in GDP. Concept of inward-looking trade policy will be discussed and the strategy of import substitution and export promotion will be explained.	All economic planning is done through five-year plans. After Independence India adopted Mixed Economic system The Dependence on agriculture was very large. Main policy measures in Agriculture were the green revolution and land reforms. The Main drawback in industrial sector was insufficient functioning of the public sector Our ponies were inward oriented and so we failed to develop a strong export sector.
Economic Reforms Since 1991	Relating previous chapters with this chapter discussing the condition of the Indian Economy due to which economic reforms were introduced The mechanism will be discussed through reforms will be introduced	India was facing an economic crisis due to which NEP was adopted Many domestic reforms were introduced in industrial and

	Elements of NEP will be explained through flowcharts. Real life Indian economic eg will be taken to explain the reforms introduced during 1991, liberalization, Globalization, Demonetization and GST	financial sector Role of Public sector was reduced, and many private sector companies were given chance Outsourcing emerged as a business activity. Reasons for demonetization and GST and how far it impacted Economics.

MONTH: MAY,2023 **NO OF WORKING DAYS:16**

TOPIC	METHODOLOGY	LEARNING OUTCOMES
Human Capital	Meaning of Human Capital will be explained by discussing role of factors of production Discussion on similarities between physical capital and human capital will be discussed in the class Students will be asked how human capital formation takes place Flow charts on sources of Human Capital will be made on the back Board and students will be asked to talk about them. A relationship of Human capital with Human Development and Economic growth will be explained by taking examples A discussion on what needs to be done by Govt to Improve Human capital formation will be done	Understand the meaning of Human Capital and Physical Capital. Differentiate between Human capital and Human development. How Human Capital formation can be improved in India. What are the steps taken by the Govt to Improve human capital formation

	with students and suggestions will be asked from them.	
Rural Development	Initially the condition of the rural sector will be discussed with the students A flow chart will be made on the important features of rural sector in our country as suggested by students Rural Development in India Infrastructure Rural credit Agriculture Marketing Warehousing facilities Insurance and risk management All these will be taken up by help of case studies Students will be asked about new development avenues in rural areas Organic Farming topic will be taken up by showing a video to the students and discussing the topic in class	Will be able to explain the term rural development Chalk out the features of rural development in India Suggest measures to Improve condition of rural development through infrastructure development Improving rural credit, marketing facilities, warehousing facilities The students will be able to suggest various avenues to improve condition of rural sector Students will be able to tell why organic farming is better .

NOTE:

Instructions for the Project work will be given in the class and the guidelines will be given to students to complete the project work during summer vacations.

MONTH: JULY,2023 **NO OF WORKING DAYS:22**

TOPIC	METHODOLOGY	LEARNING OUTCOMES
Employment growth, informalization and other issues.	Explain the basic concept related to unemployment. Growth and change in formal and informal sector of employment. Students will be given examples to differentiate between worker, workforce, and unemployment. Different types of unemployment will be explained by citing various examples to students. Case studies will be taken up on govt initiative on generating employment Initiative taken by the Govt during the situation of covid19 to generate employment will also be discussed	Enable the students to know basic concepts related to unemployment. Students will be able to differentiate between worker, workforce, and unemployment, formal and informal sector Differences between types of unemployment will be explained by students by giving examples. Students will be able to give answers based on case studies. Will be able to discuss how Govt during the situation of covid19 generate employment and help people come out this situation
Sustainable Economic Development	Topic will be started with egs of Biotic and Abiotic elements of environment Students will be asked examples for the same Flow chart will be used to relate growth with degradation of Environment Strategy of sustainable development will be discussed, and students' view will be asked on the issue Role of the students in	Understand the concept of Environment Chalk out the causes and effect of environmental degradation and resource depletion Understand the Environmental challenges faced by India Enable to relate environmental issues to the larger context of sustainable development. Each student will be able to take

	contributing towards sustainability will be discussed.	one initiative in fulfilling the goal of attaining sustainability.

MONTH: AUGUST,2023 **NO OF WORKING DAYS:23**

TOPIC	METHODOLOGY	LEARNING OUTCOMES
Development Experiences in India	Discussing the latest scenario with students about the relation of India with China and Pakistan. Students will be told how, not only India struggled in its journey of independence but also China and Pakistan also did the same. Historical paths of all 3 countries will be taught with the help of tables mentioning various indicators of development. Comparative study of all 3 countries will be done With the help of case study and data and latest data available.	Enable students to comprehend the history of development of 3 nations Chalk out the struggles faced by the 3 countries in their path of development Enable them to compare the development indicators of the 3 countries and conclude which country is in the best position.
Macroeconomics: National Income and Related Aggregates	Starting by relating micro with macro-Economics. Taking examples to explain the concept of macroeconomics.	Differentiate between micro macroeconomics. Site examples on micro and macroeconomics.

	Using black board to differentiate between micro and macroeconomics in tabular form. Circular flow of National Income Meaning of various NI concepts will be explained with help of examples. Diagrams will be used to explain the topic of real flow and money flow. Methods of measuring NI Output Method and numerical based on it.	Understand the various concepts of National income and their relevance in measuring NI. Enable them to draw circular flow of national income Chalk out the components of the Output Method and will enable them to formulate formulas. Enable them to calculate NI by output method. Differentiate between nominal and real GDP.

MONTH: SEPTEMBER,2023 NO OF WORKING DAYS:23

TOPIC	METHODOLOGY	LEARNING OUTCOMES
National Income Aggregates (contd)	Income and expenditure method numerical examples on black board will be explained. Examples of various economic activities will be taken, and students will be asked weather they will be included or not in GNP.	Chalk out the components of the income and expenditure Method and will enable them to formulate formulas. Enable them to calculate NI by all these methods. The activities which are included in GNP and why.

	Concept of real and nominal GDP will be explained relating it to NI At constant and current price.	Differentiate between nominal and real GDP.
Money and Banking	Starting the chapter by discussing about medium of exchange during historical time till British period Asking students about drawbacks of barter system over money system Prompting students to talk about functions of money Asking students what the components of Money Supply are	Chalk out drawbacks of barter system Explain functions of money Name the components of money supply

	Taking numerical example, the concept of credit creation by commercial banks will be explained Functions of central banks will be taken up and day to day examples will be taken up to explain the concept. Taking live examples explaining the measures adopted by the central bank to control credit.	Enable them, to numerically explain credit creation by commercial banks Students will be able to chalk out functions of Central Bank Enable the students to chalk out steps taken by the central banks to control the situation of money supply in the economy.
Revision for Half Yearly Exam	Sample papers will be discussed, and practice will be given for objective type questions.	Students will be able to practice different types of questions.

