SURENDRANATH CENTENARY SCHOOL, RANCHI

ANNUAL PLAN (2023-2024)

ENGLISH CORE (301)

CLASS: XII		BOOKS : FLAMINGO AND VISTAS				
MONTH	CHAPTER	PDS	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/PT/T1
APRIL	CH-Comprehension, **The Last Lesson** SDG 16-Peace Justice and Strong Institutions; **My Mother At Sixty Six; The Third Level; The Lost Spring** SDG 1- No Poverty	18	• Comprehension ; Notice ;The Last Lesson SDG 16-Peace, Justice And Strong Institutions. Life skills-Communication and Collaboration • My Mother At Sixty Six Life skill - Critical Thinking • The Third Level Life Skills- Coping with Emotion. • The Lost Spring SDG 1- No Poverty Life skills - Critical Thinking and Problem Solving, Communication, Collaboration Letter Writing (Editor); Assessment of the chapters taught in April. ACTIVITY- 1 **Subject Enrichment**- Activity: Debate on "Linguistic Chauvinism" Should Be Encouraged Skills: Communication and Collaboration ACTIVITY -2 Group discussion on availability of education for	➢ Students are made to realize the futility of war ➢ Peace is the ultimate solution ➢ Importance of knowing a language especially the ˙ mother tongue ➢ Learn to do away with procrastination ➢ Develop the need of emotional connect with the elders at home ➢ No one is immortal ➢ Understand the poetic devices ➢ Contrast the modern world and the ancient worlds ➢ Understand that anxiety is the main cause of problems ➢ Look for solutions rather than running away from problems ➢ Poverty and squatters are the hindrances to a nation's growth ➢ Need for strong hold over refugees ➢ To lend a helping hand in the development of the impoverished	Students will be able to – ➢ Appreciate tolerance ➢ Try to know their mother tongue if they do not know it ➢ Do their work on time ➢ Respect elders at home ➢ Be critical thinkers ➢ Have concern for the poor	**UT-1 (24.4.23) Comprehension Notice The Last Lesson My Mother At Sixty Six**

				the poor, problems and their dreams. Skills: Critical Thinking and Problem Solving, Communication, Collaboration		
MAY	CH-**Letter to the Editor;** **The Tiger King** SDG 15- Life On Land	12	• The Tiger King SDG 15- Life On Land. Lifeskill- Creativity	➢ Enriching the vocabulary ➢ Giving practical knowledge to students to write letters pertaining to issues affecting a mass of people ➢ Sensitizing towards conservation of wild life ➢ Concern for lives on land to be made clear		
JUNE	CH- **The Tiger King** SDG 15- Life On Land; **Deep Water; An Elementary School Classroom In a Slum Report Writing**	11	Deep Water SDG 3- Good Health and Well being. Life skills- Critical Thinking Problem solving, Communication, Collaboration • Report Writing- Life Skills: Creativity, Communication. ACTIVITY-1 **Art Integrated Learning** : Poster Making on Extinction and Conservation of Wild Life. ACTIVITY-2 **Experiential Learning**: Interviewing family to understand the phobias they suffered from. To be done in A4 sized sheet, video of the same to be recorded and submitted.	➢ Sensitizing towards callousness of human beings towards innocent animals ➢ Acquiring a problem solving attitude ➢ strengthen their logical and critical thinking skills ➢ to analyze fear psychologically and reflect on the steps to overcome ➢ develop an understanding of another person's experience. ➢ introspect on their fears and think of strategies of overcoming it in a ➢ controlled environment ➢ Understanding Dos and Don'ts of a report ➢ Language proficiency ➢ Develop concern for the underprivileged ➢ Respect the opportunity for getting education	Students will- ➢ Not hit animals ➢ Be able to solve problems ➢ Learn to overcome fear ➢ Be able put themselves in someone else's shoes ➢ Respect what they have and the slum children don't have ➢ Understand All that Glitters Is Not Gold	

				ACTIVITY-3 **Subject Enrichment** Reports based on Education/Sports/Pertaining to Students to be read and brought to the class for discussion. ACTIVITY=4 **Subject Enrichment** Prepare a short PPT showing the plight of students studying in a slum school	➢ Compare the benefits we get as compared to the those who go to village/Govt. schools ➢ Outwardly shows are deceptive		
JULY	CH- **Report Writing; Notice Writing; Formal and Informal Invitations and Replies; Case Based Comprehension; Journey to the End Of the Earth** SDG 13- Climate Action**; Keeping Quiet** SDG 16 Peace Justice and Strong Institutions; **Article Writing**	23	• Report Writing- Life Skills: Creativity, Communication Notice writing- Life Skills: Creativity, Communication • Formal and Informal Invitation and Replies Life Skills: Creativity, Communication. • Case Based Comprehension. • Journey to The End Of The Earth. SDG 13 - Climate Action. Life skills- Communication, Critical Thinking Problem Solving and Collaboration • Keeping Quiet • Article Writing-Listening Skill and Speaking Skills Life Skills- Communication &Collaboration	➢ Enrich the vocabulary ➢ Help them learn creative writing ➢ Make it clear how to write a comprehensive notice or a report ➢ Write report on general topics ➢ Teach rules pertaining to the invitations ➢ Usage of proper and formal words in drafting invitations ➢ Techniques to follow while reading a comprehension ➢ How to make use of the given data in the form of graph etc ➢ Appreciate and empathize with and follow the initiatives taken at national and international levels for a sustainable earth. ➢ Understand the direct impact of carbon emissions which affect the ozone layer which in turn melts the polar ice layers	Students will- ➢ Be able to write reports ➢ Draft invitations in real life situations ➢ Be global citizens and help in sustaining the resources of the earth ➢ Answer comprehensions ➢ Recognise the need of quiet time and introspection	**UT-2 (17.7.23) Comprehension Third Level Deep Water The Lost Spring Report Writing**

				ACTIVITY-1 **Art Integrated Learning** - Students will prepare a flowchart on the benefit of meditation**. (Keeping Quiet)**Students will be asked to practise meditation in class and share their experiences with everyone. ➢ ACTIVITY-2 **Experiential Learning** Screening of a video on Greta Thunberg's role in climate conservation. Group Discussion on relationship between climate and environment. (**Journey to the End Of the Earth**)	➢ Understand what is "Students on Ice" programme and explore if possible the possibilities of joining it. ➢ Develop the attitude of caring for his/her immediate environment through practices like avoiding plastic, proper segregation and disposal of waste, judicious use of water and power, less use of fossil fuels, etc ➢ Understand the need of peace ➢ Understand the necessity of introspection ➢ Infers the meaning of the poem ➢ Participate in brainstorming activities and group discussions. ➢ Collect ideas of the given topic. ➢ Understand the importance of writing articles. ➢ Attempt to write articles using collected ideas. ➢ Make use of appropriate formats, expressions and vocabulary. ➢ Appreciate the role of mothers ➢ Appreciate what we have received from God ➢ Stay away from peer pressure ➢ True friends accept us the way we are	➢ Write articles ➢ Be able to communicate well ➢ Respect what mothers do for them ➢ Differentiate between good and bad pressure ➢ Choose friends wisely
	CH-**Job Application;**			➢ To teach students letter writing etiquette.	Students will-

AUGUST	**A Thing Of Beauty;** **The Enemy** SDG 4- Quality Education; **Article Writing;** **The Indigo** SDG 10 Reduced Inequalities	23	• Job Application Life skill-Creativity • A Thing Of Beauty • The Enemy, • Life skill-Critical Thinking • **Article Writing;** • **The Indigo** SDG 10 Reduced Inequalities ACTIVITY=1 **Subject Enrichment** Use of Fly Swatter to enhance the vocabulary and make it a fun learning. ACTIVITY - 2 **Experiential Learning-** Daffodils for reference poem. ACTIVITY -3 **PPT on Gandhiji's Non Cooperation Movement - its success and failure.**	➢ To learn the forms of different types of letters ➢ To enable the students to know and learn about the overall condition of people of England when this poem was written ➢ To enable the students to correlate the poem with contemporary scenario ➢ To enable the students to appreciate the literary beauty of the poem ➢ To make the students realise the essential worth of human life and universal brotherhood ➢ Make them understand their duty towards the globe ➢ To understand the importance of a good leader and team work ➢ To know that it requires a lot of hard work and patience to achieve something big and great	➢ Write applications for jobs ➢ Understand the uselessness of wars ➢ Comprehend that life means ups and downs and that there is beauty even in that ➢ Learn leadership ➢ Be patient and not to look for immediate results	
SEPTEMBER	CH-**The Rattrap ;** **On the Face of It**	19	• The Rattrap - Life skills-Critical Thinking Problem Solving, Collaboration and Communication • On the Face Of It ACTIVITY **Experiential learning**	➢ The students will appreciate the unique fairy tale quality of the story and the skill of the writer. ➢ The students will learn about the human tendency to redeem oneself from dishonest ways. ➢ They understand the characters and appreciate their qualities.	Students will- ➢ Show concern for human values ➢ Realise the need of friends is important ➢ Realise they can bring about a change if they wish to	**TERM I EXAM** **Syllabus till September**

				Character Cards and Press Conference on the lesson The Rattrap	➢ They will understand that the whole world is nothing but a big rattrap. The moment anyone touches the bait, the rattrap closes in on him. Then everything comes to an end ➢ They will understand that we can change a person from his evil thoughts by showing love and compassion. ➢ To enable the students to understand the meaning of words and phrases ➢ The students are able to maintain their listening skills for a reasonable length of time. ➢ Students are able to analyze their strengths and weaknesses ➢ Develop empathy and connectivity ➢ Learn trust and openness	➢ Empathise and connect	
OCTOBER	CH-**Memories Of Childhood-The Cutting Of My Hair and We Too Are Human Beings;** **A Roadside Stand;** **Aunt Jennifer's Tigers**		16	• Memories of Childhood-The Cutting Of My Hair and We Too Are Human Beings**;** SDG 10-Reduced Inequalities • A Roadside Stand • Aunt Jennifer's Tigers ACTIVITY- 1 **Experiential Learning:** Students will go to a shop like the roadside stand in their locality and talk to the owner about the plight they suffer. The interview will be	➢ To teach the importance of justice and equality ➢ Familiarize them with the universal concept of discrimination on the basis of caste, nationality, religion and gender ➢ Understand the biographical accounts of women from the marginalized societies ➢ Understand the common factors, the hardships and the indignations suffered by the writers as they grew up in societies where	Students will- ➢ Discrimination is not justified ➢ Respect everyone irrespective of their social status ➢ Sympathise with others ➢ Learn to give equal respect to their spouse ➢ Be gender equal ➢ Be able to plan well	

			documented on an A4 sized sheet. ACTIVITY -2 **Art Integrated Learning**: Read the part of the constitution referring to equality and prepare a street play on solution to discrimination and inequality. Konkani Language to be incorporated along with the English language.	ideals of justice, equality and liberty were words found only in textbooks ➢ A Roadside Stand will develop sympathy towards the poor people ➢ Callousness of the city dwellers will be discussed ➢ Students will be made to appreciate the feminist aspect portrayed in the poem ➢ To learn that marriage is never one way ➢ Identify the poetic devices ➢ Teach equality between the two genders ➢ Importance of courage and confidence to be highlighted ➢ Life in a prison – problems faced by the inmates ➢ What happens when an innocent being subjected to torture and trial ➢ Presence of mind and smartness can over power others & a good planning works well	
NOVEMBER	CH-**Poets and Pancakes;** **The Interview;** **Going Places**	18	**Project Work** Prepare a project on interviews of 5 personalities from diverse areas on their interviews. Write a critical analysis on your observation on the interviews selected by you.	➢ To notice the drastic change in the film making industry ➢ To make them aware of the technical terms involved in film making ➢ Roles and responsibilities shouldered by the team ➢ To learn how to organise an interview ➢ No one should dig into the personal lives of any one ➢ Process of interview	Students will- ➢ Be able to interview their friends and family ➢ Realise the evils of infatuation ➢ Sort out the problems of adolescence to a great extent	•

