ANNUAL PEDAGOGICAL PLAN (2023-24)

BAL BHARATI PUBLIC SCHOOL, DWARKA

Class - XII

INDEX

S.No.	CONTENT	PAGE No.	
1	English	04	08
2.	Mathematics	09	14
3.	Chemistry	15	22
4.	Physics	23	28
5.	Accountancy	29	38
6.	Business Studies	39	48
7.	Physical Education	49	55
8.	Painting	56	62
9.	Economics	63	66
10.	Comp. Science	67	70
11.	Psychology	71	75
12.	Biology	76	82

ENGLISH

LEARNING OBJECTIVES:

- To foster advanced reading skills, facilitating global comprehension, scanning and skimming of different forms of texts.
- To enhance the writing skills of learners with the ability to structure , draft and edit content.
- To inculcate critical and analytical skills in order to appreciate literary texts.
- To promote listening and speaking skills of learners

TEXTBOOKS:

1. Flamingo
2. Vistas

MONTH	COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING METHOD
April	Flamingo: The Last Lesson, Lost Spring, Deep Water, My Mother at Sixty-six Vistas: The Third Level Reading: Unseen passage for comprehension Writing: Notice	-Learning how patriotism also means love for one's language and other aspects of culture. -To never take one's freedom of expression for granted- a historical perspective -To understand the techniques used by the author. -To enhance vocabulary -To enable them to comprehend the cultural background of the story. --To prepare the students for poetic forms and acquaint them with the figures of speech, rhyme and rhythm - To enable the learners to express their ideas cohesively without any difficulty	➢ To grasp the global meaning of the text, its gist and understand how its theme and sub-themes relate ➢ To develop the advanced skills of reasoning, inferring and analyzing To develop familiarity with the poetic uses of language & poetic devices ➢ To write in a style appropriate for communicative purposes	• Guided Discussion • Problem solving based learning • Peer teaching • Self-assessment • Group Discussion
May	Flamingo: Indigo, The Interview, Aunt Jennifer's Tigers Reading: Unseen passage for comprehension	-Develop the ability to make cross-curricular linkage and gain an understanding of the beginnings of the Civil Disobedience Movement.	To identify the main points and supporting details ➢ To develop the ability to be logically persuasive in defending one's opinion	• Guided Discussion • Problem solving based learning • Peer teaching • Guided Writing

	Writing: Letter Writing	-To guide the students to relate the characteristics of literature to larger cultural and human values. -To facilitate making connections between similar situations in different storylines/life experiences. -To enable the learners to appreciate poetry -to infer the deeper meaning/message -To prepare the students for poetic forms and adept them with the figures of speech, rhyme and rhythm -To develop the ability of appreciation of ideas and criticizing the thinking. -To culminate in the production of an advertisement in one of several various forms of media, intended for a specific demographic. -To enhance their creativity of ideas.	➢ To explore and evaluate features of character, plot, setting, etc. To understand and relate to the historical event. ➢ To develop the advanced skills of reasoning, inferring, and analyzing	• Peer Assessment • Self-assessment
July	Flamingo: Going Places, Keeping Quiet Vistas: The Tiger King Writing: Invitation & Replies	-To facilitate making connections between similar situations in different storylines/life experiences -To make them accept the reality of life and shed away stubbornness. -To be able to accept responsibility and devote their attention - Familiarize about Satire as a literary device- using a combination of humour and sarcasm to fulfil the exercise of criticizing social follies	➢ To develop an understanding of satire and irony. ➢ To appreciate and analyze the plot and characters. ➢ To critically examine a text and comment on different aspects ➢ To appreciative figurative use of language in poetry	• Guided Discussion • Problem solving based learning • Peer teaching • Self-assessment

		-To enable the learners to express their ideas fluently, chronologically and concisely. -To express request fluently and orderly with proper tone and expressions.		
August	Flamingo: The Rattrap Vistas: Journey to the End of the World, The Enemy Reading: Comprehension passage Writing: Report	-To guide the students to relate the characteristics of literature to larger cultural and human values. -To facilitate making connections between similar situations in different storylines/life experiences. -To make the students realize the essential worth of human life and universal brotherhood. -To help them think beyond countries and continents and races and wars. -To develop students' abilities to organise information and construct it into a text. -To develop students' abilities to revise, redraft and improve their writing -To develop students' abilities to construct questions	➢ To grasp the global meaning of the text, its gist and understand how its theme and sub-themes relate ➢ To develop the advanced skills of reasoning, inferring and analyzing To develop familiarity with the poetic uses of language & poetic devices	• Guided Discussion • Problem solving based learning • Peer teaching • Inductive learning • Self-assessment
September	Reading: Comprehension passage, Writing: Article and Speech Flamingo: Poets and Pancakes Vistas: On the Face of It	-To enable the learners to view others by removing the glasses of prejudice, hatred, and dislike. -To adapt reality of life bravely -To build inner strength and look at the brighter sides of life. -To enable the students to respect the generation gap. -To strengthen family bonds enabling them to handle personal choices and happiness.	➢ To understand the format and style of writing bio data and job application ➢ To develop the advanced skills of reasoning, inferring, analyzing, evaluating and creating ➢ To understand human psychology	• Guided Discussion • Problem solving based learning • Peer teaching • Self-assessment

		-To facilitate making connections between similar situations in different storylines/life experiences. -To help learners distinguish different perspectives; analyzing them; drawing conclusion/s --To express ideas harmoniously and chronologically without difficulty in expressions, grammar usage, format usage, relevant vocabulary and mechanics		
October	Flamingo: The Thing Of Beauty Reading: Comprehension passage	-To enable the learners to develop comprehension. -To guide them to have a broader outlook. -To understand the problems related to casteism and racial discrimination. -To appreciate poetry, which makes us realize the importance and relevance of tranquillity and serenity. -To express ideas aesthetically and relevantly with definition in purpose, expressions, grammar usage, format usage, relevant vocabulary.	➢ To use language creatively and imaginatively in text transaction ➢ To develop sensitivity and performance of activities. towards their culture and heritage, aspects of contemporary life and languages in and around the classroom.	• Guided Discussion • Problem solving based learning • Peer teaching • Self-assessment
November	Flamingo: A Roadside Stand Vistas: Memories of Childhood	-To build student understanding of social forms of discrimination such as caste and gender bias - To acquaint learners with poetic techniques and devices - To express ideas logically and coherently. To facilitate making connections between similar situations in different storylines/life experiences.	➢ To impart essential life skills such as empathy and communication skills ➢ To understand a diversity of human experiences	• Guided Discussion • Problem solving based learning • Peer teaching • Self-assessment

December - February	Revision			

DISTRIBUTION (MARK-WISE)- According to the new revised curriculum 2022-23

S.NO.	SECTION	MARKS
1.	**Reading**	**20**
2.	**Writing**	**20**
3.	**Literature**	**40**
4.	**Internal Asessment** Speaking Listening ASL Project	**20** 05 05 10

MATHEMATICS

LEARNING OBJECTIVES

1. To enable the students to reinforce mathematical skills and reasoning through clear arguments.
2. To strengthen the concepts developed at the secondary stage to provide firm foundation for further learning in the subject.
3. To enable students enhance their mental calculations.
4. To promote problem solving abilities and creative thinking in learners.

TEXT BOOK

MATHEMATICS Part I and II by NCERT

RECOMMENDED BOOKS:

NCERT Exemplar, M.L.Aggarwal

MONTH	COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING AIDS
April	**Chapter** 3: Matrices	Students would be able to -Define a matrix -Classify a matrix Learn types of matrices -critically analyse & evaluate the sum difference and product of matrices	Evaluate, analyze, extrapolate, think critically	Exemplar NCERT/ Extra Marks Module of Matrices
	Chapter 4: Determinants	Students would be able to -apply their knowledge to evaluate a determinant Find minors and cofactors -evaluate inverse of a matrix using formula	Evaluate, Recall, Extrapolate	Exemplar NCERT/ Extra Marks Module of Determinants

		-solve the system of linear equations using matrix method		
May	**Chapter** 1: Relations and Functions	Students would be able to -define& recognize different types of Relations & functions -check the given relation for reflexivity, symmetry and transitivity - Equivalence relations -Equivalence Class -one one and onto functions	Evaluate, analyze, recall, extrapolate, think critically	Exemplar NCERT / Extramarks Module of Relations and Functions
	Chapter 2: Inverse Trigonometric Functions	Students would be able to -understand the Principal value branches of inverse trigonometric functions -apply their knowledge to use the properties of inverse trigonometric functions Graphs of inverse T- functions	Evaluate, analyze, recall, extrapolate, think critically	Exemplar NCERT / Extra marks Module of Inverse trigonometry and related formulae
	C**hapter** 5: Continuity and Differentiability	Students would be able to – Critically analyse & evaluate the Continuity & Differentiability of a function at a point	Conceptualiz—ation, Synthesizing, Expressing, Analytical thinking, Simulate,	Exemplar NCERT / Extra marks Module of continuity and differentiability