Mock conduction of Viva will be taken from project	Projects will be checked and any short coming in the project will be told to the students.	Students will get practice of viva for project.

MONTH: OCTOBER,2023 **NO OF WORKING DAYS:20**

TOPIC	METHODOLOGY	LEARNING OUTCOMES
Government Budget	Meaning of govt budget will be explained in line with budget made by a family Objectives of budget will be explained with lecture method Flow chart will be used for explaining components of budget Various examples will be given to students to classify them into various categories	Student will be able to understand why budgeting for a govt is important Enable them to classify various budget receipts and expenditures into budget receipts and expenditures They will be able to site examples of different receipts and expenditures

	Types of budgets will be taken up and various types of deficits in the budget will be discussed. Union Budget 2023 will be discussed with the students. Use of Aatam Nirbhar Bharat in budget Numerical examples will be taken up to explain how to calculate different types of deficits in the budget.	Enable students to calculate Different types of deficits in the Budget.
Balance of Payment	Taking example of goods traded outside and purchased will be used to explain concept of BOP Flow chart will be used to explain components of BOP Using components BOP current A/C and capital A/C will be explained. Accommodating and autonomous items in BOP A/C. Students will be prompted to give reasons for disequilibrium in BOP and measures will be discussed.	Define meaning of BOP Chalk out the components of BOP Differentiate the concept of current and capital A/C with examples. Establish differences between accommodating and autonomous items. Give reasons for disequilibrium in BOP.

Foreign Exchange Rate	Students will be given a situation where they had to purchase goods from abroad taking this as a base foreign exchange rate will be explained. Using diagram determination of foreign exchange rate will be explained. Comparative study of various exchange rates will be done using tables on the blackboard. Taking examples, the spot market and forward market will be explained.	They could relate it to there Real life experience Draw diagram how exchange rate is determined by DD and SS factors. Differentiate between fixed and flexible exchange rate Enable the students to understand the difference between spot and forward market.

MONTH: NOVEMBER,2023 NO OF WORKING DAYS:19

TOPIC	METHODOLOGY	LEARNING

		OUTCOMES
Determination of Income and Employment	Students will be familiarized with concepts of AD and AS relating to demand and supply.	Understand the meaning of AD and AS.
	Components of AD will be taken up using equations and diagrams (consumption function, saving function and Investment function).	Students will be able to write equations of AD and AS and draw the curves for consumption saving and investment.
		Students will be able to do numerical based on APC, APS, MPC, MPS .
	Derivation of consumption curve from saving curve will be explained by drawing it on black board	Students will be able to locate an equilibrium level of income by the S and I approach and the AD and AS approach.
		Numerically calculate Y, C, I, S Multiplier and locate all on the diagram also.
	National Income level and Equilibrium level of income through saving and Investment and AD and AS approach will be explained using schedule and diagram	Enable the students to locate inflationary and deflationary gap in the diagram.

	Investment Multiplier will be explained by taking numerical example and diagram	Chalk out the measures to rectify the situation of inflationary and deflationary gap.
		Calculate mathematically Equilibrium level of income, consumption and Investment and saving.
	Excess Demand/Inflationary gap and Deficient Demand/Deflationary gap will be explained using diagram	
	Numericals on equilibrium level of Income consumption, saving and investment will be explained on the black board	

MONTH: DECEMBER,2023 **NO OF WORKING DAYS:22**

TOPIC	METHODOLOGY	LEARNING OUTCOMES
Revision for Preboard 1 and final check of project	Sample papers specially CBSE sample papers will be taken in revision.	Students get lot of practice chapter wise to revise.

work.		

MONTH: JANUARY,2024 NO OF WORKING DAYS:18

Sample papers will be discussed, and practice will be given for numerical questions.

PREBOARD II will be conducted in main subject.

MONTH: FEBUARY,2024. NO OF WORKING DAYS:15

CBSE practical's XII and Board Exams will be conducted.

PROJECTED CONTENT	***METHODOLOGY***	***LEARNING OUTCOMES***

CURRICULUM OF ENGLISH

CLASS

XII

2023-24

General Objective: To lead the learners to substantiate an understanding of the connection between writing and thinking and

demonstrate effectiveness in using verbal and non-verbal language appropriate to the goal.

- Improve communication between student – student and teacher-student.

- To develop academic skills.

- To enhance the students' knowledge of subject content.

- To read literature with an appreciation for inter-relatedness of plot, character, theme and style.

- Form an appreciation for all genres of literature.

- To encourage goal- oriented teamwork.

APRIL (18 DAYS)		
The Last Lesson (Flamingo)	The session would begin with an interaction on homework and the way you treat it. (Student-Teacher Interaction). The learners would interpret the title of the lesson. The background knowledge of the author and his works would be given. The facilitator would develop the chain of events, with TEXT sequence or discourse/spoken with reference to the educational and personal domains. Difficult words and terms would be discussed. The prose will be explained. All possible questions and answers would be discussed and assigned.	They would develop their optimistic attitude towards life amidst many struggles. They would be able to familiarize themselves with specific background information of Alphonse Daudet/ history of France. They would be able to make connections between similar situations in different storylines/life experiences like Indians under British imperialism.
LOST SPRING (Flamingo)	The session would begin with an audio –video presentation on the plight of poor children. The learners would be asked to interpret the title of the lesson relating it to the presentation. The background of the author would be given. The theme and story line would be explained. The teacher would develop the format in sequence or discourse spoken with reference to the ethical/global and personal domains.	Learners will be able to sensitize the learners to the problem of child labour. They would be able to identify the problem, consider the options, weigh the pros and cons of each option, and reach a decision/opinion/solution. They would enhance their analytical skills. They would be able to uncover the motives of the poor parents/policemen/ Industrialists/middlemen. They would be able to absorb didactics and inspiration. They would strengthen their integrated skills.
My Mother at sixty-six (Flamingo)	Pre-reading activity would be the first step wherein the students would delve deep into the title of the poem and make an interpretation of the title as it indicates the subject and theme. (student- teacher interaction) They would compare the poem with the poem A Photograph. The background of the poet	The students would be able to grasp the theme and meaning of the poem. They would be able to read the poem with proper tone and rhyme and develop an interest in poetry. Their vocabulary would be strengthened. Their analysing skills would be enhanced.