				➢ To teach that infatuation and attraction during adolescence in natural ➢ Adolescents should not give in to hero worshipping ➢ Imagination and reality are two opposites, the former tends to mislead completely ➢ Adolescents should be focused and determined	➢ Focus more on career	
DECEMBER	CH- Writing Skills	18	ACTIVITY -1 **Subject Enrichment:** Conducting ASL for the Boards	➢ To make the format and rules clear once again ➢ To clear the doubts in the prose pieces – revision of the chapters ➢ To revise difficult and commonly confused parts of the poem To recollect the poetic devices to avoid errors		
JANUARY		19	Revision as per the need of students			**PRE BOARDS**
FEBRUARY			Study leave for Board Examinations			
MARCH			Board Examinations			

CLASS: X11 SUBJECT: PHYSICS			CLASS :- XII NCERT ,S.L.ARORA & NCERT EXAMPLER MANUAL(Blue Print)		BOOKS : NCERT SCIENCE TEXTBOOK FOR LAB	
MONTH	CHAPTER	NO.OF PERIODS	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/TERM
APRIL	**Chapter–1**: Electric Charges and Fields **Chapter–2:** Electrostatic Potential and Capacitance -	**22**	1.)Electric Charges; Conservation of charge, Coulomb's law. forces between multiple charges; superposition principle and continuous charge distribution. 2.) Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. 3.)Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly. wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside). 4.)Electric potential electric potential due to	1. To make the learners to understand the theoretical and mathematical concepts of Electric Charges and its Properties and Electrostatics forces and fields of different charge distributions. 2 .To make the learners to understand Electrostatics forces and fields of different charge distributions 3. To make the learners to understand The concept of electric flux. 4. The student will able to understand the concept of Electric	**1.**Students acquires the basic knowledge of Electric charges, concept of electrostatic force in vector form different distribution of charges, Electric field produced by different distribution of charges and its mathematical analysis. **2.**Student will be able to relate the phenomena of charging of a body with daily life. Student will be able to relate the Electrical potential with electric field **3.**Student will be apply analyze and evaluate the Gauss law and its application in numerical 4.Students will able to apply ,analyze and evaluate the electric potential due to different charges.	

			a point charge, a dipole and system of charge; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field ***PRACTICAL 1*** . <u>To determine the resistivity of two/three wires by plotting a graph between potential difference versus current.</u> ***PRACTICAL 2*** <u>To find the resistance of a given wire/standard resistor using a metre bridge</u>.	potential due to different charge distributions and its relation between electric field. To determine the resistance per cm of a given wire by plotting graph of potential difference versus current, and hence to determine its resistivity.	Students learn Ohm's law. Students know the relation between voltage, current and resistance. Students learn how to find out the resistivity of the material of a give wire.	
MAY	**CH- 2** Electrostatic potential and capacitance cont…. **Chapter–3:** Current Electricity	**10**	Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization , capacitors and capacitance, combination of and in	1.To make the learners to understand the concept of Electric potential due to different charge distributions .	1. Student will be able to understand the working of charge storing device i.e, capacitor. 2. The student will able to apply the application and	**UT 1:- May 2023**

| | | | parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.Electric current, flow of electric charges in a metallic conductor. Drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity.

PRACTICAL 3:-

. <u>To verify the laws of combination (series) of resistances using a metre bridge.</u>
OR
<u>To verify the laws of combination (parallel) of resistances using a metre bridge.</u> | 2. The students will learn about the capacitance, dielectrics and its polarization. The student will able to learn about the application and evaluation based problems on capacitance.

3.To make the learners to understand the concept of electric fields and its relation between electric field.

To make the learners to understand the concept of different electrical devices | evaluation based problems on capacitance.

3.Students will be able to understand the practical application of resistors and cells and it different combination in real life.

4.The student will able to apply the application and evaluation based problems on Ohm's Law.

4. Students are able to apply analyze and evaluate the concept of Potential difference and current and also the process of finding the unknown current in a loop using KVL and KCL.

Students will be able to operate different electrical instruments like POT, Meter bridge, Galvanometer, Voltmeter, ammeter etc | |
| | **Chapter–3 cont……** | **15** | SUMER VACCATION

Internal resistance of a cell, potential difference and emf of a cell, combination | 4.To make the learners to understand the concept of different electrical devices like | 5.Students will be able to operate different electrical instruments like POT, Meter | JUNE,2023 PTM |

| JUNE | Chapter–4: Moving Charges and Magnetism | | of cells in series and in parallel 3) Kirchhoff's laws and simple applications, Wheatstone bridge.

Concept of magnetic field, Oersted's experiment. Biot - Savart Straight and toroidal solenoids (only qualitative treatment),

force on a moving law and its application to current carrying circular loop..Ampere's law and its applications to infinitely long straight wire.

PRACTICAL 4:-

<u>To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.</u>
OR
<u>To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.</u> | wheat stone bridge and its application in meter bridge and potentiometer with real life application.

1.To make the learners to understand the concept of relation between electricity and magnetism and analysis of magnetic field for different kind of symmetrical structure.

To determine the resistance of a galvanometer by half deflection method and to find its figure of merit. | bridge, Galvanometer, Voltmeter, ammeter etc. also they learned to find the least count of given measuring instrument

1.Student will learn about the relation between electricity and Magnetism and different methods to find the Magnetic field due to different types of conductor

Students understand the various components used in the experiment.

Students learn the concept, 'figure of merit'.

Students are able to construct circuits based on circuit diagrams. | |

| JULY | Chapter–4: Moving Charges and Magnetism cont….. Chapter–5: Magnetism and Matter | 22 | Force on a moving charge in uniform magnetic and electric fields.

Force on a current-carrying conductor in a uniform magnetic field, definition of ampere, torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying definition of ampere, torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole . and its magnetic dipole moment, magnetic dipole moment of a revolving electron, magnetic field intensity due to a magnetic dipole | 2.To make the learners to understand the concept different measuring devices like galvanometer, voltmeter and ammeter and interrelation between them

3. To make the learner to understand the different kinds of magnetic material and earth's magnetic field. | 2. Student will learn about the conversion of galvanometer into ammeter and voltmeter of desired range.

3. To make the learner to apply the different kinds of magnetic material and earth's magnetic field. | |

			(ii) Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths, permanent magnets **PRACTICAL 5:-** To find the value of v for different values of u in the case of a concave mirror and to find the focal length.	To find the value of v for different values of u in the case of a concave mirror		
AUGUST	**CH:-06** ELECTROMAGN ETIC INDUCTION CONT…… **Chapter–7:** Alternating Current	**22**	1)Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Eddy currents. 2)Self and mutual induction Alternating Current Current; Lenz's Law, Eddy currents. Self and mutual induction Alternating currents, peak and RMS value of alternating current/voltage; reactance and Alternating Current Self and mutual induction impedance LC oscillations (qualitative treatment only), LCR series circuit, impedance; LC oscillations (qualitative treatment	To make the learners to understand the concept Electromagnetic Induction of single and double coil. Students will Understand about the different method to induce an emf in a given conductor which is useful to understand the concept of Mutual and self induction, generator and transformer. Students acquires the basic knowledge about the Principle construction working and real life application	Students will learn about the different method to induce an emf in a given conductor which is useful to understand the concept of Mutual and self induction. Students able to apply the basic knowledge about the Principle construction working and real life application of Transformer and Dynamo. Students will able to analyze and evaluate about the emf, RMS, peak value of currentTo make the learners to understand and apply the application based concept of Electromagnetic Induction (Generator, Transformer, choke coil)	UT2 AUG.2023 PTM :- AUG,2023

Month	Chapter	No.	Content	Objectives	Learning Outcomes	Exam
			only), LCR series circuit, resonance Power factor, wattless current. AC generator and transformer Basic idea of displacement current. ***PRACTICAL 6:-*** To find the focal length of a concave lens using a convex lens.	of Transformer and Dynamo. To find the focal length of the given concave lens	Students understand different types of mirrors and their image properties. Students learn and apply the mirror formula.	
SEPTEMBER	**Ch 8 :- Electromagnetic Waves Chapter -9:** Ray optics	**10**	Electromagnetic waves, their characteristics, their Transverse nature (qualitative ideas only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses. **Ray Optics**: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and its applications, optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula &magnification. ***PRACTICA L 7-*** To determine the angle of minimum deviation	To make the learners to understand the generation and real life application of electromagnetic wave depending upon the value of wavelength and frequency. To make the learners to understand the applications of different lenses, mirrors and optical instrument in our daily life. To make the learners to understand the applications of different lenses, mirrors and	Student acquires knowledge about the Practical application of EMW in our Daily life and also able to analyze and comparison between different EM waves. To make the learners to apply and evaluate the applications of different lenses, mirrors and optical instrument in our daily life. Student will learn about the different types of mirror and	**TERM I EXAM**

			<u>for a given prism by plotting a graph between the angle of incidence and the angle of deviation.</u>	optical instrument in our daily life.	lenses and respective ray diagrams for image formation along the mathematical tactics and Analysis	
OCTOBER	**Chapter -9:** Ray optics CONT…… **Chapter–10:** Wave Optics	20	**Ray Optics:** Power & combination of a lens and a mirror, refraction and dispersion of light through a prism. Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression Coherent sources and sustained interference of light, diffraction due to a	1. Student will learn about the different types of mirror and lenses and respective ray diagrams for image formation along the mathematical tactics and Analysis. 2. Student will learn the different optical phenomena of in our daily life like Colour of a sky and cloud, Advanced sunrise and delayed sunset. 3.Student are able to differentiate between the ray and wave nature of a light 4. To make the learners to understand the difference between ray optics and wave optics and different optical phenomena such as interference& diffraction.	Student are able to differentiate between the ray and wave nature of a light Student will learn about the different types of mirror and lenses and respective ray diagrams for image formation along the mathematical tactics and Analysis. Student will learn the different optical phenomena of in our daily life like Colour of a sky and cloud, Advanced sunrise and delayed sunset etc. 3.student will able to apply the concept of Huygen's principle .	

			single slit, width of central maximum. ***PRACTICAL 8*** To determine refractive index of a glass slab using a travelling microscope.	To determine the refractive index of a Glass slab using travelling microscope	To make the learners to different optical phenomena such as interference& diffraction.	
NOVEMBER	**Chapter–11**: Dual Nature of Radiation and Matter **Chapter–12:** Atoms **Chapter–13:** Nuclei **Chapter -15**: Semi Conductor devices	**15**	Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric. Dual nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation. Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum. Composition and size of nucleus, Radioactivity, and their properties;. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.Energy bands in conductors, semiconductors and insulators (qualitative ideas	1.To make the learners to understand the dual nature of radiation of light as practical and wave 2.To make the learners to understand the basic structure of atoms and nucleus proposed by different scientists and its importance in our life. 3.To make the learners to understand the importance and significance of semiconducting devices in our daily 4.To make the learner understand how they are different from conductor and insulator by explaining different semiconducting devices	Learners will be able to understand the dual nature of light (Wave and Particle) along with experimental and mathematical verification. Learners will be able to understand the Concept of atoms and nuclei with help of different models developed by different scientists (Rutherford's model, Bohr's model etc.) Learners will be able to apply and analyze the Concept of atoms and nuclei with help of different formula	TERM 2 EXAM

			only)Semiconductor diode - I-V characteristics in forward and reverse bias **PRACTICAL:-** **REVISION**			
DECEMBER	**REVISION**	**22**	REVISION	Student will able to recapitulate the previous knowledge		PTM 2
JANUARY	**REVISION**	**10**	REVISION	Student will able to recapitulate the previous knowledge		PRE BOARD EXAM.