		-chain rule - derivatives of inverse T-Functions -Exp and Log functions -Logarithmic differentiation -Derivatives of parametric functions	Collaborative effort and team spirit	
July	**Chapter** 12: Linear Programming	Students would be able to -Find the optimal solution of the given linear programming problem (bounded and unbounded region)	Analyze, Visualize, Perceive	Exemplar NCERT /
	Chapter 6: Application of Derivatives	Students would be able to - execute their Knowledge for the Applications of Derivatives - rate of change of bodies -increasing/ decreasing functions -maxima and minima	Logical thinking, Observational skills, Recognize ,structure, Evaluation	Exemplar NCERT / Extramarks Module of -Rate of change of a function, Increasing and decreasing functions LMV Theorem, Rolle's Theorem
August	**Chapter** 7:Integrals	Students would be able to -relate the concept of Differentiation with concept of Integration , -critically analyse & evaluate the Integration of different functions -describe various methods of integration - understand the Geometrical interpretation of definite integrals, memorize& critically	Evaluate, analyze, recall, extrapolate, think critically	Exemplar NCERT / Extramarks Module of Indefinite and Definite Integration with properties

		analyse various Properties of Definite Integrals		
	Chapter 8: Application of Integrals	Students would be able to -relate their knowledge & understanding of integration with the applications of Integrals in finding the area under simple curves	Logical thinking, Observational skills, Recognize ,structure, Evaluation	Exemplar NCERT / Extramarks Module of Application of Integrals
Sep	**Chapter** 9: Differential Equations	Students would be able to - define the differential equation -find order and degree -general and particular solutions of D.E. -use analytical methods to find the solution of a given differential equation	Evaluate, analyze, recall, extrapolate, think critically	Exemplar NCERT / Extramarks Module of Differential Equations
Oct	**Chapter** 13: Probability	Students would be able to -evaluate the conditional probability of various events - multiplication theorem on probability -independent events - total probability -Baye's theorem -random variable -probability distribution -mean of random variable	Evaluate, analyze, recall, extrapolate, think critically	Exemplar NCERT / Extramarks Module of Probability

		- identify the various approaches of probabilities - solve problems on various approaches of probabilities		
	Chapter 10: Vectors	Students would be able to -compare and contrast scalars & vectors and classify the vectors - describe the Properties of product of two vectors(dot and cross) -understand& relate properties of a vectors	Evaluate, analyze, recall, extrapolate, think critically	Exemplar NCERT / Extramarks Module of vectors
Nov	**Chapter** 11: Three Dimensional Geometry	Students would be able to -find the direction ratio and direction cosines of a line joining two points-visualize the different conditions of a line in three dimensional geometry -shortest distance between skew lines -angle between two lines	Evaluate, analyze, recall, extrapolate, think critically	Exemplar NCERT / Extramarks Module of Three Dimensional Geometry
Dec	Revision and Pre Board 1			

SUGGESTIONS TO PARENTS:

1) For perfection in the subject, one needs to be regular
2) Practice is the key to success. The more they practise; the better will be their command in the subject.
3) Encourage children to see math in everyday life like paying of mobile bills is a good example of ceiling function etc….

UNITS		**Marks**	
1	**Relations and Functions**	08	**Time: 3 hrs.** **Max Marks. 80, for the written exam**
2	**Algebra**	10	
3	**Calculus**	35	
4	**Vectors and Three - Dimensional Geometry**	14	
5	**Linear Programming**	05	
6	**Probability**	08	
	Total	80	
	Internal assessment	20	

CHEMISTRY

LEARNING OBJECTIVES

The broad objectives of teaching Chemistry at Senior Secondary Stage are to help the learners:

1. To promote understanding of basic facts and concepts in chemistry while retaining the excitement of chemistry.
2. To make students capable of studying chemistry in academic and professional courses (such as medicine, engineering, technology) tertiary level.
3. To expose the students to various emerging new areas of chemistry and apprise them with their relevance in their future studies and their application in various spheres of chemical sciences and technology.
4. To equip students to face various changes related to health, nutrition, environment, population, weather, industries and agriculture.
5. To develop problem solving skills in students.
6. To expose the students to different processes used in industries and their technological applications.
7. To acquaint students with different aspects of chemistry used in daily life.
8. To develop an interest in students to study chemistry as a Discipline

TEXT BOOKS

Chemistry Part I and II by NCERT

RECOMMENDED BOOKS

Lab Manual for Chemistry: Pradeep Publications

Pradeep's Fundamental Chemistry: Organic chemistry by Bahl and Bahl, Morrison and Boyd, Physical Chemistry by K. L. Kapoor

Month	Course Content	LEARNING OUTCOME	SKILL	TEACHING METHOD
April	**Unit** I: Solutions **Unit** VI: Haloalkanes and Haloarenes **Practicals**: i) Preparation of double salt of ferrous ammonium sulphate or potash alum	**s**tudent would be able to ➢ Explain type of solutions ➢ Expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law ➢ Explain the deviations of real solution from Raoult's law. ➢ Apply colligative properties to solve the numericals and conceptual questions. ➢ Solve the numericals and conceptual questions on abnormal molecular mass, Van't Hoff factor.	➢ **Problem solving** ➢ Analytical reasoning ➢ Recall ➢ Deduce ➢ Calculate ➢ Conclude ➢ Tabulate ➢ Collaborative learning ➢ draw conclusions from quantitative/qualitative data;	• Guided Discussion • Problem solving based learning • **Power point presentation** • Self-assessment • Numerical practice • **U tube videos** • **Notes**

		➢ Write IUPAC names and deduce the structure of organic compounds ➢ Know the physical and chemical properties of haloalkanes and haloarenes ➢ Solve conceptual and conversions		
May	**Unit** VII: Alcohols, Phenols and Ethers **Unit** VIII: Aldehydes, Ketones and Carboxylic Acids **Practical : 3.** Tests for the functional groups present in organic compounds: Carboxylic and amino (primary) groups: 4. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs.	Students would be able to: ➢ Write IUPAC names and deduce the structure of organic compounds ➢ Know the physical and chemical properties of organic compounds of alcohols, phenols and ethers ➢ Understand the comparison of acidic character of alcohols and phenols. ➢ Know the physical and chemical properties of organic compounds of aldehydes and ketones ➢ Know the importance of various factors affecting the acidity of carboxylic acids. ➢ Distinguish between various compounds ➢ Solve different conversions	Draw valid conclusions and support them with evidence and examples Problem solving Recall Correlate connclude Analytical reasoning	• Guided Discussion • Problem solving based learning • **Power point presentation** • Self-assessment • Mind maps • **U tube videos** • **Notes** • **Smart class modules**

July	**Unit** VIII: Aldehydes, Ketones and Carboxylic Acids (Contd.) **Unit** III: Electrochemistry **Unit** XIII: Organic compounds containing Nitrogen . **Practicals.** **1.** Tests for the functional groups present in organic compounds: Unsaturation, alcoholic, aldehydic, ketonic group. **2.** Qualitative analysis (Determination of one cation and one anion in a given salt)	Student would be able to ➢ Write IUPAC names and deduce the structure of organic compounds ➢ Know the physical and chemical properties of carboxylic acid ➢ Write the bonding and chemical nature of three classes of amines and know their importance of amines ➢ solve the organic onversions. ➢ Distinguish between various compounds ➢ Solve different Conceptual questions ➢ Differentiate between Electrochemical cell and Electrolytic cell. ➢ Solve the numericals based on molar and equivalent Conductivity ➢ Apply Nernst equation to solve the numericals. ➢ Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions ➢ Justify the variation of conductivity and molar conductivity of solution with dilution and corrosion mechanism ➢ Explain electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells	➢ Scientific reasoning ➢ analyze ➢ interpret ➢ draw ➢ Calculate ➢ Differentiate ➢ Draw conclusions from quantitative/qualitative data; ➢ Critical thinking ➢ Problem solving	➢ **Power point presentation** ➢ Numerical practice ➢ Guided Discussion ➢ Problem solving based learning ➢ **Notes** ➢ **Mind Maps** ➢ **Smart class modules** ➢ **U tube Videos**

August	**Unit** XIII: Organic compounds containing Nitrogen(contd) **Unit** III: Chemical kinetics **Unit I**V: d and f Block Elements **Practicals**:5. (a)To prepare colloidal solution starch, egg albumin, ferric hydroxide (b)Determination of concentration/molarity of $KMnO_4$ solution by titrating it against a standard solution of: ii) Oxalic acid, ii) Ferrous ammonium sulphate	➢ Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry. ➢ solve the organic onversions. ➢ Distinguish between various compounds ➢ Solve different Conceptual questions ➢ Defining average and Instantaneous rate of reaction, ➢ Differentiating between molecularity and order of reaction ➢ Deriving integrated rate equations for the zero and first order reactions. ➢ Numericals related to integrated Equations. ➢ Explain concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation ➢ Numericals related to Arrhenius equation . ➢ Explain general trends in properties of the first row transition metals – metallic character, ionization enthalpy,	➢ Problem solving ➢ **Memorize** ➢ **recall** ➢ **repeat** ➢ **recognize** ➢ **label** ➢ **Conclude** ➢ **Tabulate** ➢ **Teamwork** ➢ **Collaborative learning**	➢ Problem solving based learning ➢ **Power point presentation** ➢ **Peerteaching** ➢ Self-assessment ➢ Numerical practice ➢ **Notes** ➢ **Mind maps**

		ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation,PROPERTIES OF KMnO4 and K2Cr2O7 ➢ Understand there activity trends on the basis of electrode potential.(oxidationstate)		
September	**Unit I**V: d and f Block Elements(contd) **Unit** X: Biomolecules **Practicals**:6.(a)Chromatography: separate the colored components present in the mixture of red and blue ink by ascending paper chromatography and find their R_f values (b)Qualitative analysis Determination of one cation and one anion in a given salt	**Students will be able to:** ➢ Explain lanthanoid contraction and its consequences ➢ Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids ➢ ➢ **Draw the structure of various compounds** ➢ **Recall all the important compounds** ➢ Explain the chemical reactions involved in biomolecules. ➢ Draw the structures of monosaccharides	➢ Memorize ➢ Recall ➢ Problem solving ➢ Conclude ➢ Critical thinking ➢ recognize ➢ label ➢ Memorize	➢ Mind Maps ➢ Problem solving based learning ➢ **Power point presentation** ➢ Self-assessment ➢ Peerteaching ➢ Project work ➢ **Notes**

October	**Unit** X: Biomolecules(contd) **Practicals**:7(b)Qualitative analysis Determination of one cation and one anion in a given salt	➢ .Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure. Vitamins - Classification and functions. ➢ Nucleic Acids: DNA and RNA.	➢ ➢ **Problem solving**	• Guided Discussion • **Power point presentation** • **Preerteaching** • **Project work** • Self-assessment • **U tube videos** • **Notes**
November **December-February**	**Unit V:** Coordination Compounds **Practicals :**8. Qualitative analysis (Determination of one cation and one anion in a given salt) **9.** (a) Effect of concentration and temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid. Pre-boards and revision	Students would be able to ➢ Explain terms like ligands, coordination number, properties like colour, magnetic properties and shapes ➢ Write IUPAC names and deduce the structure of mononuclear coordination compounds ➢ Solve conceptual questions on Werner's theory, VBT, and CFT.	➢ Scientific reasoning ➢ Analyze ➢ Interpret ➢ Problem solving	➢ Guided Discussion ➢ Problem solving basedlearning ➢ **Power point presentation** ➢ **U tube videos** ➢ **Notes** .

UNITS		Marks
Unit I	**Solutions**	7
Unit II	**Electrochemistry**	9
Unit III	**Chemical Kinetics**	7
Unit IV	**D and F Block Elements**	7
Unit V	**Coordination Compounds**	7
Unit VI	**Haloalkanes and Haloarenes**	6
Unit VII	**Alcohols, Phenol and Ethers**	6
Unit VIII	**Aldehydes, Ketone and Carboxylic acid**	8
Unit IX	**Organic Compounds containing Nitrogen**	6
Unit X	**Biomolecules**	7
	Total	70

PHYSICS

LEARNING OBJECTIVES

1. Strengthen the concepts developed at the secondary stage to provide firm foundation. For further learning in the subject.
2. Expose the learners to different processes used in Physics-related industrial and Technological applications.
3. Develop process-skills and experimental, observational, manipulative, decision Making and investigatory skills in thelearners.
4. Promote problem solving abilities and creative thinking in learners.
5. Develop conceptual competence in the learners and make them realize and appreciate. The interface of Physics with other disciplines.

TEXT BOOKS

Physics Part I and II: by NCERT

RECOMMENDED BOOKS

Physics Lab Manual by APC- XII
FUNDAMENTAL PHYSICS: S.L.ARORA
Concepts of Physics: H.C.Verma

Subject: -Physics				
Month	**Course Content**	**Learning Outcome**	**Skill**	**Teaching Method**
April	**Ch 1:** Electric Charges and Fields **Ch 2**: Electrostatic Potential and Capacitance **Practicals**: Section A Experiments 1. To determine resistivity of two/three wires by plotting a graph of potential difference versuscurrent. 2. To find resistance of a given wire using metre bridge.	Students would be able to: ➢ Obtain electric field intensity at a point due to a point charge,for a system of charges distributed discretely and continuous charge distribution. ➢ Apply Gauss theorem to find electric field due to continuous charge distributions. ➢ Understand the concept of Electric potential due to different charge distributions and its relation with electric field. ➢ Explain the capacitance, dielectrics and its polarization. ➢ Derive the formula for the capacitance of a parallel plate capacitor.	Analytical reasoning, Critical thinking, Problem solving, Drawing, Collaboration	Inductive Deductive method, Problem Solving method, Discussion and Demonstration method
May	**Ch 3:** Current Electricity **Ch 4**: Moving Charges and Magnetism **Practicals:** Section A Experiments 3. To find equivalent resistance of series combination of two wires using metre bridge OR	Students would be able to: ➢ Understand the concept of Potential difference and current ➢ Find the unknown current in a loop using KVL and KCL. ➢ Understand the practical application of resistors and cells. ➢ Operate different electrical instruments like POT, Meter bridge, Galvanometer, Voltmeter, ammeter etc. also they learned to find the least count of given measuring instrument.	Analytical reasoning, Critical thinking, Problem solving, Drawing, Observation and Collaboration	Inductive Deductive method, Problem Solving method, Discussion and Demonstration method

	To find equivalent resistance of parallel combination of two wires using metre bridge	➢ Find the relation between electricity and Magnetism and different methods to find the Magnetic field due to different types of conductor. ➢ Explain the force between two parallel conductors and its mathematical analysis depending upon the directions of current. ➢ Convert a galvanometer into ammeter and voltmeter of desired range.		
July	**Ch 5:** Magnetism and Matter **Ch 6**: Electromagnetic Induction **Practicals:** Section A Experiments 4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.	Students would be able to: ➢ Explain the origin and components of earth's magnetic field. ➢ Understand the different method to induce an emf in a given conductor. ➢ Understand the concept of self and mutual induction.	Analytical reasoning, Critical thinking, Problem Solving and Simulating	Inductive Deductive method, Problem Solving method, Discussion and Demonstration method
August	**Ch 7**: Alternating Current **Ch 8:** Electromagnetic Waves **Ch 9:** Ray Optics and Optical Instruments **Practicals**: : Section B Experiments 1. To find the focal length of a convex lens by plotting graphs between u and v or between l/u and l/v. 2. To find the focal length of a concave lens,	Students would be able to: ➢ Acquire the basic knowledge about the Principle, construction, working and real life application of Transformer and Dynamo. ➢ Acquire knowledge about the practical application of EMW in our Daily life. ➢ Understand the different types of lenses and ray diagrams for image formation along the mathematical tactics and analysis. ➢ Derive the magnification formulae of	Analytical reasoning, Critical thinking, Problem Solving, Exploring, Expressing, Measuring	Inductive Deductive method, Problem Solving method, Discussion and Demonstration method

	using a convex lens. OR 2. To find the focal length of a convex mirror, using a convex lens.	different optical instruments. ➢ Explain the different optical phenomena in our daily life.	and Inferring	
Sept.	**Ch 10:** Wave Optics **Practicals:** Section B Experiments 3. 5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.	Students would be able to: ➢ Understand the propagation of light as a wave ➢ Prove the laws of reflection and refraction on the basis of wave theory. ➢ Distinguish between constructive and destructive interference, and coherent sources of light. ➢ Give experimental evidence to support wave theory of light. ➢ Explain factors on which the fringe width depends.	Analytical reasoning, Critical thinking, Problem Solving, Simulating and Inferring	Inductive Deductive method, Problem Solving method, Discussion and Demonstration method
Oct.	**Ch 11:** Dual Nature Of Matter And Radiation **Ch 12:**Atoms **Ch 13**:Nuclei **Practicals:** Section B 4 .To draw the I-V characteristic curve of a Junction diode in forward bias and reverse bias.	Students would be able to: ➢ Explain transverse nature of light. ➢ Explain Photoelectric emission and its variation with certain parameters like frequency & intensity. ➢ Understand the particle nature of light. ➢ Establish de Broglie wave length and wave nature of matter. ➢ Understand the Concept of atoms and nuclei with help of different models developed by different scientists (Rutherford's model, Bohr's modeletc.)	Analytical reasoning, Critical thinking, Problem Solving, Simulating, Predicting, Analysing and	Inductive Deductive method, Problem Solving method, Discussion and Demonstration method

			Concluding	
Nov.	**Ch 14:** Semiconductor Electronics- Materials, Devices and Simple Circuits.	➢ Understand the concept of Conductors, Insulator and Semiconductor with the help of Band Energy Theory. ➢ Understand the classification of semiconductors along with its practical applications in Junction diode and Rectifiers.	Analytical reasoning, Critical thinking, Problem Solving, Simulating, Predicting, Analysing and Concluding	Inductive Deductive method, Problem Solving method, Discussion and Demonstration method

SUGGESTIONS TO PARENTS

1. To keep in regular touch with the child and the subject teacher to keep a close eye on the child's progress.
2. To encourage the child for regular revision and write practice.