	would be discussed. The poem would be read aloud with proper intonation rhyme and rhythm. Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem. The poem would be explained covering the phrases, sentences and discourse as well as their structuring. Silent reading of the poem by the students within five minutes and listing the difficult terms. The figures of speech and rhyme scheme would be discussed.	
WRITING SKILLS ***Notice Writing***	Warm up session: Learners would share their knowledge on the importance of a notice (Student- Teacher interaction) The Learners would be asked to speak about a notice they received and they remember still. The teacher would explain what a notice is and its purpose. The standard format of notice writing would be shown in the class. The teacher would discuss in detail what a notice should contain. The wide range of themes and objectives covered by notice would be discussed with examples Special note on- 5 W's What Where When Who Whom	Students will be able to analyse any NOTICE shown to them on the basis of the knowledge imparted. They will be able to frame notice about any event. They will be able to identify important information in any given notice. Students will be able to use appropriate style and format to write a NOTICE effectively.
MAY **16 DAYS**		
The Third Level	The session would start with an interaction on How the protagonist of the story likes to escape from the reality of life? The title will be discussed	At the end of the chapter students will be able to understand that in spite of running from the responsibilities one should

		know to face and that too bravely
TIGER KING (Vistas)	The session would start with a short video on save tiger. The learners would interpret the title of the story and relate it to the video shown. The background of the author would be given. The story would be read aloud. The theme and underlying meaning would be discussed. A comparative study between Mrs Packletide's Tiger and the lesson. Difficult words would be listed and explained. The moral of the story would be discussed.	The Learners will be able to uncover motives, absorb didactics. They would be able to familiarize with specific Royal Indian background information of the author/history of cruel insensitive kings who found pleasure in hunting and killing innocent animals. They would understand the importance of becoming sincere and trustworthy in thought and action. They would be understanding, responsible, tolerant and have respect for class identities – democratic citizenship.
KEEPING QUIET (Flamingo)	The session would begin with the study of silence. The teacher would ask the learners to maintain silence and the study the sounds of silence for one minute. The learners would discuss on the sounds and thoughts of silence and relate to the title of the poem. The background of the author would be given. The poem would be read aloud and discussed. Difficult words would be listed out and discussed. The synopsis would be shown with the help of a PPT.	The learners would be able to understand the need of the hour to maintain peace and cut out the clamour and bloodshed, correlating it with contemporary background and personal experiences. They would be able to up threat and gentle heeding with the predictable loss of the world. (global domain)
WRITING SKILLS Article Writing	The session would start with a pre-writing activity to create an interest towards writing. The teacher would define what an article is and discuss the purpose of article writing. The different styles, subjects, purpose of article writing would be discussed. The teacher would explain the technique of accumulating ideas, focussing on ideas and facts, planning, organizing, evaluating, structuring and editing. They would be taught	The students would develop an interest towards writing. Their planning and organizing techniques would be enhanced. They would be able to research on any subject and derive information from facts and present him in the form of a written piece. Their creative writing would be analysed. The interpreting and evaluative skills would be strengthened.

	the importance and way of producing a finished piece of work with examples. The requirements of the content, beginning, body and end would be focussed.	
JULY 22 DAYS		
Journey to the end of the Earth	The teacher will use enquiry method for this chapter. The teacher will ask her students to gather the data of various types and sources of pollution and what percentage do they think that source generated. The students will also be made to think about how they contribute in the pollution of the earth and its elements	The students will be made to realise that they have a responsibility not just as students but also as global citizens to protect the environment by doing their part in the protection of the nature
Thing of Beauty	To enable the students 1. To understand the critical appreciation of the poem based on rhyme, content, theme and genre 2. Identify the figure of speech used in the poem	Inculcate values like peace, contentment, respect, care and concern. Understand that beautiful things are worth treasuring as they leave an everlasting impression on the minds of people.
WRITING SKILLS (Letter to Editor)	The format, rules, technique would be discussed with examples. The usage of language would be taught and students would be assigned written tasks.	They would develop an interest towards writing thus enhancing their writing skills. Their thinking skills would be enhanced.
DEEP WATER	The session would begin with an interactive session wherein the teacher would ask the students to discuss about their phobias as related to the theme of the lesson. The prose would be read aloud. Difficult words would be discussed. The story outline, theme and values would be discussed by the teacher through a Power Pont Presentation The students would be grouped into six for the varied	The learners would unfold their logical thinking skills. Their vocabulary will be enriched. They would be able to organize their thoughts, research work, compile and present in an economic writing style. The creative writing skills would be enhanced. They would develop their listening, speaking, questioning and presentation skills.

	activities, discussions and presentations. The students would be grouped into six for the varied activities, discussions and presentations.	They would strengthen their decision making skills.
AUGUST 23 DAYS		
The Enemy (VISTAS)	The session would start with an interactive session on the services of a doctor. The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and explained. The historical background of the story and war related issues would be discussed. Difficult words would be listed out and discussed.	The learners will be able to familiarize themselves with specific background of political enmity. They will be able to identify and make connections between similar situations in own life experiences where our prejudices often hinder our human compassion and empathy for a political enemy. They will be able to understand the significance of professional ethics and social obligation in sensitive time
LETTER WRITING: Job application	The teacher would stress the students on the importance of application – they may lead to an interview and discuss the content of a letter of application and note the responses on the blackboard/or discuss through a PPT.	The learners will be able to understand the nature and purpose of a letter of application. They will be able to examine a variety of letters to determine best layout, content and style. They will be able to develop and produce their own letter of application and prepare cover letter and attached bio data.
Rattrap	The lesson will be introduced with warm up questions like how many of you have watched TOM AND JERRY show? 1. Have you ever seen tom caught in a rattrap? 2. Are you tempted by anything in life or have you fallen for any of the temptation that made you do even wrong? A detailed explanation of the	The students will come to the realization that humour is the spice of life, and will develop the attitude of compassion, and empathy for others in pain and suffering.

	chapter will be provided to the students.	
SEPTEMBER 23 DAYS		
Indigo	The lesson will be introduced with a brief introduction of Mahatma Gandhi and his contributions This lesson based on the leadership shown by Mahatma Gandhi to secure justice for oppressed people through convincing argumentation and negotiation. It also mentions the contributions made by the anonymous Indians to the freedom movement	To enable the students to Imbibe Empathy confidence, self respect and self Reliance Importance of decision making in adverse circumstances.
Recapitulation of Writing and literature for HALF YEARLY EXAMINATION		
OCTOBER 20 DAYS		
Poets and Pancakes	The lesson will be introduced through discussion approach. It will be based on the technological advancements in the cinematic world that the students have observed in the recent passage of time. Then a thorough explanation will be provided to the students.	The students will become more aware of the technological advancements that have taken place when it comes to the cinematic sphere
The Interview	The chapter will be introduced through deductive approach. The students will be asked if they have seen any interview or have given one? Then they will be asked who all are involved in the conduction of an interview? Following the questioning the chapter will be opened for learning-teaching process	The students will be able to critically analyse the elements or components of an interview. They will also be able to develop their analytical and interpretational skills. They will also accustom themselves with the art of questioning.
EXAMINATION		
NOVEMBER 19 DAYS		
Going Places	The chapter will be introduced with an activity. The students will be asked to make paper planes and write their dreams on them, and they will be asked if they can guarantee that their dream will come true? The teacher will ask about how they feel when they think about their dream. He/she will also ask the students who do they think they must make their idol in order to achieve their dream?	The students will be able to infer that there is an invisible line that separates the dream and the real wold. The reality is far more brutal than the 'sweet dreams' that we see and meet