			BOOKS: NCERT CHEMITRY TEXTBOOK FOR CLASS XII, NCERT EXEMPLAR			
CHEMISTRY						
MONTHS	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**UT/PT/T1**
APRIL	**CH-2** **Solutions**	15	*Solubility: solubility of solid in liquid and factors affecting it. Solubility of gas in a liquid and factors affecting it (Henry's law and its application) *Vapour pressure of liquid solutions and factors affecting it. *Raoult' s law for solution containing volatile solute and non – volatile solute. *Ideal and non – ideal solution, Types of non – ideal solution, Azeotropic mixture and types of Azeotropic mixture. *Colligative property: *Elevation in boiling point,, *Depression in freezing point, *Relative lowering of vapour pressure , *Osmosis, osmotic pressure, Reverse *Osmosis and its application,	Students will: * Understand the formation of different types of solutions. * gain knowledge about concentration of solution in different units *understand Henry`s law and Raoult`s law. * acquire knowledge to differentiate between ideal and non -ideal solutions *understand deviations of real solutions from Raoult`s law Types of solution, expressing concentration of solutions. *gain knowledge about Colligative properties of solution and corelation with molar masses of solute *know about Abnormal molecular mass, *Vant Hoff's factor *Understand and explain abnormal colligative properties exhibited by some solutes in solutions.	Students should be able to: * Explain the formation of different types of solutions. *Write the formula of concentration terms and solve its numerical *state and explain Henry`s law and Raoult`s law. *Classify solution as ideal and ideal *Define colligative properties and discuss different reasoning questions. *describe colligative properties of solutions and correlate these with molar masses of the solutes *explain abnormal colligative properties exhibited by some solutes in solutions.	

| | | | *Abnormal molecular mass,
*Van't Hoff factor.
ACTIVITY- 1
Experiential Learning:
Children will make ice cream using the concept of depression in freezing point concept during summer vacation and relate it to the technique used by kulfiwala in making ice cream.

Skills: Experimental and analytical skill.
ACTIVITY -2:

Art integrated: collage making on practical application of colligative properties in our daily live.

Skills: Creative thinking

ACTIVITY -3

Discussion about RO water purification technique and ways to reuse RO waste water. | | | |
| | | | | | | |

			Skills: problem solving.		

APRIL - MAY	CH-3 **Electrochemistry**	18	*Redox reactions, Electrochemical cell, cell representation and function of salt – bridge, Electrode potential, Cell potential, EMF
			*Measurement of electrode potential and cell potential, Nernst equation, equilibrium constant from Nernst equation,
			*Electrochemical cell and Gibbs energy of reaction.
			*Conductance, specific conductance, molar conductivity describe an electrochemical cell and differentiate between galvanic and electrolytic cells.
			*Variation of conductance, conductivity and molar conductivity with concentration.
			*Kohlrausch law of independent
			  migration of ions and its application.
			*Electrolytic cell, Faraday's law of
				Students will :
				
				*Understand the concept of Redox reactions, Electrochemical cell, cell representation function of salt – bridge, *acquire knowledge of Electrode potential, Cell potential, EMF.
				*gain knowledge of Measurement of electrode potential and cell potential,
				*get the understanding of Electrochemical cell and Gibbs energy of reaction
				*understand the meaning of Conductance, specific conductance, molar conductivity
				*acquire the concept to apply Nernst equation for calculating emf of galvanic cell and define standard potential of the cell.
				*understand relation between standard potential of the cell,
				*gain knowledge of Gibb`s energy of cell reaction and its equilibrium constant.
					Students should be able to :
					
					*Explain the Redox reactions, Electrochemical cell, cell representation and function of salt – bridge, Electrode potential, Cell potential, EMF.
					*Discuss the measurement of electrode potential and cell potential, Nernst equation, equilibrium constant from Nernst equation,
					*Derive the relation between electrochemical cell and Gibbs energy of reaction
					*Define Conductance, specific conductance, molar conductivity *describe an electrochemical cell and
					 differentiate between galvanic and electrolytic cells
					*Solve Nernst equation to calculating
					  emf of galvanic cell and define	

| | | | electrolysis.
*Batteries: primary batteries and
  secondary battery, fuel - cell.
*Corrosion and methods to prevent
  corrosion.

ACTIVITY -1

Experiential learning :

Children will perform experiment to calculate the emf of a galvanic cell and also electroplate spoon in the laboratory.

Skills: Curiosity , analytical skill

ACTIVITY-2:

Children will do a survey on the different types of batteries available in the market and compare them with respect to utility, pollution and economically viability and make a presentation on it. | *understand the difference between ionic and electronic conductivity.
*understand variation of conductance, conductivity and molar conductivity with concentration.
*Gain knowledge of Kohlrausch law of independent migration of ions and its application.
*Enhance concept of electrolytic cell, Faraday's law of electrolysis.
*Gain knowledge about batteries: primary batteries and secondary battery, fuel - cell.
*Understand corrosion and methods to prevent corrosion. | standard potential of the cell.
*derive relation between standard
  potential of the cell, Gibb`s energy
  of cell reaction and its equilibrium
  constant.
*differentiate between ionic and
  electronic conductivity.
*Discuss variation of conductance,
  conductivity and molar conductivity
  with concentration.
*State of Kohlrausch law of independent migration of ions and its application.
*Explain electrolytic cell and state Faraday's law of electrolysis.
*Recall Batteries: primary batteries and secondary battery, fuel - cell.
*Discuss corrosion and methods to prevent corrosion. | |

			Skills: Critical thinking			

JUNE	**CH- 4**
	
	Chemical kinetics
		15	*Average and instantaneous rate of a reaction
			*Factors affecting rate of reaction
			*Order and molecularity of reaction
			*Rate law and specific rate constant: integrated rate equation and half life only for zero and first order.
			*Concept of collision theory only elementary idea.
			
			ACTIVITY 1:
			 To observe the rate of reaction by varying the concentration and temperature for a given reaction and document their observation in the form of a project.
			Skills: analytical skill
				Students will :
				
				 * understand the average and instantaneous rate of a reaction
				*gain knowledge to express the rate of a reaction in terms of change in concentration of either of the reactants or products with time.
				*understand difference between elementary and complex reactions.
				* acquire knowledge about rate constant.
				and dependence of rate of reactions on concentration, temperature and catalyst
				*acquire the concept to derive integrated rate equations for the zero and first order reactions
				*understand collision theory
					Students should be able to :
					
					* write 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.
					*define rate constant.
					*discuss the dependence of rate of
					   reactions on concentration,
					   temperature and catalyst
					*derive integrated rate equations for
					   the zero and first order reactions
					*determine the rate constants for zero
					   and first order reactions
					*describe collision theory
						UT –I Solution & Electrochemistry

	CH-10		Haloalkanes	Students will :	Students should be able to :	

JULY	**Haloalkanes and haloarenes** **SDG No 3**: Good health and well being	15	Nomenclature, nature of C-X bond , physical and chemical properties , mechanism of SN , optical rotation **Haloarenes:** Nature of C-X bond, substitution reaction, monosubstituted compounds. Uses and environmental effects of polyhalogen compounds. **ACTIVITY :1** **Group discussion**- "Can we do away with the use of DDT completely ''	*Acquire knowledge to name haloalkanes and haloarenes according to the IUPAC system of nomenclature from their given structures. *understand the reactions involved in the preparation of haloalkanes and haloarenes and understand various reactions that they undergo. *gain concept to correlate the structures of haloalkanes and haloarenes with the various types of reactions. *understand use of stereochemistry as a tool to get the reaction mechanism. *understand the applications of organo-metallic compounds and the environmental effects of polyhalogen compounds.	*Write the name of haloalkanes and haloarenes according to the IUPAC system of nomenclature from their given structures. * Recall the reactions involved in the preparation of haloalkanes and haloarenes and understand various reactions that they undergo. *correlate the structures of haloalkanes and haloarenes with the various types of reactions. * discuss stereochemistry as a tool to understand the reaction mechanism. * recall the applications of organo-metallic compound and highlight the environmental effects of polyhalogen compounds.	
			Alcohols :	Students will be :	Students should be able to:	

| JULY | CH-11

Alcohols, phenols and ethers. | 14 | * nomenclature, preparation of alcohols,physical and chemical properties (of primary alcohols only), * identification of primary, secondary and tertiary alcohols mechanism of dehydration, uses with special reference to methanol and ethanol.
Phenols : -
* Nomenclature , methods of preparation, physical chemical properties, acidic nature of phenol, electrophilic Substitution reactions, uses of phenols.
Ethers: -
* Nomenclature, methods of preparation, physical and chemical properties, uses.

ACTIVITY 1:

Identification of primary , secondary and tertiary alcohols by experimentation in laboratory. | * Understand Nomenclature of alcohols, phenols and ether according to the IUPAC system of nomenclature. *acquire knowledge the reactions involved in the preparation of alcohols, phenols and ethers *gain knowledge to correlate physical properties of alcohols, phenols and ethers with their structures. *Understand the chemical reactions of the three classes of compounds on the basis of their functional groups. | * Write the name of alcohols, phenols and ether according to the IUPAC system of nomenclature. * Recall the reactions involved in the preparation of alcohols, phenols and ethers * Discuss the physical properties of alcohols, phenols and ethers with their structures. * Recall the chemical reactions of the three classes of compounds on the basis of their functional groups | |

			Skills: analytical skill.		
AUGUST	CH-13 **Amines** SDG No 4 : **QUALITY IN EDUCATION**	14	*Nomenclature, Classification and structure of amines *Methods of preparation, *Physical Properties, Chemical properties *Identification of primary secondary & tertiary amines. * Diazonium salts: Preparation, Chemical reactions & importance in synthetic organic chemistry. **ACTIVITY 1 :** 'Group discussion': To understand the uses/application of amines in everyday life withvariousexamplesi.e.i n Explosives like TNT,TNB insecticides etc. **Skills:** Analytical skill	Students will * Understand the classification of amines *Gain knowledge of nomenclature of *Understand the methods of preparation of amines. *acquire the knowledge about properties of amines * understand preparation and properties of Benzene diazonium compound	Students should be able to: *classify amines . *Write IUPAC nomenclature of nomenclature of amines *Recall the methods of preparation of amines and properties of amines *Recall and discuss preparation and properties of benzene diazonium chloride	UT-II **CHEMICAL KINETICS & HALOALKANES AND HALARENES**
	CH- 14 **Biomolecules**	18		Students will :	Students will be able to :	

			*Classification (aldoses&ketoses), Monosaccharides(Glucose &Fructose), D-Lconfiguration, *Oligosaccharides(Sucrose,Lactose&Maltose) * Polysaccharides(Starch, Cellulose & Glycogens), *Importance of carbohydrates *Proteins: Elementary idea of amino acid, peptide bond & Polypeptides. *Proteins ,structure of proteins – primary, Secondary,tertiary structure & Quartenary structure (Qualitative Idea only) *Denaturation of proteins. *Enzymes , Hormones (elementary idea excluding structure) *Vitamins: Classification&Functions *Nucleic Acids–DNA &RNA **ACTIVITY-1:**	*gain knowledge about classification of carbohydrates, proteins, vitamins *understand the structure &functions of carbohydrates & protein. *understand functions of vitamins *acquire the knowledge of DNA & RNA structure and functions	*Recall the classification of carbohydrates, proteins, vitamins * Discuss the structure &functions of carbohydrates & proteins * Recall the functions of vitamins *Explain the structure and functions of DNA & RNA.	