UNITS		**Marks**	
Unit I	**Electrostatics**		**Time: 3 hrs.** **Max Marks. 70**
Unit II	**Current Electricity**	16	
Unit III	**Magnetic Effect of Current and Magnetism**	17	
Unit IV	**Electromagnetic Induction and Alternating Current**		
Unit V	**Electromagnetic Waves**	18	
Unit VI	**Optics**		
Unit VII	**Dual Nature of Matter**	12	
Unit VIII	**Atoms and Nuclei**		
Unit IX	**Electronic Devices**	7	

ACCOUNTANCY

LEARNING OBJECTIVES:

1. To enable the students with accounting for reconstitution of partnership firms.

2. To enable the students to understand and analyse the financial statements.

3. To help the learners in comprehending the changing role of accounting in the present scenario of increasing societal demands.

TEXT BOOKS: Accountancy Part I&II. By NCERT.

RECOMMENDED BOOKS:

1. Double entry book keeping- Accounting for Partnership firms and Companies
by T.S.Grewal
2. Analysis of Financial Statements by T.S.Grewal

APRIL	**UNIT 1 (Fundamentals of Partnership Firm)** • Partnership: features, Partnership deed. • Provisions of the Indian Partnership Act 1932 in the absence of partnership deed • **Preparation of Profit & Loss Appropriation account**, division of profit among partners Fixedv/s fluctuating capital accounts. • Guarantee of profits. • **Past adjustments**(interest on capital, interest on drawing, salary and profit sharing Ratio). **Unit 1: Accounting for Partnership Firm (Goodwill: Nature and Valuation)** **(Change in the Profit Sharing Ratio Among Existing Partners)** • Goodwill- Goodwill: nature, factors affecting and methods of valuation - average profit, super profit and capitalization • Change in the Profit	**To enable the students to:** • The meaning and features of partnership • The special aspects of partnership accounts. • Explain the meaning and features of partnership. • Distribute the profits among partners as per partnership deed. **To enable the students to** • Valuation of goodwill	***Textual illustration***: Guarantee of Profits, Preparation of Profit and Loss Appropriation Account ***Class test***: Guarantee of Profits ***Textualillustration:*** Valuation of Goodwill, Journal Entries for Change in Profit Sharing Ratio ***Class test:***	Smart Board: Lecture Notes- Types of Partners' Capital Accounts, Guarantee of profits. And Past adjustment **TEACHING METHODS** Smart Board: Goodwill on Admission of a new Partner, Accounting treatment of Goodwill

MAY	Sharing Ratio – Sacrificing ratio and Gaining ratio. • Accounting for revaluation of assets and re-assessment of liabilities and • Distribution of reserves • Preparation of Balance Sheet. **Unit 1: Accounting for Partnership Firm** **(Admission of a Partner)** • Change in the profit sharing • Treatment for revaluation of assets and re - assessment of liabilities • Treatment of reserves and accumulated profits, • Preparation of capital accounts, current account and balance sheet • Treatment of goodwill**(as per AS26)** accounts and balance sheet after admission of a partner **Unit 1: Accounting for Partnership Firm (Retirement and Death of a Partner)**	**To enable the students to** • the effects of admission of a partner with respect to goodwill, reserves and surplus • prepare the accounts after the admission of a partner • prepare accounts on change in profit sharing ratio • Evaluate goodwill of a new partner. **To enable the students to** • understand accounting	Valuation of Goodwill ***Textual illustration:*** Accounting on Admission of a partner with adjustments	**TEACHING METHODS** Smart Board: Admission of a new Partner • Case studies and peer group discussion **TEACHING METHODS**

JULY	**(Dissolution of Partnership Firms)** • Retirement of a partner: Effect of retirement of a partner on change in profit sharing ratio, • Treatment of goodwill **(as per AS 26),** treatment for revaluation of assets, capital account , current account and balance sheet • Death of a partner: Calculation of deceased partner's share of profit and Goodwill till the date of death. • Preparation of deceased partner's capital account and his executor's account. • Dissolution of partnership firms: types of dissolution ,Settlement of accounts - preparation of realization account, and other related accounts • Settlement of accounts - preparation of realization account, and other related accounts • Re -assessment of liabilities, adjustment of accumulated profits and reserves, adjustment of	treatment of goodwill, reserves and surplus in case of retirement of a partner • settle books of accounts after dissolution	***Textual illustrations:*** Death of a partner, Dissolution of partnership firms ***Class test:*** Dissolution of partnership firms	Smart Board Modules: Accounting Treatment: Goodwill on Retirement, Death of a Partner Treatment on Dissolution of Partnership Firm Case studies Peer group discussion

	capital. **PART B FINANCIAL STATEMENT ANALYSIS** **Unit 4: Financial Statement**	**To enable the students to** • Analyze financial statements of a company		**<u>TEACHING METHODS</u>** Smart Board Module: - Cash Flow From Operating Activity, Cash

AUGUST	**Analysis** **(Analysis of Financial Statements)** Financial Statements of a company :Statement of Profit and Loss and Balance Sheet as per Schedule III to a the Companies Act 2013 • Financial Statement Analysis: Objectives and limitations. Tools for Financial Statement Analysis: Comparative statements, common size statements, Ratio analysis, Cash flow analysis. Cash flow analysis , Ratio analysis **(Accounting Ratios)** • Accounting Ratios: Objectives, classification and Computation of **Liquidity Ratios:** Current ratio and Quick ratio. • Accounting Ratios**:** **Solvency Ratios:** Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio • **Activity Ratios**: Stock	company • The proforma to prepare statement of profit and loss of a company • The proforma to prepare Balance Sheet of a company • the calculation of various types of ratios. • Develop the skill of preparation of preparation of comparative and common size statement, understand their uses and difference between the two. • Computations of types of activities in Cash Flow Statement • Prepare Cash Flow Statement as per **AS3(Revised)**	***Practice Assignment-*** Cash Flow Statement ***Textual illustrations:*** Cash Flow Statement ***Class test:*** Cash Flow Statement Classifications of Ratios Classifications of Assets and Liabilities	Flow From Investing and Financing Activity - Formulas for calculating various types of ratios - Format of Balance sheet and Statement of Profit and Loss Account

SEPTEMBER	Turnover Ratio, Debtors Turnover ,Ratio, Creditors Turnover Ratio and Working Capital Turnover • **Profitability Ratios (Cash Flow Statement)** Preparation of CFS as per **AS 3 (Revised)** (Indirect Method only) • Cash Flow Statement : Practical questions with adjustments **Unit 3: Accounting for Companies** **(Accounting for Issue of shares and** • Share and share capital: concept and kinds of share capital • Private placement and ESOP • Accounting for over subscription and under subscription of shares; - Issue at par -Issue at premium • Calls in advance and	**To enable the students to** • the accounting treatment of issue of shares at par and premium • the accounting treatment of forfeiture and reissue of shares • disclosure of share capital in company's Balance Sheet	***Textual illustrations***: Accounting for over	**TEACHING METHODS:** Smart Board Module: Issue of Shares For Cash AND Other than Cash

		To enable the students to		**<u>TEACHING METHODS</u>**

OCTOBER	arrears (excluded interest) • Issue of shares for Consideration other than cash • Accounting treatment of Forfeiture and Reissue of shares. **(Accounting for Issue of Debentures)** • Disclosure of Shares and Debentures in company's Balance Sheet. • Issue of debentures at par, at premium and at discount. • Issue of debentures for consideration other than cash; • Writing off discount /loss on issue of debentures	• the accounting entries for issue of debentures	subscription and under subscription of shares. ***Class test***: -Issue of Shares -Issue of shares for Consideration other than cash	Smart Board Module: Issue of debentures Case studies Problem solving questions
NOVEMBER **DECEMBER** **JANUARY**	**REVISION**			

SUGGESTIONS TO PARENTS:

1. Motivate your ward to regularly practice the numerical.
2. Encourage the child to work as per the time limit and in the defined formats.
3. Be in touch with the concerned teachers so as to regularly access the performance.