On the face of it	The lesson will be explained by telling the students about the pain and isolation the physically handicapped go through. It highlights the callousness of the society towards them which affects them adversely and become even more withdrawn.	To enable the students to 1. Inculcate values like Empathy, care and concern 2. Understand the theme that appearances are deceptive and most often we go on dealing with our impressions without caring to know them actually.
DECEMBER 22 DAYS		
MEMORIES OF CHILDHOOD (Flamingo)	The session would begin with a presentation on the great personalities who fought against social injustice. The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed.	The learners would be able to sensitize themselves to the issues of estranged cultural ties. They will be able to make connections between similar situations in different storylines/life experiences. They will be able to initiate the role of an ambassador in the world ridden with racial and class differences. They would be able to recognize the universal/global theme of inequality.
AUNT JENNIFER'S TIGERS (Flamingo)	Pre-reading activity would be the first step wherein the students would delve deep into the title of the poem. The learners would make an interpretation of the title as it indicates the subject and theme. The background of the poet. would be discussed. The poem would be read aloud with proper intonation rhyme and rhythm. Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem. The poem would be explained covering the phrases, sentences and discourse as well as their structuring. Silent	The learners will be able to facilitate making connections between similar situations in different storylines/life experiences. They will be able to empathize with Aunt Jennifer's problems and seek resolution. They will be able to think and produce spontaneous, fluid and expression in poetic texts to convey a social change. They would discern prevailing inequalities in various guises.

	reading of the poem by the students within five minutes and listing the difficult terms. The figure of speech and rhyme scheme would be discussed.	
A roadside stand	The poem will be introduced with the usage of comparison technique. A hypothetical situation will be given to the students in which they will be given a series of choices to choose from that are contradictory in nature. Then a short discussion will be conducted to understand both sides of the choices.	The students will be able to realise the invisible line that divides the rich and the poor and also how poor try their level best to uplift themselves but they find themselves back to square one due to one reason or another.
JANUARY (18 DAYS)		
REVISION AND PREPARATION for PRE BOARD		
FEBRUARY 15 DAYS		
RECAPITULATION and PREPARATION FOR FINAL ASSESSMENT		

Curriculum for the

Academic Year

2023-2024

Subject: Music Vocal

Class: XII

Learning Objectives:-

1) Learn Vocal Music
2) Short and Long Definitions in Hindi and English

CONTENT	METHODOLOGY	LEARNING OUTCOME

April:- 28 Periods; Brief study of the following definitions. Alankar, Kan, Meend, Khatka, etc. Practical:- Raag Bharav Dhrut Khyal	Lecture Method and given some short questions. Memorizing the Raag.	Students learned short definitions. Developing singing skills
May:- 26 Periods; Long definitions and introduction to Raag Bharav, Malkauns, Raag Bageshri. Practical:- Aalap and Taan in Raag Bharav	Lecture Method and write Raag Bharav notation. Aalap and Taan in Raag Bharav.	Students know how to write notation of Raag. Honing the singing skills.
July:- 25 Period; Historical development of Time theory of Raagas Practical:- Rupak Taal with hand beats.	Lecture Method. All Taalas with hand beats – Thah, Dugun, Chaugun.	Students learned how to divide time of Raagas Honing the Taal skills.
August:- 22 Periods; Detail study of Sangeet Ratnakar and Sangeet Parijaat Practical:- Raag Malkauns and Raag Bageshri.	Lecture Method. Write complete descriptions and their importance. Taan and Aalap.	Students came to know the importance of these books. Developing rythematic sense.

September:- 14 Periods; Life sketch and contribution of musicians. Practical:- Tarana or Dhamaar	Lecture Method. Students wrote life sketches of vocalists and their works. Laykari – Thah, Dugun and Chaugun.	Students collected their photographs and learned how to improve classical music. Developing the sense of Sur and Taal.
October:- 21 Periods; Taalas along with Taal notations. Practical:- Dhamaar Taal with Laykari.	Lecture Method. Write Taala notations. Learn Taal with hand beats.	Students will know how to write Laykari. Developing the sense of Taal Beats.
November:- 20 Periods; Tuning of Tanpura. Practical:- Playing of Tanpura.	Lecture and Demo Method.	Students learned the basic knowledge of Classical Music by Tanpura.
December:- 25 Periods; Recognizing of Raagas. Practical: Identification of Raagas.	Lecture and Demo Method.	Students will be able recognize the Raagas and their Swar.
January:- 16 Periods; Revision of full syllabus	More practise for perfection.	Students prepared themselves for theory and practical examination.
February:- 15 Periods; Preparations for Practical and Theory Examination.	More practise for perfection.	Garnished the Vocal Music subject.

MONTHWISE CURRICULUM OF PHYSICAL EDUCATION

CLASS XII

SESSION:2023-24

(APRIL – MAY)

1. (Unit 1) Management of Sporting Events

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
5) Community sports programs (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity

2. (Unit 2) Children & Women in Sports

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)
5) Female athlete triad (osteoporosis, amenorrhea, eating disorders

(JULY – AUGUST)

3. (Unit 4) Physical Education and Sports for CWSN (Children with Special Needs - Divyang)

1) Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics)
2) Concept of Classification and Division 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.

4. (Unit 5) Sports & Nutrition

1) Concept of a balanced diet and nutrition
2) Macro and Micro Nutrients: Food sources & functions
3) Nutritive & Non-Nutritive Components of Diet
4) Eating for Weight Control – A Healthy Weight, The Pitfalls of Dieting, Food Intolerance, and Food Myths
5) Importance of Diet in Sports-Pre, During and Post competition requirements.