				EXPERIENTIALACTIVITY: Prepare modals of the structure of DNA ,RNA ,Proteins for easy understanding. **ACTIVITY-2:** To prepare mind map for easy revision. **Skills**: Creativity			

CLASS: XII SUBJECT: MATHEMATICS (041)			BOOKS: NCERT MATHEMATICS TEXTBOOK, R.S. AGGARWAL, LAB MANUAL (Blue Print)			
MONTH	CHAPTER	No. of Periods	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/PT/T1
APRIL	CH-3. MATRIX CH:4 DETERMIN ANTS	25	Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices. Invertible matrices and proof of uniqueness of inverse, if it exists; (Here all matrices have real entries). Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. **Experiential Learning:** Will learn addition and multiplication of matrices. **Skills:** Curiosity, Critical Thinking ACTIVITY -1 They will also learn how to find area of a triangle by determinant method. **Skills:** Curiosity, Critical Thinking	➢ Perform the matrix operation of addition, multiplication and transposition. ➢ Express a system of simultaneous linear equations in matrix form. ➢ Solve a system of linear equations. ➢ Will know about invertible matrices and uniqueness of inverse. ➢ Area of a triangle by determinant method.	To add 2 matrices, Expressing matrix as sum of symmetric and skew symmetric matrices, To findinverse of a matrix by using elementary row transformations. To find area of triangle, To understand properties to simplifydeterminants, To solve system of equations using matrices.	UT I- APRIL PORTION: MATRICES.

MAY	CH-4.DETERMINANTS 1. RELATIONS AND FUNCTIONS	15	Adjoint and inverse of a square matrix. Consistency, inconsistency & number of solutions of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix. Relations and Functions: Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.	➢ Will be able to solve system of linear equations using matrix method. ➢ Will know about different types of relations and functions.	To identify one to one, onto andinvertible functions, To find inverse of a function if it exists., To identify whether the binary operation is associative, commutative., To find identity and inverse of binary operations	
JUNE	CH-2. INVERSE TRIGONOMETRIC FUNCTIONS 5. CONTINUITY AND DIFFERENTIABILITY	26	Inverse Trigonometric Functions. Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions. Continuity & Differentiability chain rule, derivative of inverse trigonometric functions, derivative of implicit functions. **Subject Enrichment:** To observe how to represent linear equations in matrix form, and get the value of unknowns. ACTIVITY -1 Graphs of inverse trigonometric functions. **Art Integrated:** Model of graphical representation of inverse trigonometric functions. **Skills:** Creative Thinking ACTIVITY-3	➢ Will know about domain, range and principal value branch, ➢ Will know about continuity and differentiability of a function.	To identify one to one, onto andinvertible functions., To find inverse of a function if it exists., To identify whether the binary operation is associative, commutative., To find identity and inverse of binary operations To identify points of discontinuityof functions, To identify points ofnon-differentiability of functions,To find derivatives of exponential and logarithmic functions, To findderivatives of functions in parametric form	

			Graphs of continuous functions. **Subject Enrichment:** Will know about relation between Continuity and Differentiability.			
JULY	CH-6. APPLICATIONS OF DERIVATIVES 7. INTEGRALS **SDG**: Industry, innovation and infrastructure(9).	**30**	Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives. Applications of Derivatives: rate of change of bodies, increasing/decreasing functions, maxima and minima (1st derivative test motivated geometrically and 2nd derivative test given as probable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real- life situations). Integrals: Integration as inverse process of differentiation. Integration of a variety of functions by substitution. Integration using Partial fraction and by parts. Evaluation of simple integrals of the following types and problems based on them.	➢ Will know about exponential and logarithmic functions. ➢ Will know about Application of derivatives. ➢ How integration is used as inverse process of differentiation. ➢ Integration of variety of functions by substitution and using formula.	To find Rate of change of dependent variable due to change in independent variable, To identify increasing and decreasing functions, To find equation of tangent and normal at a point on the given curve, To find error in a variable due to error in another variable, To find approximate values of quantities using derivatives, To find maximaand minima points of a function. To solve both indefinite anddefinite integrals	**UT II-IN JULY** PORTION: DIFFERENTIATION

			$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{a^2 - x^2},$$ $$\int (x^2 - a^2)\,dx,$$ $$\int (a^2 \pm x^2)\,dx,$$ $$\int \frac{dx}{ax^2 + bx + c},$$ $$\int \frac{px + q}{\sqrt{ax^2 + bx + c}}\,dx,$$ $$\int \frac{px + q}{ax^2 + bx + c}\,dx,$$ $$\int \sqrt{ax^2 + bx + c}\,dx$$ **Group discussion**- Discussion on Integrals as inverse process of differentiation. Differentiation and Integration of variety of functions. ACTIVITY-1 Students will be asked to maximize or minimize a given fixed geometrical figure, when a particular condition is given.			
AUGUST	CH-8. APPLICATIONS OF INTEGRALS 9. DIFFERENTIAL EQUATIONS. 10.VECTORS.	30	Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals. Applications of the Integrals: Applications in finding the area under simple curves, especially lines, parabolas; area of circles /ellipses (in standard form only). Differential Equations: Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by	➢ Will know about definite integrals. ➢ Application of integrals in finding areas of simple curves. ➢ Will know about order and degree of a differential equation. ➢ Idea about general and particular solution. ➢ Concept of vectors.	To find Area using integration. To identify degree and order of adifferential equation, To form differential equation when solution is given, To solve differential equations using variable separable, homogeneous, Linear DE method. To find dot product and cross product of 2 vectors, To find Scalar triple product of 3 vectors,To find projection of one vector on another , To	

				method of separation of variables. Homogeneous and Linear differential equations. Vectors: Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. ACTIVITY – 1 Students will be asked to find the area of a bounded region under some given condition. **Subject Enrichment:** Will get the concept of finding area of a region using application of integrals.		analyze vectors ifdot product or cross product is zero	
SEPTEMBER	CH-11 3-D GEOMETRY	15		• Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors. • 1ST TERMINAL EXAM • 1ST TERMINAL EXAM • 3-D Geometry: Direction cosines and direction ratios of a	➢ Concept of 3-D geometry and hence concept of 3-dimensional figure.	To find equation of line in space in Cartesian and vector form, To find equation of plane in Cartesian and vector form , To find angle between 2 lines using DCS, To find distance between 2 lines, To find angle between 2 planes using normal lines, To find distance between a point from aplane	**TERM I EXAM**

			line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Distance of a point from a plane.		
OCTOBER	CH-12. LINEAR PROGRAMMING 13. PROBABILITY SDG/Life Skills/Values: No poverty(1), reduced inequality(10), peace, justice and strong institution(16).	22	• PUJA VACATION • Linear Programming: Introduction, related terminology such as constraints, objective function. • Optimization, different types of linear programming (L.P.) problems, graphical method of solution for problems in two variables. • Problem solving from LPP. ACTIVITY- 1 students will be asked to form models, where to maximize profit and minimize loss. **Experiential Learning:** Children will learn to apply LPP, to maximize profit and minimize loss in business. **Skills:** Curiosity, Critical Thinking. ACTIVITY -2 can do activity based on factories, by applying LPP, maximum profit at minimum fuel cost.	➢ Will learn about Linear Programming Problem. ➢ Will learn, how to maximize profit and minimize costs.	Will know about Conditional probability and multiplication theorem on probability. Will also know linear events and Baye's theorem.	

			Skills: Curiosity, Critical Thinking.			
NOVEMBER	CH-13 PROBABILITY SDG/Life Skills: Good health and wellbeing (3), life on land (15).	13	• Feasible and infeasible regions (bounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints). • Probability: Conditional probability, multiplication theorem on probability • Independent events, total probability theorem, Baye's theorem. • Random variable and its probability distribution (excluding mean & variance of random variable, Binomial probability distribution.) ACTIVITY1 Activity based on simple events, compound events and conditional probability. **Skills:** Creative Thinking.	To find probability using conditional probability formula, To identify and solve problem byBayes' theorem, To find probability distribution of different random variables, To identify and solve problem by using Bernoulli trials,	Students Learn about: Bayes' theorem, Bernoulli trials	

CLASS: XII SUBJECT: BIOLOGY			BOOKS: NCERT SCIENCE TEXTBOOK FOR CLASS XII			
MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**UT/PT/T1**
APRIL	Reproduction in Organisms / Sexual Reproduction in Flowering Plants / Human Reproduction **SDG (15)**: Life on Land	16	• Modes of Reproduction- asexual and sexual reproduction; Binary fission, sporulation, budding, gemmule formation, fragmentation; vegetative propagation in plants • Flower structure; development of male and female gametophytes; pollination- types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization. • Post fertilization events- development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; significance of seed dispersal and fruit formation • Male and female reproductive systems; microscopic anatomy of	➢ State the structure and function of floral parts including Sepal, petal, stamen, carpel ➢ Explain various techniques of outbreeding devices. ➢ Explain development of embryo and seed & food supply ➢ Classify plants as monocotyledon or dicotyledon and distinguish between them. ➢ Explain importance of apospory for hybrid seed production. ➢ State that the embryo sac produces an egg cell and polar nuclei. Students should learn the different methods of pollination.	Children learn the different modes of reproduction in plants and in humans. Students will be able to identify the different parts of the reproductive system and to list the various phases of reproduction. Students now know organs needed for pollination and their agents.	

			testis and ovary; gametogenesis- spermatogenesis and dispersal and fruit formation **Practical:** 1. Study the pollen germination on the slide. 2. Flowers adapted to pollination by different agencies. 3. Pollen germination through a permanent slide ACTIVITY- 1 **Art Integrated Learning:** Projects On Reproduction.			
MAY	Reproductive Health Heredity and variation	10	• Need for reproductive healthand prevention of SexuallyTransmitted Diseases (STDs);birth control- need andmethods, contraception and medical termination ofpregnancy (MTP);amniocentesis; infertility andassisted reproductivetechnologies - IVF, ZIFT,GIFT (elementary idea forgeneral awareness). • Mendelian inheritance; deviation from	Students will be able to ➢ Define reproductive health ➢ Discuss how the reproductive health related problem can be overcome. ➢ Rationalise the use of amniocentesis ➢ Narrate the reasons of population explosion. ➢ Interprets the relation between MMR, IMR and population explosion. ➢ Identify various contraceptive methods, their use, advantage and their side effects. ➢ Aware of different assisted reproductive technology for childless couple and their need for the society.	Students learn how reproductive health related problem can be overcome. Students become aware of different assisted reproductive technology for childless couple and their need for the society They understand how do they inherit traits from their parents.	

