SURENDRANATH CENTENARY SCHOOL
SESSION – 2024-25
ANNUAL PEDAGOGICAL PLAN
CLASS XII

Subject : ENGLISH **Books : FLAMINGO ; VISTAS**						
Month	Chapter	No. of pr.	Topics	Learning Objective	Learning Outcome	UT/PT/T
April	**The Last Lesson** **Notice** **My Mother At Sixty Six** **The Third Level** **The Lost Spring**	18	**The Last Lesson**- War and its futility; Importance of learning mother tongue/ indigenous language; Ill effects of procrastination; Education; Patriotism **Notice-** Use of notice, language, format **My Mother At Sixty Six-** Old age and the problems; Responsibility and constraints of offsprings; Volatile and demanding world **The Third Level-** Stress a common problem; Facing adversity and picking up the gauntlet is the only way out;	**The Last Lesson**- Make learners familiar with unfamiliar words/ phrases/ proverbs/ idioms. Teach them to analyze data and interpret them. Make them creative and language proficient. **Notice**- Teach the Dos and Don'ts of notice. Format and permissible language of notice. Writes informal letters to friends, relatives using appropriate vocabulary **My Mother At Sixty Six-** Introduce different genres of poems**.** Discuss poetic devices and the impact it creates. Develop emotional connect with the elders at home. Explain no one is immortal. **The Third Level-** Make learners	**The Last Lesson-** Infers implicit meanings of unfamiliar vocabulary words, phrases etc Develops tools, questionnaires, interview questions for collecting data or to execute interdisciplinary projects stating the purpose, plan, resources, method, findings; draws maps, diagrams, charts, tables for analysing information and preparing reports **The Last Lesson and Notice Writing-**Writes notices, posters, speech etc. on bullying, ragging and cybercrime; develops multilingual charts, posters on healthy food etc. for school canteen, farewell parties etc. **My Mother At Sixty Six-** Recites poems, identifies literary devices, linguistic	**UT 1** The Last Lesson, My mother at Sixty Six, Notice, Comprehension passage

April		18	**The Lost Spring**- Poverty is a great challenge; Progress of a nation depends on population control; Need for education; Politicians and their roles	familiar with unfamiliar words/ phrases/ proverbs/ idioms. Teach learners to find solution to the underlying problem expressed in the chapter. **The Lost Spring-** Teach learners to find solution to the underlying problem expressed in the chapter. Help in drawing comparisons and contrasts. Teach to write character sketch. Teach to read the narrative silently, comprehend and draw inferences.	features, sings songs with voice modulation, expression, and appropriate body language Appreciates the impact of literary devices in poetry. Analyses the use of literary devices in a poem. **The Third Level-** Converses about personal experiences clearly and independently. Writes notices, formal and informal letters on related issues. **The Lost Spring-** Reads silently with comprehension and to identify the complexity of ideas in an argumentative text; and relates learning with personal, social experiences in writing and speech. Reads narrative nonfiction and draws comparisons. Compares and contrasts two ideas within a text. Makes predictions about characters' actions. Reads narrative nonfiction and makes inferences. Infers cause and effect relationships between the events in the text. Writes reports based on survey conducted e.g., on preparedness of the	

					school for dealing with fire, earth quake, drinking water arrangements, cleanliness etc. Speaks on the suggestions based on the reports.	
May	**Letter to the Editor** **The Tiger King**	10	**Letter to the Editor-**Use of such letters, language, format. **The Tiger King-** Discussion on wild life; need for conservation; Authenticity of prophecies and predictions-superstition; Corruption imposed by powerful people on the innocent ones/subjects.	**Letter to the Editor-** Teach that these letters are written for issues which pertain to the society, or nation as a whole. Highlight the difference between national daily and local daily. Use of formal language is a must. Format of such letters is important. Dividing it into three paragraphs is a rule. **The Tiger King-** Teach learners the underlying problem expressed in the chapter. Help in drawing comparisons and contrasts. Teach to write character sketch. Teach to read the narrative silently, comprehend and draw inferences.	**Letter to the Editor-** Writes letters based on topics given and relate them with real life experiences. Writes proper observation and suggestion. Writes with the correct format. , language, format **The Tiger King-** Reads silently with comprehension and to identify the complexity of ideas in an argumentative text; and relates learning with personal, social experiences in writing and speech. Infers character traits based on their actions and feelings. Predicts an alternative plot for the story. Writes creatively using imagination, fantasy and myths, proverbs quote etc., focuses on the features of genres of literature (fiction and nonfiction etc.)	