5. (Unit 6) 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)
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

(SEPTEMBER-OCTOBER)

6. (Unit 7) 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 age
5) Sports injuries: Classification (Soft Tissue Injuries - Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)

7. (Unit 8) 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

8. (Unit 9) Psychology and Sports

1) Personality; its definition & types (Jung Classification & Big Five Theory)
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

(NOVEMBER)

9. (Unit 3) Yoga as Preventive measure for Lifestyle Disease

1) Obesity: Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama.
2) Diabetes: Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana,Bh ujangasana, Shalabhasana, Dhanurasana, Supta - vajarasana, Paschimottanasan -a, Ardha - Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati.
3) Asthma: Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansan a, 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, Urdhawahastootansa na, ArdhChakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujandgasana, Gomukhasana, Bhadrasana, Makarasana, NadiShodhana pranayama.

10. (Unit 10) Training in Sports

1) Concept of Talent Identification and Talent Development in Sports
2) Introduction to Sports Training Cycle – Micro, 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

CURRICULAM: 2023-24

SUBJECT: PHYSICS

CLASS: XII

Learning objectives:

1. Strengthen the concepts developed at the secondary stage to provide frim foundation for further learning in the subject.
2. Expose the learner to different processes used in physics related industrial and technological application.
3. Develop process skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.
4. Promote problem solving abilities and creating thinking in learners .
5. Develop conceptual competence in learners and make realize and appreciate the interface of physics with other disciplines.

MONTHS: APRIL

NO. OF WORKING DAYS: 18

CHAPTER	METHODOLOGY	LEARNING OUTCOME

UNIT-1 electrostatics	Lecture method/Enquiry	Would be able to familiar with electric charge and coulombs law and they would be able to calculate electrostatic force between static charges. Would able to define electric field and understand its significance and able to calculate electric field due to point charges/group of point charges/electric dipole would be able to visualize electric field lines due to point charges/dipole/uniform field. Would able to define electric flux and its significance . Would able to understand gauss law and apply it to calculate electric field due to thin charged sheet/due to charge distributed over a wire/electric field inside/outside hollow sphere. Can understand the concept of electric potential and its realtion

		with electric field. Would able to calculate electric potential due to point charge/group of charges/electric dipole. Would able to define capacitance of capacitor and analyze energy stored in parallel plate capacitor. Would able to analyze series/parallel combination of capacitor and energy stored in capacitor able to understand dielectric and its polarization and its effect on capacitance of parallel plate capacitor. Would able to solve numerical problem on above concepts.

MONTHS: MAY

NO. OF WORKING DAYS: 16

CHAPTER	METHODOLOGY	LEARNING OUTCAME
UNIT-2 current electricity	Lecture method/Enquiry/demonstration	Would be able to define electric current and can distinguish between current and electricity understand why current is scalar quantity. Would be able to define drift velocity, mobility and able to establish relation between current and drift velocity. Would able to understand effect of temperature

		on drift velocity. Would able to interpret ohms

		law and able to distinguish between resistance and resistivity. Would able to differentiate between terminal voltage and EMF of cell and able to understand internal resistance of cell and its dependence on various factors. Would able to understand krichoffs law and use it to obtain balanced condition of wheat stone bridge. Would able to measure unknown resistance using meter bridge. Would able to Develop problems solving skills on above said concepts.

MONTHS: JULY

NO. OF WORKING DAYS: 22

CHAPTER	METHODOLOGY	LEARNING OUTCAME
UNIT-3 magnetic effect of current and magnetism	Lecture method/interactive	Would able to understand concept of magnetic field and conclusion of orested experiment. Can state biot-savert law and apply it find

		magnetic

		field due to current carrying circular loop. Would able to state amperes law and use it to find magnetic fied due to infinitely lonf current carrying wire/solenoid/toroid. Would able to find Lorenz force/force on moving charge in uniform magnetic field. Would able to understand working of cyclotron and distinguish the role of electric field/magnetic field in working cyclotron. Would able to find force on current carrying conductor in uniform magnetic filed, force between two parallel current carrying long conductors and able to define one ampere. Would able to find torque experienced by current loop in uniform magnetic filed. Would able to understand principle working of moving coil galvanometer able to define current sensitivity, voltage sensitivity of moving coil galvanometer and conversion of MCG into voltmeter/ammeter. Would able to understand current loop as

		magnetic dipole, its magnetic dipole moment, magnetic dipole moment of revolving electron, magnetic field intensity

		due to bar magnet along its axis line/equation line., torque on magnetic dipole in uniform magnetic field, bar magnet as equivalent solenoid, magnetic field lines, earth's magnetic field and magnetic elements. Would able to distinguish between dai, para and ferro magnetic substances. Would able to select material/substance suitable for electromagnet/paramagnet Develop solving skills on above said concepts/topics.

MONTHS: AUGUST

NO. OF WORKING DAYS: 23

CHAPTER	METHODOLOGY	LEARNING OUTCAME
UNIT-4 EMI and AC	Lecture method/interactive/demonstration/ PPT	Would able to understand the concept of magnetic flux, electro magnetic induction, farday's law, induced current, lenz law and eddy current. Would able to demonstrate self induction/ mutual induction. Would able to understand concept of AC and distinguish between

		AC and DC. Would able find relation between peak value of current and rms value of current. Would able to understand series LCR circuit, resonance, impendence, reactance power factor of AC circuits, wattless current. Would able to understand working of AC generator and transformer. Devlope problem solving skills on above topics

MONTHS: SEPTEMBER
NO. OF WORKING DAYS: 23

CHAPTER	METHODOLOGY	LEARNING OUTCAME

Unit 5 Electromagnetic waves Revision for periodic II	Lecture/inquiry/Class test/group discussion.	Would able to understand basic idea of displacement current,EM waves,production and their characteristics. Would able to understand electromagnetic spectrum and uses/production of various parts of electromagnetic spectrum. Would able to develop problem solving skills.