			Mendelism – incomplete dominance, co- dominance, multiple alleles and inheritance of blood groups. Pleiotropy; elementary idea of polygenic inheritance			
JUNE	Molecular Basis of Inheritance **SDG (15)**: Life on Land	15	• Chromosome theory of inheritance; chromosomes and genes; sex determination- in human being, bird and honeybee; linkage and crossing over; • Sex linked inheritance – haemophilia, colour blindness; Mendelian disorders in human – thalassemia; **Practical:** 4. Collect and study soil to study for texture, moisture and water holding capacity. 5. Identification of stages of gametes development. 6. Meiosis through permanent slides. ACTIVITY1 **Experiential Learning:** Flowcharts depicting pedigree chart	Students will be able to ➢ Define DNA, RNA, Replication, Transcription, Genetic code, Translation, Regulation of gene expression. ➢ Differentiate between transcription and translation ➢ Prepare the model of DNA, RNA, Nucelotide, Nucleoside. To learn different stages of gamete development in humans and plants.	Students learn and understand terms like replication, Transcription, Genetic code, Translation, Regulation of gene expression. Students should identify gametes as well as stages of Meiosis.	**UT-1 19-06-23 Chapter: 5 and 6**

| JULY | Molecular Basis of Inheritance / Evolution

SDG: Good Health and Well Being | 18 | • Chromosomal disorders in humans; Down syndrome, Turner's and Klinefelter's syndrome
• Pedigree Chart + Genetic code; Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication
• Central Dogma; transcription, translation; gene expression and regulation – lac operon
• Genome, Human and rice genome projects; DNA fingerprinting
• Homologous and analogous organs, hardy-weinberg's principle adaptive radiation.
Practical:
   7. To study presence of living organisms in water.
   8. Study of blastula through slides.
   9. Mendelian inheritance using seeds.
   10. Observation of pedigree charts. | Students will be able to distinguish between homologous and analogous organs. Hardy-weinberg principle is learnt by the students.

Students acquire knowledge on pedigree charts and monohybrid and dihybrid cross. | Students become aware of their ancestors and evidences of evolution. They learn the different principle in evolution.

Students will learn the names of living organisms in water, mendelian inheritance and pedigree charts. | |
|---|---|---|---|---|---|---|

			ACTIVITY-1 **Subject Enrichment** Research work on genetic disorders. Project files to be made.			
AUGUST	Human Health and Diseases/ Microbes in Human Welfare / Biotechnology-principles and Processes	17	• Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concept of immunology – vaccines. • Animal Husbandry, Plant breeding Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use Basic principles; tools of recombinants DNA technology Cloning vectors, competent host; Processes insertion, obtaining a foreign gene	Students will be able to ➢ Define diseases and symptoms ➢ Differentiate between the infectious and non infectious disease ➢ Describe the process of multiplication of HIV virus ➢ List out the name of microbes cause ringworm, filariasis, ascariasis and malaria. ➢ Explain the role of T – cell during organ transplantation. ➢ Define cancer and its types. ➢ Describe the harmful effects of drugs and alcohol abuse.	Students learn to differentiate between the infectious and non infectious disease. List out the name of microbes cause ringworm, filariasis, ascariasis and malaria. Describe the harmful effects of drugs and alcohol abuse. Students will be able to define terms related to Biotechnology.	**UT-2** **07-08-23** **Chapter:** **10 and 11**

				Students acquire knowledge on the number and concentration on plant species in a single quadrant.	Students understands mitosis and to calculate population density and frequencies.	
			product. • Application of Biotechnology in health and agriculture; Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organism -Bt crops; transgenic animals; biosafety issues, biopiracy and patents. **Practical:** 11/12. Study of plant population, density/frequencies by quadrant method. 13. Preparation of temporary mount onion root tip. ACTIVITY - 1 **Art Integrated Learning:** PowerPoint Presentation on artificial insulin, vaccine, GMO			
SEPTEMBER	Biotechnology and its Application **SDG(15):** Life on Land	10	• Application of Biotechnology in health and agriculture; Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organism -Bt	Students will be able to ➢ Learn Principle of technology, tools of recombinant DNA technology, selection of transferred and recombinant cell, mechanism of amplification of DNA ➢ Differentiate between DNA and recombinant DNA	Students learn: To differentiate between DNA and recombinant DNA They will be able to distinguish primary and secondary productivity, detritus and grazing food chain.	**TERM I EXAM Chapters: 2 to 11**

			crops; transgenic animals; biosafety issues, biopiracy and patents. • Abiotic and biotic factory responses; organisms and environment; Habitat and niche, population and ecological adaptions; population interaction- mutation, competition, predation, parasitism • Ecosystems: Patterns, components; productivity and decomposition ACTIVITY - 1 **Experiential Learning:** Concept map of process of cloning vector	➢ Explain recombinant DNA technology ➢ Students will be able to explain the different steps in decomposition ➢ They will be able to distinguish primary and secondary productivity, detritus and grazing food chain. They will be able to connect concepts of flow of energy through food chain and food web.	They will be able to connect concepts of flow of energy through food chain and food web.	
OCTOBER	Organisms and Populations / Ecosystem **SDG(15):** Life on Land	15	• Abiotic and biotic factory responses; organisms and environment; Habitat and niche, population and ecological adaptions; population interaction- mutation, competition, predation, parasitism • Ecosystems: Patterns, components; productivity and decomposition	➢ Students will be able to explain the different steps in decomposition ➢ They will be able to distinguish primary and secondary productivity, detritus and grazing food chain. They will be able to connect concepts of flow of energy through food chain and food web. ➢ Students will acquire knowledge about biotic and abiotic components, productivity, decomposition, energy flow, nutrient recycling, Detritus,	Students learn: about biotic and abiotic components, productivity, decomposition, energy flow, nutrient recycling, Detritus, humification, mineralization, standing crop, ecological succession.	

			• Population attributes- growth, birth rate and death rate, age distributions • Energy flow; pyramids of number, biomass, energy; nutrient cycles (carbon and phosphorous); ecological succession. **Practical:** 14. Study the effect of temperature on the activities of salivary amylase on starch. 15. Isolation of DNA.	humification, mineralization, standing crop, ecological succession. Students learn activity of saliva on starch and observe the DNA in a nucleus.	It creates awareness amongst learners of the structure of DNA.	
NOVEMBER	Ecosystem / Biodiversity and its Conservation SDG: Clean Water and Sanitation.	15	• Ecological services- carbon fixation, pollination, seed dispersal, oxygen release (in brief); Biodiversity- Concept, patterns, importance • Loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites. • Air pollution and its control; water pollution and its control; agrochemicals and their effects	➢ Justify the claim that free flow of solar energy is required support ecosystem succession ➢ Enhance awareness about environmental issues and their appropriate solutions. Identify the relationship between various organisms present in the world. ➢ Learn the basic concepts about interrelation and co relation of the individual in the ecosystem ➢ Get the importance of different methods of biodiversity conservation. ➢ Learn how every individual present in the ecosystem have a role to play in balancing the ecosystem and that biodiversity can influence the productivity of an area.	Students learn: the basic concepts about interrelation and co relation of the individual in the ecosystem. The importance of different methods of biodiversity conservation. How every individual present in the ecosystem has a role to play in balancing the ecosystem and that biodiversity can influence the productivity of an area.	**TERM II EXAM Chapters:** **2 to 8** **and** **11 to 13**

| | | | Solid waste management; radioactive waste management; greenhouse effect and climate change impact and mitigation; ozone layer depletion; deforestation; case study exemplifying success story addressing environmental issue(s).
Practical:
16. Controlled pollination
17. Disease causing organism
18/19. Adaptation in animals and Plants.

ACTIVITY1
Subject Enrichment:
Research on air, water and chemical pollution. | Students understand adaptation of organisms and how hybrid seeds/fruits can be produced. | Enhances their knowledge on environmental adaptation and diseases. | |

ECONOMICS:

MONTH	CHAPTER	NO. OF PERIODS	LEARNING OBJECTIVES	LEARNING OUTCOMES	TOPIC	UT/PT/T1
APRIL	**MACRO-NATIONAL INCOME AND RELATED AGGREGATES** **SDG (no. 12): RESPONSIBLE CONSUMPTION AND PRODUCTION**	**23**	➢ Identify basic concepts as flow of money between household and firms. ➢ Compare between definitions and components of GNI and GDP and recognise them as measures of national income.	➢ Recognise basic concepts as flow of money between household and firms. ➢ Analyse between definitions and components of GNI and GDP and recognise them as measures of national income. ➢ Able to differentiate between nominal and real GDP.	• An introduction- scope and significance of macroeconomics, basic concepts, classification of goods, concept and component of consumption and expenditure. • Concepts and components of investment, stock and flow, four sectors of economy, circular flow	

MONTH	CHAPTER					
			➢ Locate different between nominal and real GDP. ➢ Recognise various methods of calculating of national income- value added, income and expenditure method. ➢ Differentiate between national income, saving, consumption and investment. ➢ Learners will be able to measure income by adding the pre-tax income generated by the individuals and companies in the economy. ➢ Learners will also be helped in formulating policies for economic development	➢ Able to solve by implementing the formulas calculating of national income- value added income and expenditure method. ➢ Comparison between national income, saving, consumption and investment. ➢ Able to calculate income by adding the pre-tax income generated by the individuals and companies in the economy. ➢ Learners will be able to formulate policies for economic development.	of income, domestic and national concept of income, concept of national income. • Gross and Net concepts, market price and factor costs. • Aggregates related to national income, nominal and real GDP and welfare, Methods of calculating national income- value added, income and expenditure method. **ACTIVITY- 1** **Art integrated:** Present circular flow of income on A4 sheet. **Skills:** creative thinking	
MAY	**CH- MONEY AND BANKING** **SDG (no. 8): DECENT WORK AND ECONOMIC GROWTH**	**08**	➢ Learner will be provided with an introduction of money and its evolution through explanation of barter exchange. ➢ Identify various theories of money supply and money demand. ➢ Identify the working of monetary policy.	➢ Learner will recognise the meaning of money and its evolution through explanation of barter exchange. ➢ Recognise various theories of money supply and money demand. ➢ Implement the working of monetary policy.	• Meaning and evolution of money, forms of money. • Supply of money, measurement of money supply. **ACTIVITY- 2** **Experiential learning :** Visit to bank, enquire about the functioning of bank and prepare a report. **Skills**: critical thinking, curiosity	

JUNE	BANKING cont...	08	➤ Identify the meaning and functions of central and commercial banks. ➤ Identify the facilities provided by commercial banks. ➤ Identify the money creation by commercial bank. ➤ Recognise the measures to control money supply.	➤ Recognise the meaning and functions of central and commercial banks. ➤ Recognise the facility provided by commercial banks. ➤ Analyse the money creation by commercial bank. ➤ Recognise the measures to control money supply.	• Introduction, types of banks, money creation by the commercial bank, and control of money supply / credit supply by central bank in India.	**PTM :28/06/23**
	CH- INDIAN ECONOMY ON THE EVE OF INDEPENDENCE	18	➤ Analyse the state of Indian economy on the eve of independence. ➤ Discuss the factors that led to the under development and stagnation of the Indian economy. ➤ Recognise the common goals of five year Plans.	➤ Compare the state of Indian economy on the eve of independence. ➤ Relate the factors that led to the under development and stagnation of the Indian economy ➤ Recognise the common goals of five year Plans.	• Indian economy on the eve of independence, low level of economic development under the colonial rule, Agriculture sector, foreign trade, demographic condition, infrastructure. **ACTIVITY- 3** **Art integrated:** In A4 sheet, represent the comparison of condition of Agriculture, industrial and foreign trade during pre-independence to that of post-independence. • Skills- creative thinking, curiosity.	
	CH- INDIAN ECONOMY (1950-1991)		➤ Indian economy. Recognise the common goals of five year Plans.	➤ Learners are able to relate the five- years plan with the developmental strategies of our country.	• Introduction, goals of Five years Plans, Agriculture, industry and trade, trade policy, import substitution.	