UNITS		**Marks**	
1	Accounting for partnership firms	36	
2	Accounting for companies	24	**Maximum Marks (Theory 80** **Practical 20)** **Duration- 3 hours**
3	Analysis of financial statements	12	
4	Cash flow statement	8	
5	Project Work	20	

BUSINESS ST UDI ES

MONTH	COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING METHOD
April	**Chapter 1** **Nature and significance of management**	**After going through chapter 1 students would 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 an art, science and profession Understand the levels of management Explain the functions of management Discuss the concept of coordination Explain the importance and features of coordination	Evaluate, analyze, recall, think critically	Guided Discussion Problem solving based learning Peerteaching Self-assessment

	Chapter 2 **Principles of management**	**After going through chapter 2 students would be able to:** Understand the concept and significance of management principles Discuss the principles of Fayol and Taylor Compare the contributions of Taylor and Fayol		
May	**Chapter 11** **Marketing Management**	**After going through chapter 11 students would be able to:** Understand the concept , features and functions of marketing Explain the marketing philosophies Understand the concept and elements of marketing mix(Product, Price , Place and Promotion) Product: Branding. Packaging, labelling	Solve problems to new solutions by apply ingacquired knowledge Analyzing and Evaluating	Guided Discussion Problem solving based learning Peerteaching Case studies Self-assessment

	Chapter 12 Consumer Protection	Price: factors affecting price Place: channels of distribution Promotion: Advertising, personal selling, sales promotion and public relation. **After going through chapter 12 students would be able to:** Understand the concept of Consumer Protection Discuss the scope of CPA Explain the consumer rights and responsibilities Discuss the redressal forums Explain the remedies available to consumer as per CPA Consumer awareness - Role of consumer organizations and Non-Governmental Organizations (NGOs)		

July	**Chapter 4** **Planning** **Concept, importance and Process** **Chapter 5** **Organizing** **Concept and Process**	**After going through chapter 2 students would be able to:** Understand the concept, features and importance & Limitations of planning Explain the Process of planning Single use and standing plans. Objectives, Strategy, Policy, Procedure, method Rule, budget and Programme **After going through chapter 2 students would be able to:** Understand the concept, process and importance of Organising function Describe functional and divisional structure of an formal organization and would able to differentiate between two. Understand the concept of delegation and decentralization, their importance and difference between them	Conceptualization Analytical thinking Remembering team spirit	Written assignments Mapping Learning with Acronyms Case studies Higher Order Thinking Skills
August	**Chapter: 6** **Staffing**	**After going through chapter 6 students would be able to:** Understand the concept and importance of staffing	Analyze Organize Participate Distinguish Memorize	Guided Discussion Problem solving based learning Case studies mapping

		Understand the specialized duties of HRM Describe the steps in the staffing process Understand the meaning, sources of recruitment Describe the steps in the selection process Understand the concept of training **and development** **Appreciate the importance of training for the employees as well as for the organization** **Learn about various methods of training(on the job and off the job)**		Self-assessment Class Module
September	**Unit 7** **Directing**	**After going through chapter 7 students would be able to:** Describe the concept, features and importance of directing Describe the various elements of directing(supervision, motivation, leadership and communication) Develop an understanding of	Logical thinking Observational skills Recognize structure Evaluation	Group Discussion Case Studies Class module

	Unit 8 **Controlling**	Maslow's Hierarchy of needs Discuss the various financial and non financial incentives. Understand the various styles of leadership Communication: formal & Informal; barriers to effective communication, how to overcome the barriers **After going through chapter 8 students would be able to:** Understand the concept, features, importance and process of controlling Relationship between planning and controlling		
October	**Unit 9** **Financial Management**	**After going through chapter 9 students would be able to:** Understand the concept of financial management. Explain the role of financial management in an organization Discuss the objectives of financial management	Evaluate, analyze, recall, extrapolate, think critically	Guided Discussion Problem solving based learning Peerteaching Case studies Self-assessment

		Discuss the three financial decisions and the factors affecting them		

	Unit 10 **Financial Market**	Describe the concept of financial planning, its importance , steps and objectives. Understand the concept of capital structure and its factors Describe the factors affecting requirement of working and fixed capital. **After going through chapter 10 students would be able to:** Understand the concept of financial market Explain its functions and types Understand the concept of money market and its various instruments Discuss the concept of capital market and its types Differentiate between capital market and money market. Differentiate between primary market and secondary market Discuss the methods of floating new issues in the primary market		

		Explain the concept of stock exchange and its functions. Discuss the trading procedure in a stock exchange. State the functions of SEBI		
November	**Unit3** Business Environment Revision of Unit 1,2.4 &5	**After going through chapter 3 students would be able to:** Understand the concept of business environment. Describe the importance of business environment Describe the various elements of business environment Demonetization - concept and features	Evaluate, analyze, recall, extrapolate, think critically	Problem solving based learning Peerteaching Case studies Self-assessment
December	Revision of entire syllabus with sample papers	------	Remembering Understanding Applying Analyzing and evaluating	Mapping of all chapters
Jan-Feb	Revision			

BUSINESS STUDIES

UNITS		MARKS
PART A	PRINCIPLES AND FUNCTION OF MANAGEMENT	
1	NATURE AND SIGNIFICANCE OF MANAGEMENT	16
2	PRINCIPLES OF MANAGEMENT	
3	BUSINESS ENVIRONMENT	
4	PLANNING	14
5	ORGANIZING	
6	STAFFING	20
7	DIRECTING	
8	CONTROLLING	
PART B	BUSINESS FINANCE AND MARKETING	
9	FINANCIAL MANAGEMENT	15
10	FINANCUIAL MARKET	
11.	MARKETING MANAGEEMNT	15
12	CONSUMER PROTECTION	
	TOTAL THEORY	80

PHYSICAL EDUCATION

Book: Big think

Health & Physical Education

Theory Max. Marks 70

COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING METHOD
Unit I Management of Sports Events	• Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling) • Various Committees & their Responsibilities (pre; during & post) • Fixtures and their Procedures – Knock-Out (Bye & Seeding) & League (Staircase, Cyclic, Tabular method) and Combination tournaments. Intramural & Extramural tournaments – Meaning,Objectives & Its Significance	Students will be able to draw fixtures and get knowledge about various types of tournaments.	• Guided Discussion • Problem solving based learning • Peer Teaching • Self-assessment

	• Community sports program (Sports Day, Health Run, Run for Fun,Run for Specific Cause &Run for Unity)		

Unit II 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.	Students will be able to understand developmental characteristics of different growth as well as corrective exercises of postural deformities	• Guided Discussion • Problem solving based learning • Peer Teaching Self-assessment
Unit III 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,Bhujangasana, Shalabhasana, Dhanurasana, Supta-vajarasana, Paschimottanasan-a,	To make students aware about various yogic Asanas and learn about their procedure ,benefits and contradictions.	• Guided Discussion • Problem solving based learning • PeerTeaching • Self-assessment •

	Ardha-Mastendrasana, Mandukasana, Gomukasana, Yogmudra,Ushtrasana, Kapalabhati. 3. **Asthma:** Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasan-a, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana Matsyaasana, Anuloma-Viloma. 4. **Hypertension:** Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, UttanMandukasan-a, Vakrasana, Bhujangasana, Makarasana, Shavasana,Nadi-shodhanapranayam, Sitlipranayam. 5. **Back Pain and Arthritis:** Procedure, Benefits & Contraindications of Tadasan, Urdhawahastootansana, Ardh-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujandgasana, Gomukhasana, Bhadrasana, Makarasana, Nadi- Shodhana pranayama.		

Unit IV Physical Education & Sports for CWSN (Children With Special Needs - Divyang)	1. Organizations promoting Disability Sports (Special Olympics; Paralympics; 2. Deaflympics) Concept of Classification and Divisioning in Sports. 3. Concept of Inclusion insports, its need, and Implementation; 4. Advantages of Physical Activities for children withspecial needs. 5. Strategies to make Physical Activities assessable for childrenwith special needs.	To know more about various disabilities and various aspects related to special need children, disability etiquettes and advantages of physical activities.	• Guided Discussion • Problem solving based learning • Peer Teaching • Self-assessment •
Unit V Sports & Nutrition	1. Concept of balanced dietand nutrition 2. Macro and Micro Nutrients: Food sources &functions 3. Nutritive & Non-Nutritive Components of Diet 4. Eating for Weight control – A Healthy Weight, ThePitfalls of Dieting, Food Intolerance, and Food Myths 5. Importance of Diet in Sports- Pre, During andPost competition Requirements	To make students aware about the relevance of Balanced Diet and how to plan a diet.	• Guided Discussion • Problem solving based learning • PeerTeaching • Self-assessment •

Unit VI Test & Measurement in Sports	Fitness Test – SAI KheloIndia Fitness Test in school: Age group 5-8 years/ class 1-3: BMI, FlamingoBalance 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 Exercisein Seconds x100/5.5 X Pulse count of 1-1.5 Minafter Exercise. 3. Computing Basal Metabolic Rate (BMR)	To know the value of sports for children and the utility and validity of the test Students will be able to judge their capability in an event through test and measurement.	• Guided Discussion • Problem solving based learning • Peer Teaching • Self-assessment •

	4. Rikli & Jones - SeniorCitizen Fitness Test • Chair Stand Test for lowerbody strength • Arm Curl Test for upperbody strength • Chair Sit & Reach Test forlower body flexibility • Back Scratch Test forupper body flexibility • Eight Foot Up & Go Testfor agility • Six-Minute Walk Test forAerobic Endurance 5. Johnsen – Methney Test of Motor Educability (FrontRoll, Roll, Jumping Half-Turn, Jumping full-turn		