MONTHS: OCTOBER

NO. OF WORKING DAYS: 20

CHAPTER	METHODOLOGY	LEARNING OUTCAME
UNIT-6 Optics	Lecture method/interactive	Would able to define wave front, would able to understand Huygen principle and able to use it to verify laws of reflection and refractions would able understand interference of light, young double slit experiment fringes fringe width coherent sources of light diffraction due to single slit central maxima Would able to distinguish between interference of light and

		diffraction of light. Would able to understand concept of reflection of light, spherical mirror, concave mirror, convex mirror, focus, focal length, radius of curvature, mirror formula, linear magnification. Would able to understand the refraction of light and distinguish between refraction and reflection. Can interpret snell's law, understand refraction index. Would able to demonstrate total internal reflection and observe it's applications in daily life. Would able to understand refraction from spherical refracting surfaces and able to establish lens maker formula and lens formula and linear magnification. Would able to observe combination of lenses in daily life and understand power of lens. Would able to understand concepts of refraction of light and dispersion through prism. Would able to understand working/magnifying power of telescope/microscope and can distinguish between them. Would able to develop problem solving skills on above topics/concepts

MONTHS: NOVEMBER

NO. OF WORKING DAYS: 19

CHAPTER	METHODOLOGY	LEARNING OUTCAME

UNIT-7 Dual nature of radiation and matter Unit 8. Atoms and Nuclei Unit 9 Electronic Devices.	Lecture method/demonstration/PPT	Would able to understand dual nature, photoelectric effect, Einstein photoelectric equation and particle nature of light. Can state/understand de Broglie hypothesis, de Broglie Waves. Would able to understand/interpret Rutherford and particle experiment and its conclusion. Would able to understand the bhor's atom model, energy level and hydrogen spectrum and able to calculate wavelength corresponding to various series like lyman paschan ets. Would able to understand the composition size of nuclei, radioactivity. Differentiate between alpha beta gamma decay and can state radioactivity decay law, half life, decay constant. Would able to interpret mass defect, binding energy per nucleon and its variation with mass number, bonding energy and mass energy graph. Distinguish between nuclear

		fission/fusion. Develop problem solving skills on above said concepts/topics. Would able to distinguish conductor, insulator and semi conductor on the basis of energy band diagram. Would able to distinguish between n –type and p-type semi conductor and understand formation PN junction. Would able to forward bias and reverse bias of PN junction and understand their working. Able to draw PI characteristics of PN junction diod in forward biased and reverse biased. Would able to understand the working of PN junction diode as half wave rectifier and full wave rectifier. Would able to understand the working of jener diode, LED, solar cell, etc. Would able to develop problem solving skills on above topics/concepts

MONTHS: DECEMBER
NO. OF WORKING DAYS: 26

CHAPTER	METHODOLOGY	LEARNING OUTCAME
Revision for preboard 1	Test /group discussion	Performance enhancement

MONTHS: JANUARY
NO. OF WORKING DAYS: 18

CHAPTER	METHODOLOGY	LEARNING OUTCAME
Revision for preboard 2	Test /group discussion	Performance enhancement

CURRICULUM (2023-24)

Subject : Political Science

Class : XII

Objectives :

Contemporary World Politics (PART-A)

- Enables an understanding of the nature of political interactions amongst the sovereign states in the World.
- Trace the key political events and processes in the post-cold war era.
- Analyze the all-encompassing impact of various global institutions, processes, and events.
- Promote international understanding and respect for humanity.

. Politics in India since Independence(PART-B)

- Understand and analyze constitutional institutions and their working in the post-independence era.
- Appreciate the contribution of political leaders in Nation Building.
- Develop the capacity to link Government structure, processes, and their policies with contemporary political realities.
- Acquaint the students to the changing trends and developments in India

Month : April 2023

No. of working days : 18

Chapter No. and Name	**METHODOLOGY**	**LEARNING OUTCOMES**
PART-A **Chap1. The End of Bipolarity** Topics to be focused: a) The Soviet System b) Gorbachev and the disintegration c) Causes and Consequences of disintegration of Soviet Union d) Shock Therapy and its Consequences e) New entities in world politics • Russia • Balkan States • Central Asian States f) India's relations with Russia and other post-communist countries	• Group Discussion: Causes and consequences of disintegration of USSR • Documentaries-Past & present situations in USSR/Post Soviet Republics • Analysis of relevant newspaper articles	After completion of the chapter, Students will be able to: • Identify the basic features of the Soviet System. • Discuss the background and outcome of disintegration of the Soviet Union. • Examine the consequences of unipolar world • Assess the features of Shock Therapy • Probe into the recent happenings in the Post-Communist Countries. • Trace the developments between India& Russia
PART-B **Chap-1 Challenges of Nation Building** Topics to be focused: a) Challenges for the new Nation.	• Documentaries • Discussion: Causes and consequences of Partition • Live Experiences-Meeting People who	After completion of the chapter, Students will be able to: • Analyse the challenges which Independent India

• Three Challenges. b) Partition: Displacement and Rehabilitation. • Consequences of Partition. c) Integration of Princely States. • The problem • Government's approach • Hyderabad • Manipur d) Reorganisation of States.	lived through this period. • Cartoon Interpretation • Map Activity	faced. • Describe the factors that led to the partition of India. • Explain the circumstances under which different princely states signed the Instrument of Accession. • Assess how language became the basis of reorganisation of the states. • Evaluate the role played by leaders in Nation Building

Month : May 2023

No. of working days : 16

PART-A **<u>Chap. 2</u> Contemporary Centres of Power** Topics to be focused: a) European Union b) Association of Southeast Asian Nations c) Rise of China as an economic power d) Japan and South Korea as emerging powers .	• Discussion: Importance on regional organisations • Comparative study: Economic growth of China, Japan and South Korea. • Use of timeline Inquiry based learning Map activity • Interpretation of cartoons/ Pictures/ Newspaper • clippings	After completion of the chapter, Students will be able to: • Compare and contrast the importance of European Union and ASEAN. • Evaluate the extent of rise of Chinese economy and its impact on world politics. • Summarize India's relations with China.
<u>PART-B</u> **<u>Chap.2</u> Era of One-Party Dominance** Topics to be focused: a) Challenge of building democracy. b) Congress dominance in the first three general elect ions. • Nature of Congress dominance • Congress as social and ideological coalition. • Tolerance and	• Group Discussion: Recent changes in the electoral process • Comparative analysis: Ideology of different political parties • Maps/Cartoons • Question strategy • Quiz	After completion of the chapter, Students will be able to: • Appreciate the sustenance of democratic politics in the country Evaluate the electoral politics post-Independence • Assess the dominance of the Indian National Congress from 1952 to 1967. • Evaluate the role of Opposition parties.

management of Factions c) Emergence of opposition parties.		