JULY	**CH- INDIAN ECONOMIC DEVELOPMENT – LIBERALISATION, PRIVATISATION AND GLOBAISATION : AN APPRAISAL**	**10**	➢ Identify the background of the reforms policies introduced in India in 1991. ➢ Identify the mechanism through which reforms were introduced. ➢ Comprehend the process of globalisation and its implications for India.	➢ Able to relate the background of the reforms policies introduced in India in 1991. ➢ Recognise the mechanism through which reforms were introduced. ➢ Relate the process of globalisation and its implications for India.	• Indian economy during reforms- an assessment, conclusion, introduction, background, liberalisation, privatisation and globalisation.	**UT 1 – 10.07.23 MACRO:- Ch-3 ,4 IED: Ch-1**
					.	
	CH- HUMAN CAPITAL FORMATION **CH- DETERMINATION OF INCOME AND EMPLOYMENT**	**12** **22**	➢ Identify the concepts of human resources, human capital formation and human development. ➢ Recognise the link between investments in human capital. ➢ Identify the need for government spending on education and health. ➢ Compare the state of India's educational attainment. ➢ Identify the meaning of aggregate demand, aggregate supply and effective demand of economy. ➢ Recognise the components of AD. ➢ Determine the equilibrium level of income and employment.	➢ Recognise the concepts of human resources, human capital formation and human development. ➢ Relate the link between investments in human capital. ➢ Acquire the need for government spending on education and health. ➢ Enumerate the state of India's educational attainment. ➢ Recognise the meaning and concept of aggregate demand and aggregate supply. ➢ Able to analyse the components of AD. ➢ Able to describe the equilibrium level of income and employment. ➢ Recognise and relate the situation of excess and deficient demand.	• Introduction of human capital, sources of human capital, human capital and human development, state of human capital formation in India, Education sector in India, future prospect and conclusion. • ACTIVITY:- • Concept of aggregate demand, concept of aggregate supply, consumption and saving function, relation between them. • Short run equilibrium output-concept of short run, equilibrium output (GDP) ,Determination of equilibrium output, AS-AD approach and S-I approach.	

			Identify the concepts and situation of excess and deficient demand. Recognise the methods to correct excess and deficient demand.	➢ Able to draw the way to rectify the situations.		
AUGUST	**CH- PROBLEM OF DEFICIENT DEMAND AND EXCESS DEMAND**	**08**	➢ Identify the concept and situation of excess and deficient demand. ➢ Compare the differences between excess and deficient demand. ➢ Recognise the methods to correct excess demand and deficient demand.	➢ Recognise the concept and situation of excess and deficient demand. ➢ Evaluate the differences between excess and deficient demand. ➢ Able to solve through methods to correct excess demand and deficient demand.	• Some essential concept, problems of deficient demand problem of excess demand, measures to correct excess and deficient demand.	**UT-2 28.08.23 MACRO:- Ch-5,6 IED:- Ch- 2,3** **PTM: 26/08/23**
	CH- GOVERNMENT BUDGET	**17**	➢ Identify the various way o reallocations of resources. ➢ Identify the tax concessions and subsidies. ➢ Reducing inequalities of income and wealth. ➢ Compare the difference between revenue and capital receipts. ➢ Recognise the revenue deficits, fiscal deficits and primary deficit.	➢ Recognise the various way o reallocations of resources. ➢ Able to compute the tax concessions and subsidies. ➢ Reducing inequalities of income and wealth. ➢ Analyse the difference between revenue and capital receipts.	• Concept of government budget, objectives, structure/ components of budget, budget receipts- revenue and capital receipts, budget expenditure- revenue and capital expenditure, budget deficit.	
	CH- BALANCE OF PAYMENTS	**14**	➢ Identify the levels of international economic activity. ➢ Examine the economic relationships underlying the two basic sub- components of BOP.	➢ Recognise the levels of international economic activity. ➢ Evaluate the economic relationships underlying the two basic sub- components of BOP.	• Introduction and meaning of balance of payment (BPO), components/ structure of BOP account: current, capital and official reserve account, equilibrium and disequilibrium in BOP- BOP deficit.	

					ACTIVITY 5 : **ART INTEGRATED:** Prepare a database of your own household expenditure and income received and compute the credit, debit side. • **Skills:** creative skills, curiosity	
SEPTEMBER		14	➢ Learners will recall the knowledge gain by revising the chapter's taught.	Learners were able to answer the questionjs given t them.	• Revision of the CH- 3, 4 , 5 ,6 (MACRO) and CH-1,2,	**TERM I EXAM Macro:- Ch-1 to 9 IED:- Ch- 1 to 6**
OCTOBER	**CH- RURAL DEVELOPMENT**	07	➢ Recognise the state of rural areas in our country. ➢ Identify the sectors need to be developed for rural development. ➢ To develop the farm, home, public service and village community.	➢ Recognise the state of rural areas in our country. ➢ Compare the sectors need to be developed for rural development. ➢ Compute the farm, home, public service and village community.	• Introduction – rural development, credit and marketing in rural areas, agriculture market system, diversification into productive activities, organic system. • Puja Vacation. •	

	CH-EMPLOYMENT **SDG (no. 10): REDUCED INEQUALITIES**	**07**	➢ Identify few basic concepts relating to employment such as economic activity. ➢ Identify the nature of participants of men and women in various economic activities.	➢ Recognise few basic concepts relating to employment such as economic activity. ➢ Able to know the nature of participants of men and women in various economic activities.	• Employment growth, in formalisation and other related issues, worker and employment, participation of people in employment, self employed and hired worker, employment n firm, factories and offices, growth and change in structure of employment, in formalisation of Indian work force, unemployment government generations, conclusion. **ACTIVITY 6:** **ART INTEGRATED**: Poster making in favour of gender equality in employment. **Skills:** creative skills, innovative skills.	
NOVEMBER	**CH-ENVIRONMENT AND SUSTAINABLE DEVELOPMENT** **SDG (no. 11) – SUSTAINABLE CITIES AND COMMUNITY**	**10**	➢ Identify the techniques to restrain the use of natural resources to ensure their availability for future generations. ➢ Identify the importance of protecting the environment from getting exploited.	➢ Recognise the techniques to restrain the use of natural resources to ensure their availability for future generations. ➢ Recognise the importance of protecting the environment from getting exploited.	• Introduction, environment definition and functions, state of India's environment, sustainable development, strategies for sustainable development, conclusion. ACTIVITY : **EXPERINTIAL LEARNING:** Stay one day without electricity or any electronic gadget and experience the life naturally.	**Term 2:-** **Macro:** **Ch- 1 to 12** **IED:-** **Ch1 to 10**

	CH-DEVELOPMENT EXPERIENCES OF INDIA: A COMPARISON WITH NEIGHBOURS	12	➢ Able to figure out the trends in various economic and human development indicators of India and its neighbours. ➢ Assess the strategies of their governance of the countries.	➢ Able to judge the trends in various economic and human development indicators of India and its neighbours. ➢ Able to assess and judge the strategies of their governance of the countries.	• Introduction, developmental path- a snap shot view, demographic indicator, gross domestic product and sectors, indicators of human development, development strategies- An Appraisal, Conclusion. • Revision of unit- 1,2 (Macro) • Revision of unit- 3, 4, 5(Macro)	
DECEMBER		20	➢ Able to identify the formula used for solving the questions. ➢ Able to identify the way of framing the theoretical answer.	➢ Able to solve the questions using the appropriate formula. ➢ Able to write the theoretical answer.	• Revision of unit- 6,7(IED) • Revision of unit- 7, 8 (IED) • Revision of unit- 6, 7 (Macro).	**PTM :09/12/23**

CLASS: XII SUBJECT: COMPUTER SCIENCE(083)			BOOKS : COMPUTER SCIENCE by NCERT Computer Science by Sumita Arora			
MONTH	CHAPTER	No. of Periods	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/PT/T1
APRIL	Revision of Python topics covered in Class XI. SDG(4)	20	Character Set, Tokens, Dynamic Typing, Data Types, Mutable and Immutable, Type casting Flow of Control-- Compound Statement, if condition, if-else, Nested if, if-elif Looping Statements-- while, for, break, pass etc range(), continue, More on Loops-- loop else, nested loops Strings in Python, List, List of Functions, Tuples, Dictionary, Functions / methods in Tuples / Dictionary. **ACTIVITY- 1** -Identify various keywords/functions/Data Types/package/Modules etc ACTIVITY -2 -Practical's based on looping, List, Tuples, Dictionaries etc.	➢ Develop the basic computational skills ➢ Explain and use the concept of data types	Student should be able to apply the concept of function.	
MAY	Functions	12	Types of functions (built-in functions, functions defined in module, user defined functions) Creating user defined function, arguments and parameters, default parameters, positional parameters, **Suggested Practical:** Writing user defined functions for different tasks and using them in the program.	Apply the concept of Function Students learn about using user define functions.	Student should be able to apply the concept of function. Students will be able to know about using user define functions.	
	Functions	12	Function returning value(s), flow of execution, Scope of a variable (global scope, local scope). Name Resolution, Cases in	Students learn about function and implement them in python program.	Students will able to implement udf function in python program.	