June	**Deep Water** **Report Writing** **Keeping Quiet**	10	**Deep Water-** Discussion on phobias; types of phobias; ways of overcoming phobia, role of family and friends in removing phobia; words on phobias **Report Writing-**Format, language, rules, different types of reports, use of correct tense in report writing **Keeping Quiet-** Discussion on meanings and importance of introspection and retrospection	**Deep Water-** Teach to write character sketch. Teach to read the narrative silently, comprehend and draw inferences. To train them to speak about their fear and ask them to overcome strategically. **Report Writing-** To teach the format of report writing. Use of past tense is a must. Use of correct person makes it grammatically error free. Use of formal language and formal vocabulary. **Keeping Quiet-** Discuss poetic devices and the impact it creates. Discuss – a sestet, an octet, a limerick, a ballad etc Teach pronunciation and punctuation.	**Deep Water-** Reads silently with comprehension and to identify the complexity of ideas in an argumentative text; and relates learning with personal, social experiences in writing and speech. Converses about personal experiences clearly and independently. Writes a paragraph on personal experience of fear. **Report Writing-** Writes reports with proper tenses and format. Uses correct grammar and personal pronouns. Uses formal language and phrases in expressing. **Keeping Quiet-** Reads poetry and summarizes it. Composes a short poem independently. Uses tone and voice modulation appropriately Appreciates the impact of literary devices in poetry. Infers the poet's message	

July

			Talk about SDG 10- Reduced Inequalities. Importance of critical understanding in taking decisions. **The Rattrap-** Discuss the beginning-fairy tale. Theme of loneliness. Presence of essential good ness in man. Power of positivity. Effect of kindness and understanding.	Critically analyze war and its aftermath. **The Indigo-** To understand the importance of a good leader and team work. Teach to read the narrative silently, comprehend and draw inferences. Uses vocabulary words with similar meanings **The Rattrap-** To teach the characters and enable them to read like critics. Symbolic use of 'Rattrap'. Help them empathize. Teach them to become trustworthy.	Reads silently with comprehension and to identify the complexity of ideas in an argumentative text; and relates learning with personal, social experiences in writing and speech. Converses about personal experiences clearly and independently. **The Rattrap** Reads silently with comprehension and to identify the complexity of ideas in an argumentative text; and relates learning with personal, social experiences in writing. Uses vocabulary words with similar meaning	

August	**On the Face of It** **A Roadside Stand** **Memories Of Childhood-The Cutting Of My Hair and We Too Are Human Beings**	22	**On the Face of It –** Highlight the issue of disability, acid attacks. Trauma suffered by the sufferers. Role of family and society. Discuss transgenders and their plight. Importance of being decisive. **A Roadside Stand** To understand the contrast between the rich and miserable villagers. To question the distribution of resources and oppurtunities in society **Memories Of Childhood-The Cutting Of My Hair and We Too Are Human Beings** Evils of discrimination. Against the constitution of India. Discussion on the movie	**On the Face of It** Teach to read the narrative silently, comprehend and draw inferences. Uses vocabulary words with similar meanings **<u>Experiential Learning</u>** To act as characters of the story. **A Roadside Stand** Teach to read the narrative silently, comprehend and draw inferences. Uses vocabulary words with similar meanings **Memories Of Childhood-The Cutting Of My Hair and We Too Are Human Beings** Teach to read the narrative silently, comprehend and draw	**On the Face of It** Reads silently with comprehension and to identify the complexity of ideas in an argumentative text; and relates learning with personal, social experiences in writing. Reads narrative nonfiction and draws comparisons Develops a script for a short play. Participates in plays in different roles **A Roadside Stand** Recites poems, identifies literary devices, linguistic features, sings songs with voice modulation, expression, and appropriate body language. Writes creatively using imagination, fantasy and myths, proverbs quote etc., focuses on the features of genres of literature (fiction and nonfiction) **Memories Of Childhood-The Cutting Of My Hair and We Too Are Human Beings** Reads silently with comprehension and to identify the complexity of ideas in an argumentative text; and relates learning with personal, social experiences in writing.	