Unit VII Physiology & Injuries in Sports	1. Physiological factors determining componentsof physical fitness 2. Effect of exercise on the Muscular System 3. Effect of exercise on theCardio-Respiratory System 4. Physiological changesdue to aging 5. Sports injuries: Classification (Soft TissueInjuries - Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)	To make students aware about physiological factors related to physical fitness components and sports injuries and their management	• Guided Discussion • Problem solving based learning • Peer Teaching • Self-assessment •
Unit VIII Biomechanics & 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 applicationin sports 4. Friction & Sports 5. Projectile in Sports	To make students aware about biomechanical involvement in sports and their effect on performance.	• Guided Discussion • Problem solving based learning • Peer Teaching • Self-assessment

Unit IX Psychology & Sports	1. Personality; its definition& types (Jung Classification & Big Five Theory) 2. Motivation, its type & techniques. . 3. Exercise Adherence: Reasons, Benefits & Strategies for Enhancingit 4. Meaning, Concept & Types of Aggressions inSports 5. Psychological Attributesin Sports – Self-Esteem,Mental Imagery, Self-Talk, Goal Setting	Students will be able to understand personality , motivation, agression	• Guided Discussion • Problem solving based learning • Peer Teaching • Self-assessment
Unit X Training in Sports	1. Concept of Talent Identification and TalentDevelopment in Sports Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle. 3. Types & Methods to Develop – Strength, Endurance, and Speed. 4. Types & Methods to Develop – Flexibility andCoordinative Ability.	To make students aware about components of fitness and methods to develop them.	• Guided Discussion • Problem solving based learning • Peer Teaching • Self-assessment

	Circuit Training -Introduction & itsimportanc		
REVISION			

Physical Fitness Test :SAI Khelo India test, Brockport Physical Fitness Test (BPFT)

- ಠ Yogic Practices
- ಠ Record File
- ಠ Viva Voce (Health/ Games & Sports/ Yoga)

ANNUAL PEDAGOGY				
CLASS XII Painting				
MONTH	**COURSE CONTENT**	**LEARNING OUTCOME**	**SKILL**	**TEACHING METHOD**
April	**Unit 1**(Theory) **The Rajasthani and Pahari Schools of Miniature Painting** (16th Century A.D. to 19th Century A.D.) **(a) The Rajasthani School:** 1. Origin and Development 2. Sub-Schools-Mewar, Bundi, Jodhpur, Bikaner, Kishangarh and Jaipur 3. Main features of the Rajasthani School 4. Appreciation of the following Rajasthani paintings– • Maru-Ragini • Chaugan Players • Krishna onswing • Radha (Bani-Thani) • Bharat Meets Rama at Chitrakuta	To enable the students to – • encounter with history of humans civilization' growth through Artand culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	• Discover their potential for creativity, self-expression and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating andgenerating ideas. • Develop observation, recording, manipulation and applications kills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peerteaching Self-assessment

	(Practical) a) **Still Life-** Object Drawing b) **Composition**-based on daily life			
May	**Unit 1**(Theory) **(b)The Pahari School:** 1. Origin and development 2. Sub-Schools-Basohli, Guler, Kangra, Chamba and Garhwal 3. Main features of the Pahari School 4. Appreciation of the following Pahari paintings: • Krishna with Gopis Nand, Yashodaand • Krishna with Kinsmen Going to Vrindavana **(Practical)** a) **Still Life-**Object Drawing b) **Composition**-based on daily life	To enable the students to – • encounter wit0h history of humans civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation	• Discover their potential for creativity, self-expression and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation and application skills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peerteaching Case studies Self-assessment

JULY	**Unit 2** (Theory) **The Mughal and Deccan Schools of Miniature Painting** (16th Century AD to 19th Century A.D.) **(a) The Mughal School** 1. Origin anddevelopment 2. Main features of the Mughal School 3. Appreciation of the following Mughal Paintings: • Krishna Lifting Mount Govardhana • Falcon on a Bird-Rest • Kabir and Raidas • Marriage Procession of Dara Shukoh **(Practical)** a) **Still Life**-Object Drawing b) **Composition**-based on daily life	To enable the students to – • encounter with history of humans civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	• Discover their potential for creativity, self-expression and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation and application skills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peerteaching Self-assessment

AUGUST	**Unit 2**(Theory) **(b) The Deccan School** 1. Origin and development 2. Main features of the Deccan School 3. Appreciation of the following Deccanpaintings: • Hazrat Nizamuddin Auliya and Amir Khusro • Chand Bibi Playing Polo (Chaugan) **(Practical)** a) **Still Life**-Object Drawing b) **Composition**-based on daily life	To enable the students to – • encounter with history of humans civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	• Discover their potential for creativity, self-expression and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation and application skills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peerteaching Self-assessment
SEPTEMBER	**Unit 3** (Theory) **The Bengal School of Painting and the Modern trends in Indian Art** (About the beginning to mid of the 20th Century) • National Flag of India and the Symbolic significance of its forms and the colours.	To enable the students to – • encounter with history of humans civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art asare	• Discover their potential for creativity, self-expression and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation and application skills. • Experiment with arange	Guided Discussion Problem solving based learning Peerteaching Self-assessment

	<u>Introduction to the Bengal School of Painting</u> (i) Origin and development of the Bengal School of Painting (ii) Main features of the Bengal School of Painting <u>Appreciation of the following paintings of the Bengal school:</u> (i) Journey's End – Abanindranath Tagore (ii) Shiv and Sati- Nandla Bose (iv) Radhika - M.A.R.Chughtai (v) Meghdoot - Ram Gopal Vijaivargiya Contribution of Indian artists in the struggle for National Freedom Movement. **(Practical)** a) **Still Life-**Object Drawing b) **Composition**-based on daily life	required for concept formation.	• Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	
OCTOBER	**Unit 3**(Theory)	To enable the students to – • encounter with history	• Discover their potential for creativity, self-expression and visual awareness through	Guided Discussion Problem solving based learning

	The Modern Trends in Indian Art • Appreciation of the following contemporary (Modern) Indian Art **Paintings:** (i) Rama Vanquishing the Pride of the Ocean – Raja Ravi Varma (ii) Mother and child – Jamini Roy (iii) Haldi Grinders -Amrita Sher Gill (iv) Mother Teresa - M.F. Husain **Graphic - prints:** (i) Children – Somnath Hore (ii) Devi – Jyoti Bhatt (iii) Of Walls –Anupam Sud (iv) Man, Woman and Tree - K. Laxma Goud **Sculptures:** (i) Triumph of Labour - D.P. Roychowdhury (ii) Santhal Family- Ramkinkar Vaij (iii) Cries Un - heard – Amar Nath Sehgal (iv) Ganesha - P.V. Janaki Ram **(Practical)**	of humans civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development of Indian visual art as are required for concept formation.	painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation and application skills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Peerteaching Self-assessment

	a) **Still Life-**Object Drawing b) **Composition-**based on daily life			
NOVEMBER	**Unit 3(**Theory) **Revision: Unit 1.2.3** **(Practical)** a) **Still Life-**Object Drawing b) **Composition-**based on daily life	To enable the students to – • encounter with history of humans civilization' growth through Art and culture. • the students would be acquainted with brief glimpses of the development ofIndian visual art as are required for concept formation.	• Discover their potential for creativity, self-expression and visual awareness through painting. • Feel confident with the chosen medium as a means of communicating and generating ideas. • Develop observation, recording, manipulation and application skills. • Experiment with a range of media and techniques. • Relate their work to other artists work and understand the historical context of this work. • Understand the basic principles of colour. • Develop critical awareness.	Guided Discussion Problem solving based learning Peerteaching Self-assessment

- **Book: History of Art (Full Marks Publication), Class XII by Devender Kumari**
- **Portfolio: Half Imperial File consist of 20 still life drawing and 20 Composition with water/poster colour**

ECONOMICS

RECOMMENDED BOOKS:

1. TR Jain and VK Ohri- Indian Economic Development Introductory Macroeconomics
2. Sandeep Garg: Indian Economic Development Introductory Macroeconomics