JUNE			Scopes, Mutability/Immutability of Arguments and function calls **Suggested Practical:** Writing user defined functions for different tasks using return type and integrating in the program. ACTIVITY1 Students will be asked to identify various built-in functions, user defined functions etc. ACTIVITY –2 -Students will be asked to write functions based on function returning values ACTIVITY-3 Students will be asked to write functions using Global/Local Scope			
JULY	Introduction to files Text file **SDG(4)**	22	Exception Handling using TRY_Except_Fianlly Types of files (Text file, Binary file, CSV file), Advantages and disadvantages of Text/Binary Files, 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(), writing to a text file, Seek and tell methods, manipulation of data in a text file, Programs based on -- Searching, updating, counting, and merging text files. **Suggested Practical:** Read a text file line by line and display each word separated by a #.	➤ Explain and use the concept of file handling Students learn about using text file for storing and extracting data.	Student should be able to explain and use the concept of file handling. Students will be able to use text file for storing and extracting data.	Unit Test-1 10-07-2023 1. Class XI Revision 2. Functions in Python

			● Read a text file and display the number of vowels / consonants / uppercase/ lowercase characters in the file. ● Remove all the lines that contain the character 'a' in a file and write it to another file. ● Create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message. **ACTIVITY-1** Topic discussion on Project Synopsis forAISSCE-2023 Students will be asked to prepare list of Programs based on File Handling (Text File)			
AUGUST	Binary file: CSV file:	21	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, seek, tell etc Append and update operations in a binary file. import csv module, open / close csv file, Write into a csv file using csv.writerow() and read from a csv file using csv.reader( ) **Suggested Practical:** ● Create a binary file with roll number, name and marks. Input a roll number and update the marks. ● Write a random number generator that generates random numbers between 1 and 6 (simulates a dice). ACTIVITY - 1	➢ Explain and use the concept of Binary File Students learn about using CSV file for storing and extracting data.	Students will be able to use CSV file for storing and extracting data and apply various functions.	Unit Test-2 28-08-2023 1. Files-- Text Files

			: Students will be asked to prepare list of Programs based on File Handling (CSV File), TEXT file and Binary File.			
SEPTEMBER	Revision Data Structure	10	**Doubts Clearance on important topics specially related with program implementation** Stack, operations on stack (push & pop), Implementation of stack using list. **Suggested Practical:** Write a Python program to implement a stack using list. ● Create a CSV file by entering user-id and password, read and search the password for given userid. ACTIVITY - 1 : Students will be asked to prepare Menu driven Program based on Stack using LIST.	➢ Explain and use of Stack using Python List Students learn about Stack and write program using List to implement stack.	Student should be able to use basic data structure: Stacks Students will be able to write program using List to implement stack.	**TERM I EXAM** 1. Revision of Python topics covered in Class XI. 2. Functions in Python 3. File Handling in python
OCTOBER	**Database Management**	19	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) ▢ 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	➢ Explain and use of Python and Mysql ➢ Using MySQL connector fetching and displaying the data ➢ Use of Joins in Tables	Student should be able to use Database concepts, SQL along with connectivity between Python and SQL	

| | | | 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, joins: cartesian product on two tables, equi-join and natural join Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications. **Suggested Practical:** Create a student table and insert data. Implement the following SQL commands on the student table: o ALTER table to add new attributes / modify data type / drop attribute o UPDATE table to modify data o ORDER By to display data in ascending / descending order o DELETE to remove tuple(s) o GROUP BY and find the min, max, sum, count and average ● Integrate SQL with Python by importing suitable module. **ACTIVITY - 1** : Students will be asked to prepare Program based on Python and Mysql **ACTIVITY-2** | Students learn about using SQL commands to create database, table and write queries to retrieve data from table. | Students will be able to use SQL commands to create database, table and write queries to retrieve data from table and integrate with python to execute SQL commands. | |

| **ANNUAL, PLAN (2023,2024)** | | | | | |

			Students will write queries and find output based on Case studies given using MySQL			
NOVEMEBR	Computer Network	14	Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET) ● Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching) Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves) ● Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card) ● Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree) ● Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP ● Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names,	➢ Explain and demonstration of network based device and their uses	Student should be able to **ex**plain basics of computer networks.	**TERM-II** **1. Database using SQL** **2.Computer Networks**

Class: XII	BOOKS V.D. Sharma

| | | | URL, website, web browser, web servers, web hosting. **ACTIVITY - 1** : Students will be asked to prepare List of device, Network and Topologies used in School Campus. | | | |
| **JANUARY** | Pre board | | **Complete Syllabus** | | | |

SUBJECT physical Education (048)			**Sharwati Prakasan**			
			LAB MANUAL (Blue Print)			
Month	Chapters	No. of Periods	Learning objective	Learning outcome	Topics	UT/ PT/ T-1
April	Planingins in Sports SDG-8 Decent Work and orgnise idea	20	1. To make them understand about various committees and their Responsibilities 2. To make them understand about Tournaments- Knock-out, league or Round Robin and combination. 3. To make them understand about Procedure to Draw Fixtures: 4. To make them understand about intramural and Extramural: objectives and their Significance.	1. Students will be able to demonstrate the ability to apply on under stand of ethics of the professional arena. 2. Students will be able to demonstrate ability to think critically, to creatively problem solve and utilize analysis 3. Students will be able to demonstrate the ability to articulate the global scope of sport and recognize diversity issues in sport.	Week -1 Various committees and their Responsibilities Week-2 Advantages of knock out tournaments. Knock out, Combination, League cum knock- out Tournaments. Week-3 Procedure to draw Fixtures: Knock out, Week – 4 Intramural and Extramural, Meaning, objective and their significance	Portion of 1st UT, Chapter 1. 2 & 3

MONTH	CHAPTER/TOPIC	No. of Periods	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/PT/T1
	CLASS: XII		**BOOKS : INFORMATICS PRACTICES by NCERT**			
SUBJECT: INFORMATICS PRACTICES (065)			**INFORMATICS PRACTICES by Sumita Arora**			
APRIL	**Introduction to Python libraries- Pandas, Matplotlib.** SDG(4)	5 (TH) 5 (PR)	1. **Data structures in Pandas** - Series and data frames**. 2. Series: Creation of series from List.** Dictionary, scalar value; mathematical operations; series attributes, head and tail functions; 3. **Selection, indexing** and slicing of Series elements 4. Attributes of Series: Index, Columns, Size, Shape, dtype, Values etc. **Suggested Practical:** 1. Create a panda's series from a dictionary of values and a ndarray 2. Given a Series, print all the elements that are above the 75th percentile. **ACTIVITY- 1** -Identify various Functions, keywords, Libraries, Packages, and Modules etc. **ACTIVITY -2** Practical based on Series attributes.	1. Explain, Use and implementation of Python Pandas 2. Extracting, slicing data from Series 3. Implementation of attributes of Series. Students learn about importing the Pandas Library and creation of Series using different data types.	Students will be able to Create Series and apply various operations. Students able to write programs by importing the Pandas Library and also able to create Series using different data types.	
MAY	**DataFrames in Pandas**	08 (TH) 08 (PR)	1. Creation of data frames from dictionary of series, list of dictionaries, text/CSV files, display, and iteration. 2. Operations on rows and columns: add (insert /append) , select, delete (drop column and row)	1. Explain, Use and implementation of Python Pandas. 2. Extracting, slicing data from DataFrame. 3. Implementation of attributes of DataFrame.	Students will be able to Create Data frames and apply various operations.	

			Suggested Practical:			
			1. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. 2. Group the rows by the category and print the total expenditure per category. 3. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions 5. Importing and exporting data between pandas and CSV file. **Activity:** Discussion and assignment of Project topics for CBSE Practical Exams.	Students learn about creation of DataFrame using different data types. Studenta also learn about importing data from and to csv files for various operation.	Students able to write programs to create DataFrame using different data types. Studenta also know about importing data from and to csv files for various operation.	
JUNE	**DataFrames in Pandas Continued...**	07 (TH) 07 (PR)	1. Rename, Head and Tail functions, indexing using labels, Boolean indexing. Attributes of Dataframe: Index, Columns, Size, Shape, dtype, Values etc. **Suggested Practical:** 1. Filter out rows based on different criteria such as duplicate rows. 2. Practical based on DataFrame attributes. **ACTIVITY-1** Writing programs for the implementing DataFrame functions. **ACTIVITY –2** Practical implementation of Attributes of DataFrame.	1. Explain and use of functions in DataFrame. Students learn about extracting the rows and cols based on conditions from DataFrame. Students also learn about different attributes of DataFrame.	Students will be able to apply various operation on Series and DataFrame. Students able to extract the rows and cols based on conditions from DataFrame. Students also able to use different attributes of DataFrame.	**UT-1** **19-06-2023** **Series and DataFrame basics.**

JULY	**Data Visualization using Matplotlib** **SDG(4)**	5 (TH) 5 (PR)	1**. Data Visualization** : Purpose of plotting, drawing and saving of plots using Matplotlib 2. **Drawing Line charts**, Bar graph, Scatter Chart etc. 3. **Drawing Histogram**, Frequency Polygon, PIE chart, Boxplot etc. 4. **Customizing plots**:; adding label, title, and legend in plots. **Suggested Practical:** 1. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise. 2. For the Data frames created above, analyze, and plot appropriate charts with title and legend. 3. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library. **ACTIVITY-1** Project topic selection and topic discussion on synopsis for AISSCE-2024. Practical implementation of Charts and graphs functions.	1. Explain and use of matplotlib and their predefined function for drawing different charts and graphs Students learn about presenting the data in pictorial format by using the Matplotlib. Students also learn about drawing the different graphs or charts based on given data.	Students will be able to Visualize data using relevant graphs. Students able to present the data in pictorial format by using the Matplotlib. Students also able to draw the different graphs or charts based on given data.	
AUGUST	**Societal Impacts**	14 (TH)	1. Digital footprint, net and communication etiquettes 2. Data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, 3. Free and open source software (FOSS), LAMP, WAMP, Firewall, OSS, Browsers.	1.Explanation of general net etiquettes 2. Discussion of FOSS, LAMP, WAMP etc 3. E-waste hazards and their management	Students will be able to Understand the impact of technology on society including gender and disability issues.	**UT-2** **07-08-2023** **Data Visualization**

			4. E-waste: hazards and management. Awareness about health concerns related to the usage of technology. **ACTIVITY - 1** PPT for E-waste: hazards and management.		
SEPTEMBER	Revision **Database Query using SQL**	**Doubts Clearance on important topics specially related with program implementation** Revision of topics covered in **Class XI**		**TERM I EXAM** **Chapters:** **Python Pandas Series and DataFrame,** **Data Visualization and Societal** Impacts	
OCTOBER	**Database Query using SQL**	20 (TH) 17 (PR)	1. **Math functions**: POWER (), ROUND (), MOD (). 3. **Aggregate Functions**: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*). 4. **Text functions**: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM (). 5**. Date Functions**: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME (). Querying and manipulating data using Group by, Having, Order by. Working with Two Tables using equi-join. **Suggested Practical:** Create a student table with the student id, name, and marks as attributes where the student id is the primary key. 2. Insert the details of a new student in the above table. 3. Delete the details of a student in the above table.	1. Explain and use of MySQL built-in functions 2. Implementation of functions in the table data	Students will be able to Design SQL queries using Aggregate functions. Import/Export data between SQL database and Pandas.	