			Article 15. The then society and its beliefs. .	inferences. Uses vocabulary words with similar meanings	Reads narrative and draws comparison between the two characters in the story. **Aunt Jennifer's Tigers** Recites poems, identifies literary devices, linguistic features, sings songs with voice modulation, expression, and appropriate body language. Writes creatively using imagination, fantasy and myths, proverbs quote etc., focuses on the features of genres of literature (fiction and nonfiction)	
September	**Job Application**	15	**<u>Subject Enrichment:</u>** Conducting ASL for the First Term. **Job Application-** Format, structure, content, language	**Job Application-** To make learner understand how to draft job application. To teach the two parts of job application. To highlight the important parts of biodata.	**Job Application** Writes job applications with comprehension. Includes relevant details of a job application. Uses correct format and formal language.	
October	**Aunt Jennifer's Tigers**	13	**<u>Subject Enrichment:</u>** Conducting ASL for the First Term **Aunt Jennifer's Tigers** Visualize the constraint of married life experienced by a woman. Evaluate the situation and find solutions to domestic	**Aunt Jennifer's Tigers** To teach students to empathize with the victims of male chauvinism. Make them understand that man and women are equal. Strengthen them to Raise voice against domestic violence	**Aunt Jennifer's Tigers** Recites poems, identifies literary devices, linguistic features, sings songs with voice modulation, expression, and appropriate body language. Writes creatively using imagination, fantasy and myths, proverbs quote etc., focuses on the features of genres of literature (fiction and nonfiction)	

			violence			
November		10	**Subject Enrichment:** Conducting ASL for the Boards			
December		12	Revision			
January			Pre Board Examination			
February						
March						

SURENDRANATHCENTENARYSCHOOL, RANCHI

ANNUAL PEDAGOGICAL PLAN (2024-2025)

CLASS: X11
SUBJECT: PHYSICS

BOOKS : NCERT SCIENCE
TEXTBOOK FOR CLASS :- XII
NCERT ,S.L.ARORA & NCERT EXAMPLER
LAB MANUAL(Blue Print)

MONTH	CHAPTER	NO.OF PERIODS	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/TERM
			1.Electric Charges; Conservation of charge, Coulomb's law. forces	**To help the learners**	**Students will able to** ➢ Compare the basic knowledge of	

APRIL	**Chapter–1**: Electric Charges and Fields **Chapter–2:** Electrostatic Potential and Capacitance -	**20**	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 a point charge, a dipole and system of charge; equi-potential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field ***PRACTICAL 1***	1. Explain the theoretical and mathematical concepts of Electric Charges and its Properties and Electrostatics forces and fields of different charge distributions. 2. To evaluate Electrostatics forces and fields of different charge distributions 3.To explain and evaluate The concept of electric flux. 4 .To differentiate the concept of Electric potential due to different charge distributions and its relation between electric field.	Electric charges, concept of electrostatic force in vector form different distribution of charges ➢ List the phenomena of charging of a body with daily life. ➢ Relate the Electrical potential with electric field ➢ Apply, analyze and evaluate the Gauss law and its application in numerical. ➢ evaluate the electric potential due to different charges.	

			To determine the resistivity of two/three wires by plotting a graph between potential difference versus current. ***PRACTICAL 2*** To find the resistance of a given wire/standard resistor using a metre bridge.	To determine the resistance per cm of a given wire by plotting graph of potential difference versus current, and hence to determine its resistivity.	**Learners will able to** Performed Ohm's law. To find the relation between voltage, current and resistance. To calculate the resistivity of the material of a given wire.	
MAY	**CH- 2** Electrostatic potential and capacitance cont…. **Chapter–3:** Current Electricity	**08**	*Conductors and insulators, free charges and bound charges inside a conductor. *Dielectrics and electric polarization , capacitors and capacitance, combination of and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor. Electric	**To help the learners** 1. To learn the concept of Electric potential due to different charge distributions. 2. To apply about the capacitance, dielectrics and its polarization. The student will able	1. Student will be able to solve remembering based questions the working of charge storing device i.e, capacitor. 2. The student will able to apply the application and evaluation based problems on capacitance. 3 .Students will be able to solve the practical	**UT : 01 06/05/2024**