Month	Course Content	LEARNING OUTCOME	TEACHING METHOD	SKILL
April	Unit 1: National Income and related aggregates Unit 6: Development Experience and Economic Reforms	The learners will be introduced to the basic concepts of national income accounting. To find out about how India made policies in 1991	Guided Discussion Problem solving based learning Peerteaching Self-assessment Numerical practice Presentation Project work	Extrapolation Expression Conceptualization Synthesizing Expressing Problem solving
May	Unit 2: Money and Banking Unit 6: Development Experience and Economic Reforms(contd..)	Define money Write meaning of money supply. Understand the relationship between commercial banks and central banks. .	Guided Discussion Problem solving based learning Peerteaching Self-assessment Numerical practice Presentation Project work	Extrapolation Expression Conceptualization Synthesizing Expressing Problem solving
July	Unit 3: Determination of Income and Employment	To probe deeper into the oretical concepts learnt	Guided Discussion Problem solving based	Extrapolation Expression

		in classes analyse and evaluate real world economic scenarios using theoretical constructs and arguments demonstrate the learning of economic theory follow up aspects of economics in which learner shave interest.	Learning Peerteaching Self-assessment Numerical practice Presentation Project work	Conceptualization Synthesizing Expressing Problem solving
August	Unit 3: Determination of Income and Employment (contd..) Unit 7:Current Challenges facing Indian Economy	To understand and analyze various challenges facing Indian Economy during present crisis.	Guided Discussion Problem solving based learning Peerteaching Self-assessment Numerical practice Presentation Project work	Extrapolation Expression Conceptualization Synthesizing Expressing Problem solving
Septem ber	Unit 4: Government Budget and the Economy. Unit 7: Current Challenges facing Indian Economy	To develop economic reasoning which the learners can apply in their day-to- day life to understand nature of government expenditure and revenue. To develop sensitivity for the economic issues that the nation is facing today. To know how the government plans to earn and spend.	Guided Discussion Problem solving based learning Peerteaching Self-assessment Numerical practice Presentation Project work	Extrapolation Expression Conceptualization Synthesizing Expressing Problem solving

October	Unit 5: Balance of payments Unit 7: Current Challenges facing Indian Economy	Meaning of foreign exchange, foreign exchange rate, Currency Depreciation, Currency appreciation, Currency devaluation Determinants of foreign exchange rate	Guided Discussion Problem solving based learning Peerteaching Self-assessment Numerical practice Presentation Project work	Extrapolation Expression Conceptualization Synthesizing Expressing Problem solving
November Dec- Feb	Unit 8: Development Experience of India-A comparison with neighbours Revision & Pre-Board Exams	To understand the economic situation ofthe country before independence. State the condition of agriculture sector, industrial sector,foreign trade, democratic condition, occupational structure and infrastructure. Write some positive side effects of the British Rule. Relate it with real life situations	Guided Discussion Problem solving based learning Peerteaching Self-assessment Numerical practice Presentation Project work	Extrapolation Expression Conceptualization Synthesizing Expressing Problem solving

ECONOMICS
CLASS - XII (2022-23)

Theory: 80 Marks **3 Hours**
Project: 20 Marks

Units		Marks	Periods
Part A	**Introductory Macroeconomics**		
	National Income and Related Aggregates	10	30
	Money and Banking	06	15
	Determination of Income and Employment	12	30
	Government Budget and the Economy	06	17
	Balance of Payments	06	18
		40	
Part B	**Indian Economic Development**		
	Development Experience (1947-90) and Economic Reforms since 1991	12	28
	Current Challenges facing Indian Economy	20	50
	Development Experience of India – A Comparison with Neighbours	08	12
	Theory Paper (40+40 = 80 Marks)	**40**	
			200
Part C	**Project Work**	**20**	**20**

SUGGESTIONS TO PARENTS:

1. Motivate your ward to regularly revise concepts taught.
2. Encourage your ward to be thorough with the topics covered.
3. Be in touch with the concerned teachers to regularly assess the performance.
4. Devote ample time to practice numericals so as to gainproficiency

COMPUTER SCIENCE

Learning Objective

· To enable students to apply the concept of functions.
· To enable students to create and use Python libraries.
· To enable students to apply the concept of file handling.
· To enable students to use basic data structures: Stacks
· To enable students to understand the basics of computer networks.
· To enable students to use connectivity between Python and SQL.

Textbook:

Computer Science with Python – Textbook of Class XII by Sumita Arora (Publisher- Dhanpat Rai & Co)

MONTH	COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING AIDS
April	**Unit 1 : Programming using Python** Chapter 3– Working with Functions Chapter 4– Using Python Libraries	· Apply the concept of functions · Ability to create and use Python libraries.	Understanding, Applying, Creating, Problem Solving,	Guided Discussion Problem solving based learning Power point Presentations
May	**Unit 1 : Programming using Python** Chapter – File Handling (Intro) Chapter – File Handling (Text Files)	· Understand the need of Data Files · Apply the concept of file handling.	Recalling, Remembering, Understanding, Applying,	Relating with real life situation Power point Presentations Notes,

May (Contd…)	**Unit 2: Computer Networks** Chapter – Computer Networks (Basics Introduction)	Explain the basics of computer networks.	Problem Solving	Assignments
July	**Unit 1 : Programming using Python** Chapter – File Handling (Binary Files) **Unit 3: Database Management** Chapter – Relational Databases Chapter – Simple Queries in SQL Chapter – Table Creation and DML Chapter – Grouping Records and Joins in SQL	· Apply the concept of file handling · To use SQL commands to create database, tables, insert data, display the data. · Using simple queries in SQL · Using group by clause · Joining tables	Analyze, Recall, Extrapolate, Think Critically, Identify, Apply	Power point Presentations Notes Lecture Method Diagrams Power point Presentations and Online Quizzes
August	**Unit 3: Database Management** Chapter – Interface Python with MySQL **Unit 2: Computer Networks** Chapter – Computer Networks (Contd…)	· Ability to use connectivity between Python and SQL. · Explain the basics of computer networks.	Recalling, Analysing, Creating, Problem Solving, Critical Thinking	Interactive lectures Project simulations Real life examples Class tests Power point Presentations, Notes, Assignments and Online Quizzes
September	**Unit 1 : Programming usingPython** Chapter – File Handling (CSV Files) Chapter – Data Structures -1 Linear Lists	· Apply the concept of CSV file handling. · Learn and use the concept of Data Structures	Understanding, Applying, Analyzing, Creating, Evaluating Problem Solving	Project simulations Real life examples Demonstrations Power point Presentations Notes, Assignments and Quizzes
October	**Unit 1 : Programming using Python** Chapter – Data Structures-2 Stacks Chapter – Revision Tour-1 Chapter – Revision Tour-2	· Ability to use basic data structures: Stacks. · Ability to create and use programs using Python programming language. ·	Recalling, Remembering, Understanding, Applying,	Relating with real life situation Power point Presentations Notes,

October	**<u>Unit 2: Computer Networks</u>** Chapter – Computer Networks (Contd…)	Explain the basics of computer networks.	Problem Solving, Creating ,	Assignments
November	**<u>Unit 1 : Programming using Python</u>** Chapter – File Handling (Revision) Chapter – Working with Functions (revision)	· Apply the concept of file handling. · Apply the concept of functions	Recalling, Remembering, Problem Solving, Applying, Creating	Written practice Doubt clearing sessions Oral tests Written tests Numerical practice, Assignments and Quizzes
December	Revision			
January				
February **March**				

<u>SUGGESTIONS TO PARENTS:</u>

1) For perfection in the subject, one needs to be regular
2) Practice is the key to success. The more they practice; the better will be their command in the subject.
3) Encourage children to see PROGRAMMING in everyday life like Library issue/ return, Student Admission etc. are good examples.

UNIT-WISE MARKS DISTRIBUTION

Unit No.	Unit Name	Theory Marks
I	Computational Thinking and Programming - 2	40
II	Computer Networks	10
III	Database Management	20
	Total	70

Practical Marks Details

S.No	Unit Name	Marks (Total=30)
1	Lab Test: 1. Python program (60% logic + 20% documentation + 20% code quality)	8
	2. SQL queries (4 queries based on one or two tables)	4
2	Report file: • Minimum 15 Python programs. • SQL Queries – Minimum 5 sets using one table / two tables. • Minimum 4 programs based on Python - SQL connectivity	7
3	Project (using concepts learnt in Classes 11 and 12)	8
4	Viva voce	3

CLASS XII PSYCHOLOGY

MONTH	COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING METHOD
April	Chapter-1, Variations in Psychological Attributes	Understand psychological attributes on which people differ from each other Learn about different methods that are used to assess psychological attributes Explain what constitutes intelligent behavior Understand difference between intelligence and aptitude, intelligence and creativity. Practical 1: RSPM	Assessment of intelligence to identify mentally challenged and gifted individuals Understand how intelligence has different meaning in different cultures. Differentiate between technological and integral intelligence	Guided Discussion Role Play Peerteaching Self-assessment
May	Chapter-2 Self and Personality	Describe the concept of self and learn some ways for self-regulation of behavior Explain the concept of personality Differentiate between various approaches to the study of personality Develop insight into the development of a healthy personality Describe some techniques for personality assessment Practical 2: SCQ	Application of self-regulation techniques in everyday life Understanding importance of self-actualization Differentiate between cardinal and central traits Assessment of personality through self-report measures and projective techniques	Lecture method Problem solving based learning Peer Teaching Case study Techniques
July	Chapter 3 Meeting Life Challenges	Understand the nature, types and sources of stress as life challenges. Examine the effects of stress on psychological functioning. Know about the life skills that help people to stay healthy. Understand the factors that promote positive health and well-being. Case Study	Differentiate between eustress and distress. Understanding importance of life sills. Gain insight about our body's reaction to a stressor. Application of stress management techniques.	Guided Discussion Problem solving based learning Peer Teaching Self-assessment
August	Chapter 4	Understand the basic issues in abnormal behaviour and the criteria used to identify such behaviours.	Understand the concept of well-being.	Guided Discussion