			4. Use the select command to get the details of the students with marks more than 80. 5. Find the min, max, sum, and average of the marks in a student marks table. 6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by. 7. Write a SQL query to order the (student ID, marks) table in descending order of the marks. **ACTIVITY-1** Students will write queries and practice use of different SQL statements **ACTIVITY-2** Students will write queries and find output based on Case studies given using MySQL using built-in functions			
NOVEMBER	**Introduction to Computer Networks**	12 (TH)	1. **Introduction to networks**, Types of network: LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway Network Topologies: Star, Bus, Tree, Mesh. 2**. Introduction to Internet**, URL, WWW, and its applications- Web, email, Chat, VoIP. 3. **Website:** Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. 4. **Web Browsers**: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.	1. Explain and demonstration of network based device and their uses 2. Explanation of website, webpage, webhosting, server, types of pages	Students will be able to Learn terminology related to networking and internet. Identify internet security issues and configure browser settings.	**TERM-II** **Database using SQL and Computer Network**

					Activity -1 Experiential Learning Skills to teach students how to conduct tournament.	
			ACTIVITY - 1 Students will be asked to prepare List of device, Network and Topologies used in School Campus. **Project and Practical Notebook submission for AISSCE'2024.**			
May	Sports and Nutrition	10	1. To make them understand about balanced diet and nutrition: Macro and Micro Nutrients. 2. To make them understand about Nutritive and Non-nutritive components of Diet.	1. Students will be able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of communitities. 2. Students will be able to improve the nutritional health of individual with medical conditions.	Week- Balance diet and Nutrition Macoro and Micro Nutrition. Week-2 Nutritive and Non- Nutritive components of diet.	
Jun	Sports and Nutrition	10	3. To make them understand about Eating for Weight	3. Students will be able to apply management	Week-3	

			control-a Healthy weight, the pitfalls of dieting	principles to evaluate human physical and fiscal resources in organization.	Eating to control Healthy body weight the pitfalls of dieting. Week4 Methods to control Healthy body weight the pitfalls of dieting. Activity -1 Subject Enrichment: Activity-2 Art Integrated Skills Creative Thinking.	
July	Yoga and Lifestyle SDG-3 Good Health and well being	22	1. To make them understand about Obesity: Procedure, Benefits and Contraindication for Vajrasana, Pada Hastasana, Urdhva Hastasana, Trikonasana, Ardhmatseyendrasana. 2. To make them understand about Diabets: Procedure, Benefits and Contraindications for Bhujangasana, Pachimottanasana, Pawanmuktasana, Ardhmatseyendrasana.	1. Students will be able to intestate Ayareda to the existin health cure system for promotion prevention and control of non communicable disease. 2. Students will be able to reduse during dependency in chromic cases thrugh Ayurveda yoga Practices and lifestyle changes.	Week -1 Asanas as preventive measures Obesity, Procedure, Benefits and contraindications for Vajrasana, Pada Hastasana, Urdhva Hastasana, Trikonasana. Week-2 Diabrtes Bhujangasana, Paschimoftanasana, Pawanmuuktasana, Ardhmatseyendrasana.	

			3. To make them understand about Asthma: Procedurre, Benefits and Contraindications for Sukhasana, Chakrasana, Gomukhasana, Parvatasana, Bhujangasana, Paschimottanasana, Matsyasana.	3. To carry out capacity building of human resources.	Week-3 Asthma, For Sukhasana, Chakrasana, Gomukhasan, Parvatasana, Ghujangasana. Paschimottanasana, Week – 4 Hupertension, for tadasana, Vajrasana, Paeanmuktasana, Ardhachakrasana, Bhujagansan. Activity -1 Subject Enrichment * * * * Group Discussion Discussion with students topic wise.	
Aug	Physical Education and Sports for (CWSN)	20	1. To make them understand about Concept of Disability and Disorder. 2. To make them understand about Types of disability, their	1. Knowledge about the role of Paralympics for promoting adaptive sports. 2. Modified of individualized programme	Week -1 Types of Disability. Their Causes and Nature, Disability, Intellectual disability. Week-2	Portion of 2nd UT Chapter 4, 5, 6 & 7

			Causes and Nature (Cognitive Disability, Intellectual Disability,	that Ceters to the special needs of disabled students.	Types of disorder, their causes and nature (ADHD, SPD, ASD, ODD, OCD)
					Week-3
					Advantages of physical activities for children with special needs.
					Week-4
					Strategies to make physical activities accessible for children.
					Activity -1
					*
					*
					*
					*
Sep	Children and Women in Sports	14	1. To make them understand about Motor Development and Factors Affecting it. 2. To make them understand about Exercise Guidelines at Different Stages of Growth and Development. 3. Common Postural Deformities- Knock-Knees,	1. Gain knowledge in general metabolic principles, primarily fuel sources for the working muscle during exercise. 2. Knowledge of Hydration guidelines for safety and performance and know	Week -1 Motor Development and Factors Affectin, Common Postural Deformities. Week-2 Exercise guidelines at different stages of growth and development, corrective

			Flatroot, Round shoulders, Lordosis, Kyphosis, Bow Legs and Scoliosis	how to evaluable and monitor hydration status 3. Understand the role of nutrition in recovery from injuries.	measures for postural, deformities. Week-3 Sports Participation of women in India. Special consideration Dys- function. Week-4 Female Athlete triad (Osteoporosis, Amenorrhoea and Eating Dissorders) Activity -1 **Subject Enrichment:**	
Oct	Test & Measurement & Physioloby.	16	1. To make them understand about Motor Fitness Test 2. To make them understand about General Motor Fitness: Barrow Three-item General Motor Ability (Standing Broad Jump, Zig-Zag Run, Medicine Ball Put- For Boys: 03 kg and for Girls: 01kg) 3. To make them understand about Measurement of	1. Students will learn how to take Friends test SAI Khelo Indian Fitness test in school. 2. Students will learn how to computing Basal metabolic rate (BMR) 3. Students will learn how to take BMI. Flamingo Balance, Plate taping test.	Week-1 Fitness test BMI computing Basal metabolic Rate (BMR) Week-2 Rikli & Jones. Senior citizen fitness test. Week- 3 Physiological factors determining components fo physical fitness sports injuring Week-4	

			Cardiovascular Fitness: Harvard Step Test/Rockport Test		Effects of exercise on muscular, cardio respiratory system.	
Nov	Biomechanics & Sports. Psychology & Sports. & Training in Sports.		1. To make them understand about Meaning and Importance of Biomechanics in Sports. 2. To make them understand about Tyes of Movements (Flesxion, Extension, Abduction and Adduction) 3. To make them understand about Newton's Laws of Motion and Their Application in Sports. 4 To make them understand about Personality, its Definition and Types- Trait and Type (Sheldon's and Jung's Classification and Big Five Theory) 5. To make them understand about Motivation, its Types and Techniques. 6. To make them understand about Exercise Adherence,	1 The Students will be able to describe the core principles of exercise physiology and related exercise. 2. The students will identify the principle of chemical exercise physiology, as well as describe the patho physiology of disease and their associated risk factors. 3. Students will learn how to use the Newton's law of motion & application in sports. 4. Students will learn how to use the Dynamic & static and centre of gravity and its application in sports. 5. Provide facility and preceptor mentorship to produce graduates who are	Week-1 Newton's law of motion & its application in sports. Equilibrium Dynamic & static centre of gravity Fraction & sports projectile in sports. Week-2 Jung classification & Big five theory. Phychological Attributes in sports. Self Esteem, mental, self talk goal setting, types of Aggression in sports. Week-3 Concept of talent identification and talent development in sports. Introduction of sports traning cycle- Micro meso, Macro cycle	Protion of 3rd UT. Cha-8,9,10

| | | | Reasons to Exercise, Benefits of Exercise. | future leader's and outstanding clinicians. 6. Contribute to the athletic traning profession though the scholarship and leadership of the facility, staff and students. | Types & Method to develop- strength, Endurance and speed. Types & Method to develop flexibility and coordinative ability. | |

CLASS: XIl SUBJECT: Painting			Book- History of Indian Art An Introduction to Indian Art		
MONTH	CHAPTER	No. of Periods	LEARNING OBJECTIVES	Painting practical	UT/PT/T1
APRIL	Unit-l CH-1, 2,3,4	4	➢ Introduction,Origine and Development of miniature paintings ➢ Six Limbs of indian painting ➢ Pala schools of mniaturepaintings,western schools. ➢ Rajsthanischool,pahari school miniature painting ➢ Mughal school of miniature Painting ➢ Daccan school of miniature painting ➢ Sub school and Artist and thair Painting, techniques of Paintings.	• Week 1Nature compositiondrawi • Week 2Nature composition pastel colour • Week 3Land scape Drawing • Week 4 Land scape colour in water colour ACTIVITY- 1 **Experiential Learning: students will learn about nature they do outdoor work** **Skills:**theyanalyze about shape drawing and colour shades ACTIVITY -2 students will do out door work in school campus **Skills:**students will can know about use of water colour	
MAY	CH-5	2	• The Pahari school Painting ofminiature painting,origine anddevelopment,Painting ,materials,technique,	• Students can drawflowers composition • Learn about use of pastel colour	

			Artist sub schools ,Artist and Paintings description.		
JUNE **JULY**	Rivision CH-1,2,3,4,5 CH-6	4 4	• The Miniature Painting Tradition • The Rajsthani, PahariSchools Painting • The Mughal Schools Painting • The Deccan Schools Painting • The Bengal school and cultural Nationalism • Company painting: • Bengal School origine and development • Contribtion of Indian Artiststs in National freedom struggle • The Evolution of Indian National Flag • Painting and Artist their discriptions.	• They can learnHaritage drawing and shading • They will learn Madhubani Painting ACTIVITY1 students will learn collage workof great person. **Subject Enrichment: students learn collage work wastmaerials** ACTIVITY–2 **Art Integrated: Goa and Jharkhand folk painting study as cav painting sohrai painting** **Skills: students can know about folk art of 2 state tribals work** Creative Thinking ACTIVITY-3 students will learn bankura style painting yamini ray style **Subject Enrichment:** Student can make yaminiroy painting	
AUGUST	CH- 7 **SDG: 4: Quality Education**	4	➢ The Modern Indian Art ➢ Introduction to Mordernism and Contemporary art in India ➢ Major Modern Trends ➢ The Progressive Artists group of Mumbai the mutificated Indian Art. ➢ Abastraction– Anew Trend	• Studentscan make miniature paintings • Banithani • Kangra school painting • Mughal school miniature painting **Group discussion**- students can do group discussion about miniature painting colour,paintindiscription. ACTIVITY-1	UT-2
SEPTEMBER	CH-7	4	➢ Modrn and Contemporary Artists Painting ➢ BenodBehariMukharjee– The Lives of Medieval Saints, M. F. Hussain- Mother Teresa, Amrita shergil- Haldi Grinder,K. G. Subramanyan-Fairy Tales from Purvapalli ➢ Graphic print- Krishna Reddy- Whirlpool, Children – SomnathHore, Devi- jyoti Bhatt, Of	• Still life Fruit Basket • They learn about use of colour. • They will analyze about colours shades. .ACTIVITY - 1	UT-3

			wall -AnupamSud, Rural south Indian man and woman- LakshmaGoud ➢ Sculpture: Trimpth of Labour-Devi Prasad Roychowdhury,SañthalFaimily- Ram Kinker, Cries Unheard- AmarnathSahgal,Ganesha-P. V. Jankiram,Vanshri-MrinaliniMukharjee	**Subject Enrichment: students will make all miniature painting and write the name of artists name.**	
OCTOBER	CH-7' 8 2 ,3 ,4,5	4	• The Living Art Traditions of India • Traditional Painting • Mithila Art • Warli Painting • Gond painting,Pithoro Painting • Pata Painting • Phad painting • Dhokracasting, Terracotta		
NOVEMBER	CH- 1 to 8	4	Rivision	practic for painting practical work Term-2	