			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:-** To verify the laws of combination (series) of resistances using a meter bridge. OR To verify the laws of combination (parallel) of resistances using a meter bridge.	to learn about the application and evaluation based problems on capacitance. 3.To make the learners to evaluate the concept of electric fields and its relation between electric field. **To help the learners** To make the learners to differentiate the concept of different electrical devices	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	
JUNE	**Chapter–3 cont……** **Chapter–4:** Moving Charges and Magnetism	**13**	**SUMER VACCATION** **(13th May to 13 th June)** Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel 3) Kirchhoff's laws and simple applications,	**To help the learners** *To differentiate the concept of different electrical devices like wheat stone bridge and its	**Students will be able to** ➢ operate different electrical instruments like POT, Meter bridge, Galvanometer, Voltmeter, ammeter etc. also they learned to find the	11 **PTM**

			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:-*** To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same. OR To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.	application in meter bridge and potentiometer with real life application. *To make the learners to learn the concept of relation between electricity and magnetism and analysis of magnetic field for different kind of symmetrical structure. **To help the learners** To determine the resistance of a galvanometer by half deflection method and to find its figure of merit. learners to identify the concept different measuring devices like galvanometer, voltmeter and ammeter and	least count of given measuring instrument 1.Establish the relation between electricity and Magnetism and different methods to find the Magnetic field due to different types of conductor **Students will able to** ➢ Identify the various components used in the experiment. ➢ To apply the concept, 'figure of merit'. ➢ To apply the conversion of galvanometer into ammeter and voltmeter of desired range	

				interrelation between them		
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	**To help the learners** ➢ To make the learner to identify the different kinds of magnetic material and earth's magnetic field. ➢ To explain the magnetic properties of matter, including the concepts of diamagnetism, paramagnetism, and ferromagnetism, and their	**Learner's will able to** ➢ Explain different kinds of magnetic material and earth's magnetic field. *Define diamagnetism, paramagnetism, and ferromagnetism. *Identify materials exhibiting diamagnetic, paramagnetic, and ferromagnetic properties. *Explain the factors influencing the magnetic behavior of materials, *Describe the microscopic origins of magnetic *Apply knowledge of magnetic properties to real-life examples and phenomena. *Analyze and interpret data related to magnetic properties, including magnetic susceptibility and magnetic hysteresis. *Evaluate the significance of magnetic properties in various	**UT 02 :- 29/07/2024**

			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 (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.	underlying principles. **To help the learners** To find the value of v for different values of u in the case of a concave mirror	technological applications *Demonstrate experimental skills in investigating magnetic properties through laboratory activities and experiments. Formulate hypotheses and make predictions regarding the magnetic behavior of different materials . **Students will able to** *Establish the relationship between u ,v & f.	

AUGUST	**CH:-06** ELECTROMAGNETIC INDUCTION CONT…… **Chapter–7:** Alternating Current	2222222222 22 **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 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.	**To help the learners** ➢ to learn the concept Electromagnetic Induction of single and double coil. ➢ List the different method to induce an emf in a given conductor ➢ Explain the concept of Mutual and self induction, generator and transformer. ➢ Deduce the Principle construction working and real life application of Transformer and Dynamo.	**Students will able to** ➢ Use the different method to induce an emf in a given conductor which is useful to understand the concept of Mutual and self induction. ➢ Apply the basic knowledge about the Principle construction working and real life application of Transformer and Dynamo. ➢ Analyze and evaluate about the emf, RMS, peak value of current ➢ To explain Electromagnetic Induction (Generator, Transformer, choke coil)	