	Psychological Disorders Chapter 5 Therapeutic Approaches	Appreciate the factors which cause abnormal behavior. Explain the different models of abnormal behaviour, and Describe the major psychological disorders. Familiarize students with the basic nature and process of psychotherapy. Developing an understanding about different therapeutic models. Understand the use of psychological forms of intervention. Understanding how people with mental disorders can be rehabilitated.	Keen understanding of factors causing abnormal behavior. 4 D's of Abnormality. Identify the key symptoms of psychological disorders Understanding the effectiveness of alternative forms of therapy- Yoga, Vipassana meditation etc. Students will understand steps in the formulation of a client's problems. Students will be able to differentiate between empathy, sympathy and intellectual understanding. Students will understand the features of psychotherapeutic alliance. Students will be able to identify the components of an effective rehabilitation plan.	Problem solving based learning Peer Teaching
September	Chapter 6 Attitudes and Social Cognition	Understand what are attitudes, how they are formed and changed. Analyze how people interpret and explain the behaviour of others. Comprehend how the presence of others influences our behavior. Explain why people help or do not help others in distress. Understand the concept of pro-social behaviour and factors affecting it.	Students will identify the affect-behavioural and cognitive components of attitude. Students will be able to understand the factors contributing to and influencing attitude formation and change.	Guided Discussion Problem solving based learning Peer Teaching Role Play

	Chapter 7 Social Influence and Group Processes	Understand the nature and types of groups and know how they are formed. Examine the influence of group on individual behavior.	Understand the attribution of causality, impression formation and actor observer effect. Describe the process of cooperation and competition. Reflect on the importance of social identity. Understand the nature of intergroup conflict and examine conflict resolution strategies. Identify factors facilitating group formation. Understand the stages of group formation.	
October	Practicals Ravens Standard Progressive Matrices	Students will be able to assess various psychological attributes using various standardized psychological tests.	Understand the different types of test and acquire an understanding of how various factors influence psychological testing.	Lecture Method
	Practical Self-Concept Questionnaire	Students will be able to assess various domains of self concept using R.K Saraswat's Self Concept Questionnaire.		

		Students will able to assess adjustment of their peers using Adjustment Inventory of School students by R. K Singh and AKP Sinha.		
November	Revision			
December				
January				
February				

Units	**Topics**	**No. of periods**	**Marks**
I	Variations in Psychological attributes	30	13
II	Self and Personality	32	13
III	Meeting Life Challenges	23	9
IV	Psychological Disorders	30	12
V	Therapeutic Approaches	25	9
VI	Attitudes and Social Cognition	16	8
VII	Social Influence and Group Processes	14	6
		170	70

BIOLOGY

MONTH	**COURSE CONTENT**	**LEARNING OUTCOME**	**SKILL**	**TEACHING METHOD**

APRIL & MAY	**Unit-VI Reproduction** **Chapter-2: Sexual Reproduction in Flowering Plants** **Chapter-3: Human Reproduction** **Chapter-4: Reproductive Health**	Students will be able to 1.Explain Flower structure; development of male and female gametophytes; 2.Exemplify pollination - types, agencies and examples; outbreeding devices; 3.Analyse pollen-pistil interaction; double fertilization. 4.Explain post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; 5. Exemplify special modes- apomixis, parthenocarpy, polyembryony. 6.Analyse Significance of seed dispersal and fruit formation. 7.Explain human Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis. 8.Analyse changes in menstrual cycle; fertilization, embryo development up to blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea). 9.Critically analyze Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); 10 Explain birth control - need and methods, 11. Discuss contraception and medical termination of pregnancy (MTP); amniocentesis; 12.Discuss infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary	1.Cognitive skills 2 Analytical skills 3 Critical thinking skills 4 Problem solving skills 5.Observation skills 6, Drawing and labelling skills 7 Slide preparation skills	Hands on Practical ➢. Prepare a temporary mount to observe pollen germination ➢Prepare a temporary mount of onion root tip to study mitosis. Observation skill development .1. To observe Flowers adapted to pollination by different agencies (wind, insects, birds). 2. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice). \ 3. Meiosis in onion bud cell or grasshopper testis through permanent slides. 4. T.S. of blastula through permanent slides (Mammalian).. 5.Two plants and two animals (models/virtual images) found

				in xeric conditions. Comment upon their morphological adaptations .6. Two plants and two animals (models/virtual images) found in aquatic conditions. Comment upon their morphological adaptations Class discussion through online teaching followed by online assessments

JULY , AUGUST	**-Unit-VII Genetics and Evolution** **Chapter-5: Principles of Inheritance and Variation** **Chapter-6: Molecular Basis of Inheritance**	Students will be able to 1.Define Heredity and variation: 2.Exemplify Mendelian inheritance; deviations from Mendel's laws – incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance. 3.Analyse chromosome theory of inheritance; chromosomes and genes. 4 Explain Sex determination - in human being, birds and honeybee. 5.Critically analyze linkage and crossing over; sex linked inheritance - hemophilia, colour blindness. 6.Exemplify Mendelian disorders in humans -thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes. 7. Analyse the process of Search for genetic material and DNA as genetic material. 8. Explain Structure of DNA and RNA; DNA packaging; DNA replication. 9.Explain Central Dogma; transcription, genetic code, translation. 10.Analyse gene expression and regulation - lac operon; Genome, Human and rice genome projects; DNA fingerprinting and its uses .	1.Cognitive skills 2 Analytical skills 3 Critical thinking skills 4 Problem solving skills 5.Observation skills 6, Drawing and labelling skills	Hands on practicals To Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc To analyse Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour blindness

MONTH	COURSE CONTENT	LEARNING OUTCOME	SKILL	TEACHING METHOD
September	**-Unit-IX Biotechnology and its Applications** **Chapter-11: Biotechnology - Principles and Processes Genetic Engineering** **Chapter-12: Biotechnology and its Application**	Students will be able to 1.Explain the Principles and Processes Genetic Engineering (Recombinant DNA Technology). 2. Analyze Application of biotechnology in health and agriculture: 3.Explain Human insulin and vaccine production, 4.Explain stem cell technology, gene therapy. 5 Exemplify genetically modified organisms - Bt crops; transgenic animals. 6.Analyze biosafety issues, biopiracy and patents.	1.Cognitive skills 2 Analytical skills 3 Critical thinking skills 4 Problem solving skills 5.Observation skills	Hands on Practical To Study the effect of different temperatures or three different pH on the activity of salivary amylase on starch

October	Unit-VIII Biology and Human Welfare Chapter 7 Evolution Chapter-8: Human Health and Diseases Chapter-10: Microbes in Human Welfare	Students will be able to 1.Identify Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; 2. Explain Basic concepts of immunology - vaccines; cancer, HIV and AIDS 3.Discuss Adolescence - drug and alcohol abuse. 4. Discuss use of Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use. 5 explain theories of evolution 6 Differentiate between homologous and analogous organs 7.Explain adaptive radiation with suitable examples 8 Explain the stages in human evolution .	1.Cognitive skills 2 Analytical skills 3 Critical thinking skills 4 Problem solving skills 5.Observation skill	Hands on practicals Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images. Comment on symptoms of diseases that they cause. .Class discussion through online teaching followed by online assessments

November **December-March**	Unit-X Ecology and Environment Chapter-13: Organisms and Populations Chapter 14 : ecosystem Chapter-15: Biodiversity and its conservation Pre-boards and Revision	Students will be able to 1 Define. Organisms and environment: Habitat and niche, population and ecological adaptations; 2. Explain population interactions - mutualism, competition, predation, parasitism 3.Analyse population attributes - growth, birth rate and death rate, age distribution. 4. Explain Biodiversity - Concept, patterns, importance. 5.Analyse causes of loss of biodiversity. 6 Discuss biodiversity conservation, hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, 7.Identify biosphere reserves, national parks, wildlife, sanctuaries and Ramsar site	1.Cognitive skills 2 Analytical skills 3 Critical thinking skills 4 Problem solving skills 5.Observation skill	Hands on Practical 1.Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them. 2 Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organism 3.Class discussion through online teaching followed by online assessments

Prescribed Books:
1. Biology, Class-XII, Published by NCERT
2. Other related books and manuals brought out by NCERT (including multimedia)
3. Biology Supplementary Material (Revised). Available on CBSE website.

Unit	Title	Marks
VI	Reproduction	14
VII	Genetics and Evolution	18
VIII	Biology and Human Welfare	14
IX	Biotechnology and its Applications	12
X	Ecology and Environment	12
TOTAL		70

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