Month : July 2023

No. of working days : 22

PART-A **Chap-3** Contemporary South Asia Topics to be focused: a) Military and Democracy in Pakistan and Bangladesh b) Monarchy and Democracy in Nepal c) Ethnic Conflict and Democracy in Sri Lanka d) India-Pakistan Conflicts e) India and its Neighbours f) Peace and Cooperation	• Map activity • Comparative Analysis: Political systems of South Asian countries • Use of Historical data • Interpretation of cartoons/Pictures /Newspaper clippings • Discussion: Current economic crisis in Sri Lanka and Pakistan • Quiz	After completion of the chapter, Students will be able to: • Identify & locate the seven countries of the South Asian region. • Appreciate the mixed record of democracy in the South Asian region. • Examine the role of Political leaders • Reflect upon the causes of various conflicts and movements in this region. • Justify the creation of SAARC • Understand the involvement of US and China in South Asia.
PART-A **Chap-4 International Organizations** Topics to be focused: a) Meaning and importance of International Organisations b) Evolution of the UN c) Structure and function of International Organisations d) Principal Organs of UN e) Reform of the UN after Cold War f) Reform of Structures, Processes and Jurisdiction of the UN g) India and the UN Reforms h) Key Agencies: IMF, World Bank, WTO, ILO, IAEA. i) NGO: Amnesty International, Human Rights Watch. j) Implications and Future of	• Discussion and debate: Necessary reforms of the UN • Interpretation of cartoons /Newspaper clippings • Quiz • Model United Nations	After completion of the chapter, Students will be able to: • Define International Organization • Appreciate the role of United Nations and its agencies • Reflect on the events taking place in the post-cold war era • Understand the need for reforms in the United Nations

International Organizations		
PART-B **Chap.3 Politics of Planned Development** Topics to be focused: a) Political contestation. • Ideas of Development. • Planning • Planning Commission b)The Early Initiatives • The First Five Year Plan. • Rapid Industrialisation.	• Debate and Discussion: First three 5-year plans. • Comparative analysis: The Left and Right ideology	After completion of the chapter, Students will be able to: • Identify the varied option considered by the government to balance growth and socio-economic justice. • Know the difference between Left and Right Ideology • Understand the need for the formation of the Planning Commission. • Appreciate the need for strategic long-term development programme and policies.

Month : August 2023

No. of working days : 23

PART -B **Chap.4. India's External Relations** Topics to be focused: a) International Context b) The Policy of Non-Alignment. • Nehru's role • Distance from two camps. • Afro Asian Unity c) Peace and conflict with China • The Chinese Invasion1962 • War and Peace with Pakistan • Bangladesh War 1971 d) India's Nuclear Policy.	• Presentation: NAM founders, objectives, principles and its relevance in contemporary world politics • Group discussion: India's relations with China and Pakistan (past, present and future) • Debate: India's stand on shifting alliances • Research and Report Writing	After completion of the chapter, Students will be able to: • Recognise the significance of NAM • Interpret, compare and contrast multi-lateral aspects of Indo-China relationship • Demonstrate knowledge on Indo-Pak wars • Appreciate the steps taken by Indian government to develop military capacity • Reflect and introspect on the choices that the country must consider for the cause of development and peace building

PART -B **Chap-5 Challenges to and Restoration of the Congress System** Topics to be focused: a) Challenge of Political Succession • From Nehru to Shastri • From Shastri to Indira Gandhi b) Fourth General Election 1967 • Context of the Election. • Non Congressism • Electoral Verdict • Coalitions • Defections c) Split in the Congress • Indira vs the Syndicate • Presidential Election 1969 d) The 1971 Election and Restoration of Congress • The outcome and after • Restoration?	• Use of timeline • Comparative analysis: Political Succession • Group discussion: Changing electoral performance of the congress Interpretation of cartoons • Map Activity	After completion of the chapter, Students will be able to: • Understand the challenges of political succession after Nehru. • Evaluate the opposition unity and the Congress split as a challenge to Congress dominance. • Compare and contrast the new Congress and the old Congress. • Summarize the initiatives taken by Indira Gandhi to overcome the challenges faced by her • Analyze the process of restoration of the Congress system

Month : September 2023

No. of working days : 23

PART-A **Chap- 5** Security in the Contemporary World Topics to be focused: a) Meaning and Type of Security. b) Traditional concept of security c) Non-tradition notions of Security. d) New Sources of Threats e) Cooperative Security f) India's Security strategy	• Discussions and debates: New sources of threat • Comparative analysis: Security concerns of different countries Interpretation of cartoons/Pictures • Collaborative concept mapping: India's initiatives and policies towards security.	After completion of the chapter, Students will be able to: • Recognize the causes of security threats • Enhance analytical skills to provide solutions to security concerns. • Develop critical thinking about the role of various stakeholders in ensuring security today.

Month : October 2023

No. of working days : 20

<u>PART- A</u> **<u>Chap.6.</u> Environment and Natural Resources** Topics to be focused: a) Environmental Concerns	• Presentation: Environmental issues • Recapitulation • Debate and discussion: Indigenous communities of the world and their concerns	After completion of the chapter, Students will be able to: • Enlist and explain the facts related to global environmental

b) Global Commons c) Common but differentiated Responsibilities d) India's Stand on Environment Issues e) Environmental Movements f) Resource Geopolitics g) Rights of Indigenous peoples	• Newspaper activity to inculcate concern, awareness and environmental morality	issues • Recognize and understand the need to conserve critical resources • Demonstrate knowledge and appreciation towards India's responsibility in protecting environment • Realize the need to conserve resources and exhibit responsibility towards prudential use to facilitate sustainable development • Know about the nature of concerns of indigenous communities and understand how the governments of different countries respond to their plea
PART-B **Chap.6 The Crisis of Democratic Order** Topics to be focused: a) Background to Emergency. • Economic Context. • Gujarat and Bihar Movements • Conflict with Judiciary b) Declaration of Emergency • Crisis and response • Consequences c) Lessons of the Emergency. d) d)Politics after Emergency. • Lok Sabha Elections 1977 • Janata Government • Legacy	• Group discussion: Based on Newspaper articles and other media information with respect to emergency • Quiz • CartoonInterpretation • Map Activity	After completion of the chapter, Students will be able to: • Understand the causes and consequences of Emergency • Examine the lessons of Emergency • Evaluate the rule of Janata Government
PART-B	• Group discussion: Demands of	After completion

<u>Chap.</u> 7 Regional Aspirations Topics to be focused: a) Region and the Nation • Indian Approach • Areas of Tension • Jammu and Kashmir • Roots of the Problem • External and Internal disputes • Politics since 1948 • Insurgency and After • 2022 and Beyond b) Punjab • Political Context • Cycle of Violence • Road to Peace c) The Northeast • Demand for autonomy • Secessionist Movements • Movements against outsiders • Assam and National	Autonomy in different parts of the country. • Comparative analysis: Government's response to regional aspirations • Quiz	of the chapter, Students will be able to: • Discuss the implications of regional demands. • Analyse the importance of integrity in India. • Appreciate the initiatives taken by the government in dealing with regional aspirations