				To help the learners To find the focal length of the given concave lens	**Students Will able to** differentiate different types of mirrors and their image properties. Establish the mirror formula.	
SEPTEMBER	**Ch 8 :- Electromagnetic Waves** **Chapter -9:** Ray optics	1**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 explain the generation and real life application of electromagnetic wave depending upon the value of wavelength and frequency. ➢ List the uses of different lenses, mirrors and optical instrument in our daily life. **To help the**	**Student will able to** ➢ Apply the Practical application of EMW in our Daily life and ➢ analyze and comparison between different EM waves. ➢ Differentiate and identify different lenses, mirrors and optical instrument in our daily life. **Student will able to** ➢ List about the different types of mirror and lenses and respective ray	**TERM I EXAM 17TH Sept. to 30th Sept.**

			for a given prism by plotting a graph between the angle of incidence and the angle of deviation.	**learners** ➢ Illustrate applications of different lenses, mirrors and optical instrument in our daily life.	diagrams for image formation along the mathematical tactics and Analysis	
OCTOBER	**Chapter -9:** Ray optics CONT…… **Chapter–10:** Wave Optics	2**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	**To help the learners** ➢ the different types of mirror and lenses and respective ray diagrams for image formation along the mathematical tactics and Analysis. ➢ different optical phenomena of in our daily life like Colour of a sky and cloud, Advanced sunrise and delayed sunset. ➢ differentiate	**Student are able to** ➢ differentiate between the ray and wave nature of a light ➢ To differentiate different types of mirror and lenses and respective ray diagrams for image formation along the mathematical tactics and Analysis. ➢ Describe different optical phenomena of in our daily life ➢ to apply the concept of Huygen's principle in evaluation.	

			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 single slit, width of central maximum. ***PRACTICAL 8*** To determine refractive index of a glass slab using a travelling microscope.	between the ray and wave nature of a light ➢ Deduce relationship between ray optics and wave optics and different optical phenomena such as interference& diffraction. **To help the learners** To determine the refractive index of a Glass slab using travelling microscope	**Student's will able** To evaluate different refractive index of different materials .	
NOVEMBER	**Chapter–11**: Dual Nature of Radiation and Matter **Chapter–12:** Atoms **Chapter–13:** Nuclei **Chapter -15**: Semi Conductor devices	1**15**	1.Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric. 2.Dual nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation. Alpha-	**To help the learners** **1**.to deduce the dual nature of radiation of light as practical and wave **2.**To explain basic structure of atoms and nucleus proposed	**Learners will be able to** ➢ Deduce the dual nature of light (Wave and Particle) along with experimental and mathematical verification. ➢ Apply the Concept of atoms and nuclei with help of different	**Term 2 EXAM from 25th Nov.**

			particle scattering experiment; 3.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. 4.Energy bands in conductors, semiconductors and insulators (qualitative ideas only)Semiconductor diode - I-V characteristics in forward and reverse bias **PRACTICAL:-** **REVISION**	by different scientists and its importance in our life. 3.To write and explain importance and significance of semiconducting devices in our daily 4.To differentiate different from conductor and insulator by explaining different semiconducting devices	models developed by different scientists (Rutherford's model, Bohr's model etc.) ➢ Analyze the Concept of atoms and nuclei with help of different formula. ➢ To evaluate problems based of atom ,nuclei and semiconductors.	
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 from 7th Jan**

SURENDRANATH CENTENARY SCHOOL ,RANCHI

ANNUAL PLAN CLASS – XII

CHEMISTRY

TERM-I

BOOKS: NCERT CHEMITRY TEXTBOOK FOR CLASS XII, NCERT EXEMPLAR					
MONTHS	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**

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, *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**:	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 solutions. *Write the formula of con terms and solve its num *state and explain Henry`s Raoult`s law. *Classify solution as ideal *Define colligative proper discuss different reasoni questions. *describe colligative prop and correlate these with n the solutes *explain abnormal colligat exhibited by some solutes

			Art integrated: collage making on practical application of colligative properties in our daily live. **Skills:** Creative thinking **<u>ACTIVITY -3</u>** 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.	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 reactio Electrochemical cell, cell r function of salt – bridge, I potential, Cell potential, E *Discuss the measuremen potential and cell potentia equation, equilibrium con equation, *Derive the relation betwe electrochemical cell and G reaction *Define Conductance, spe molar conductivity *descr electrochemical cell and differentiate between gal electrolytic cells *Solve Nernst equation to

			*Kohlrausch law of independent migration of ions and its application. *Electrolytic cell, Faraday's law of 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. **Skills:** Critical thinking	*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.	emf of galvanic cell and standard potential of the *derive relation between potential of the cell, Gib of cell reaction and its e constant. *differentiate between io electronic conductivity. *Discuss variation of cond conductivity and molar c with concentration. *State of Kohlrausch law c migration of ions and its a *Explain electrolytic cell a law of electrolysis. *Recall Batteries: primary secondary battery, fuel - c *Discuss corrosion and me corrosion.
			*Average and instantaneous	Students will :	Students should be able to

JUNE	CH- 4 **Chemical kinetics**	15	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. **<u>ACTIVITY 1:</u>** 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	* 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	* write the average and in of a reaction *express the rate of a reac terms of change in conce either of the reactants o with time. *distinguish between elem complex reactions. *define rate constant. *discuss the dependence reactions on concentrati temperature and catalys *derive integrated rate eq the zero and first order r *determine the rate const and first order reactions *describe collision theory
JULY	CH-10 **Haloalkanes and haloarenes** **SDG No 3**: Good health and well being	15	Haloalkanes 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. **<u>ACTIVITY :1</u>** **Group discussion**- "Can we do away with the use of DDT completely ''	Students will : *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.	Students should be able to *Write the name of haloa haloarenes according to th system of nomenclature given structures. * Recall the reactions invo preparation of haloalkan haloarenes and understa reactions that they unde *correlate the structures haloalkanes and haloare various types of reaction * discuss stereochemistry understand the reaction * recall the applications of

				*understand the applications of organo-metallic compounds and the environmental effects of polyhalogen compounds.	compound and highlight t effects of polyhalogen cor
JULY	CH-11 **Alcohols, phenols and ethers.**	14	**Alcohols** : * 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. **<u>ACTIVITY 1:</u>** Identification of primary , secondary and tertiary alcohols by experimentation in laboratory. **<u>Skills</u>:** analytical skill.	Students will be : * 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.	Students should be able to * Write the name of alcoh ether according to the IUP nomenclature. * Recall the reactions invo preparation of alcohols, p * Discuss the physical pro alcohols, phenols and ethe structures. * Recall the chemical reac classes of compounds on t functional groups

AUGUST	CH-13 **Amines** **SDG No 4 :** **QUALITY IN EDUCATION** CH- 14 **Biomolecules**	14 18	*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.in Explosives like TNT,TNB insecticides etc. **Skills:** Analytical skill *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.	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 will : *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	Students should be able t *classify amines . *Write IUPAC nomenclatu nomenclature of amines *Recall the methods of preparation of amines an properties of amines *Recall and discuss prepar and properties of benzen diazonium chloride Students will be able to : *Recall the classification o proteins, vitamins * Discuss the structure &f carbohydrates & proteins * Recall the functions of v *Explain the structure and & RNA.

			*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:** EXPERIENTIALACTIVITY: Prepare modals of the structure of DNA ,RNA ,Proteins for easy understanding. **ACTIVITY-2:** To prepare mind map for easy revision. **Skills**: Creativity		
SEPTEMBER			**CH- 2,3,4,10, 11,13, 14**	REVISION	

TERM-II

OCTOBER	**Chapter-8** **d and f block elements**	10	*General introduction, electronic configuration, occurrence and *characteristics of transition elements, general trends In properties of the first row transition metal, metallic character, ionization enthalpy, oxidation state, ionic radii, colour Catalytic property, magnetic property, interstitial compounds, alloy formation. *Preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$. ***Lanthanoids** – Electronic configuration, oxidation state, chemical reactivity and lanthanoids contraction and its consequences. ***Actinoids** – Electronic configuration, oxidation states and comparison with lanthanoids **ACTIVITY 1:** **Art Integrated:** Children to develop pneumonic of d and f block elements. **Skill:** Creative thinking.	Students will : *gain knowledge about the electronic configuration of the d and f block elements in the periodic table. *understand the relative stability of various oxidation states in terms of electrode potential values *acquire knowledge about the preparation, properties structures and uses of some important compounds such as $K_2Cr_2O_7$ and $KMnO_4$ *Understand the general characteristics of the d and f block elements and the general horizontal and group trends in them and the properties of the f block elements and give a comparative account of the lanthanoids and actinoids with respect to their electronic configurations, oxidation s tates and chemical behaviour.	Student will be able to: *Write the electronic configuration of the d and f block elements in the periodic table. *Appreciate the relative stability of various oxidation states in terms of electrode potential values *Describe the preparation, , properties structures and uses of some important compounds such as $K_2Cr_2O_7$ and $KMnO_4$ *Recall the general characteristics		

					of the d and f block elements and the general horizontal and group trends in them *Explain the properties of the f block elements and give a comparative account of the lanthanoids and actinoids with respect to their electronic configurations, oxidation states and chemical behaviour		