Month : November 2023

No. of working days : 19

PART-A **Chap. 7 Globalisation** Topics to be focused: a) Concept of globalization b) Causes and Consequences of globalization c) India and globalization d) Resistance to globalization e) India and resistance to globalisation	• Group discussion: Positive and negative impact of globalization. • Interpretation of Cartoons • Question strategy	After completion of the chapter, Students will be able to: • Appreciate the significance of Globalization • Elucidate the political, economic, and cultural dimensions of Globalisation. • Critically evaluate the impact of globalisation on India • Draw attention to resistance movements to Globalisation and envisage its future trends.
PART B **Chap. 8 Recent Developments in Indian Politics** Topics to be focused a) Context of 1990s b) Era of Coalition	• Comparative analysis: Different developments taking place in present scenario with that of twentieth century. • Timeline Interpretation of	After completion of the chapter, Students will be able to: • Understand momentous changes taking place in the nation since 1989 • Trace the rise and growth of BJP

• Alliance Politics c) Political rise if the Backward Classes • Mandal Implemented • Political Fallouts d) Communalism, Secularism and Democracy. • Ayodhya Dispute • Demolition and after e) Emergence of New Consensus f) Lok Sabha Elections 2004 g) Growing Consensus	Cartoons/Caricatures • Quiz • Reflective Enquiry	. • Identify the areas of growing consensus

Month : December 2023

No. of working days : 22

Practice from sample papers		

Month : January 2024

No. of working days : 18

Practice from old CBSE board papers	Pre-board exam	

Month : February 2024

No. of working days : 15

Discussion of doubts		

CURRICULUM (041) : 2023-24

SUBJECT : MATHEMATICS

CLASS : XII

Objectives :

The aims of teaching and learning mathematics are to encourage and enable students to:

- **To acquire knowledge and critical understanding, particularly by way of a motivation and visualization, of basic concepts, terms, principles, symbols and mastery of underlying processes and skills.**
- **To feel the flow of reasons while proving a result and solving a problem.**
- **To apply the knowledge and skills acquired to solve problems and where ever possible, by more than one method.**
- **To develop positive attitude to think, analyze and articulate logically.**
- **To develop interest in the subject by participating in related competitions.**
- **To acquaint students with different aspects of Mathematics in daily life.**
- **To develop an interest in students to study Mathematics as a discipline.**
- **To develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.**

Month: APRIL No. of working days : 18

Chapter	Methodology	Learning Outcomes
U NIT II Chapter Matrices	Blackboard-Chalk and lecture method Link the previous knowledge with new concepts. Videos.	Students would be able to concept, notation, order, equality, types of matrices. Addition, multiplication with a scalar. Invertible matrices and proof of Inverse, if exists (here all matrices will have real entries).
U NIT II Chapter Determinants	Blackboard-Chalk and lecture method Link the previous knowledge with new concepts. Videos.	Students would be able to understand the concept of determinant of square matrices upto 3X3 order, minors, cofactors of determinants and their application to find area of triangle. Adjoint and inverse. Consisistency and inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in 2 or 3 variables (having unique solution) using inverse of a matrix

Month: May **No. of working days:16**

Chapter	Methodology	Learning Outcomes
Inverse Trigonometric Functions	**Blackboard-Chalk and lecture method** **Link the previous knowledge with new concepts.** **Videos.**	**Students would be able to understand range, domain, principal value branch, Graphs of inverse trigonometric functions.**

Month: JULY No. of working days:25

Chapter	Methodlology	Learning Outcomes
UNIT I Chapter 1 Relations and Functions	Blackboard-chalk and lecture method Link the previous knowledge with new concepts.	Students would be able to understand types of reflexive, Transitive and equivalence relations. One to one and onto functions.
UNIT V Chapter 12 Linear Programming	Blackboard-chalk and lecture Method Link the previous Knowledge with new concepts. Videos.	Students would be able to understand related terminology such as constraints, Objective functions, Optimisation, graphical method of solutionfor problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (upto three non-trivial constraints).

Month: AUGUST **No. of working days:23**

Chapter	Methodology	Learning Outcomes
U NIT III Chapter 5 Continuity and differentiability	Blackboard-Chalk and lecture method Link the previous knowledge with new concepts. Videos.	Students would be able to understand continuity and differentiability, chain rule derivative of composite functions, derivative of ITFs implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions, derivatives of Second order derivatives.
U NIT III Chapter 6 Applications of Derivatives	Blackboard-Chalk and lecture method Link the previous knowledge with new concepts. Videos.	Students would be able to understand applications of derivatives: rate of change of bodies increasing/decreasing 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).

Month: SEPTEMBER **No. of working days: 14**

Chapter	Methodology	Learning Outcomes
U **NIT III** **Chapter** T **Integrals**	**Blackboard-Chalkandlecture method** **Link the previous knowledge with new concepts.** **Videos.**	**Students would be able to** **understand integrals as the** **reverse of differentiation. Integration of a variety of functions by substitution. by partial fractions and by parts.** **Define integrals as a limit of sum, Fundamental Theorem ofCalculus (without proof).** **Basic properties of definite**

Month: OCTOBER **No. of working days: 20** ”

Chapter	Methodology	Learning Outcomes
U NIT III Chapter 8 Applications of Integrals	Blackboard-Chalkandlecture method Link the previous knowledge with new concepts. Videos.	Studentswouldbeableto Understand the applications in finding the area under curves especially lines. circle's/parabolas/ellipses (in standard form only).
UNIT III Differential equations	Blackboard-Chalkandlecture method Link the previous knowledge with new concepts. Videos.	Definition, order, degree, general and particular solutions of a differential equation . Solution of differential equations by equations by method of separation of variables, solutions of linear differential equation of the type dy/dx + py = q where p and q are constants
UNIT IV Chapter 10 Vectors	Blackboard-Chalkandlecture method Link the previous knowledge with new concepts. Videos.	The students would be able to understand about the vectors, scalars. magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Typesofvectors, position vectorofa point, negative of vector, components ofa vector, additionofvectors, multiplication of a vector with a scalar, position vector of a point dividing alinesegment in a given ratio. Definition, Geometrical interpretation, properties and applications of scalar and vector product of the vectors.

Month: NOVEMBER No. of working days: 20

Chapter	Methodology	Learning Outcomes
UNIT IV Chapter 11 Three Dimensional Geometry	Blackboard-Chalk and lecture method Link the previous knowledge with new concepts. Videos.	Students would be able to understand direction cosines and ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.
UNIT IV Chapter 13 Probability	Blackboard-Chalk and lecture method Link the previous knowledge with new concepts. Videos.	Students would be able to understand Conditional probability, multiplication theorem on probability, independent events total probability. 'Bayes theorem', random variable and its probability distribution, mean of random variable.

*** NOTE: Half yearly exams in third week of September.**

*** December onwards revision for final exam.**