	CH-9 **Coordination Chemistry**	10	*Introduction, ligands, coordination number, colour, magnetic properties and shapes, *IUPAC nomenclature of mononuclear coordination compounds Bonding, Werner's theory, *VBT and CFT, structure and stereoisomerism * Importance of coordination compounds (in qualitative inclusion) **Activity1 :** Power point presentation to demonstrate CFT in octahedral and tetrahedral complexes **Skills:** Creative thinking	Students will : *Understand the postulates of Werner`s theory of coordination compounds *gain knowledge about the terms : coordination entity, central atom, ligand , coordination number, coordination sphere, coordination polyhedron, oxidation number, homoleptic and heteroleptic *acquire understanding of rules nomenclature of coordination compounds *gain knowledge about the formulas and names of mononuclear coordination compounds *understand different types of isomerism in coordination compounds *acquire concept about the nature of bonding in coordination compounds in terms of VBT and CFT *enhance knowledge about importance and applications of coordination compounds in our day to day life.	Students will be able to : *Recall the postulates of Werner`s theory of coordination compounds. *Define the terms : coordination entity, central atom, ligand , coordination number, coordination sphere, coordination polyhedron, oxidation number, homoleptic and heteroleptic *Write the nomenclature of coordination compounds *write the formulas and names of mononuclear coordination compounds *define different types of isomerism in		

					coordination compounds *Discuss the nature of bonding in coordination compounds in terms of VBT and CFT. *Recall the importance and applications of coordination compounds in our day to day life.		
			*Nomenclature of				

NOVEMBER	CH- 12 Aldehyde, Ketone& Carboxylic Acid **SDG: No 4 : QUALITY EDUCATIO**	15	aldehyde ketone carboxylic acid : * Nature of Carbonyl group .Acidic nature of carboxylic acid *Methods of preparation of Aldehyde Ketone &Carboxylic Acid. *Physical and Chemical properties. *Mechanism of nucleophilic addition. *Reactivity of alpha - Hydrogen in Aldehydes. **ACTIVITY-1** **Experiential learning:** To understand the uses/application of Aldehyde , Ketone and Carboxylic acid in everyday life with various examples i.e. in medicines ,dyes ,paints, polymer industries etc **ACTIVITY 2 :** To distinguish aldehyde , ketone & Carboxylic by chemical test . **Skill:** Curiosity **ACTIVITY 3 :** To prepare mind map for easy revision.	Students will : * Understand nomenclature of aldehydes, ketones, carboxylic acids. *Gain knowledge about basic Concepts of nature ofcarbonyl group . *understand the methods ofpreparation of aldehydes, ketones and carboxylic acid *Acquire knowledge physical and chemical properties of aldehydes, ketones and carboxylic acid	Students will be able to: *Write the nomenclature of aldehydes, ketones, carboxylic acids. . *Discuss the basic Concepts of nature of carbonyl group . *Recall methods of preparation of aldehydes, ketones and carboxylic acid *Discuss on physical and		UT –III d & f Block elements, Coordination

			Skill: problem solving, analytical skills		Chemical properties of aldehydes, ketones and carboxylic acid		
DECEMBER				**REVISION OF ENTIRE SYLLABUS**			
JANUARY			**REVISION OF ENTIRE SYLLABUS**				PREBOARD EXAMINATION

SURENDRANATH CENTENARY SCHOOL
ANNUAL PLAN (2024-2025)
MATHEMATICS (041)

CLASS: XII **SUBJECT: MATHEMATICS**			**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 DETERMINANTS	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	➢ 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 find inverse of a matrix by using elementary row transformations. • To find area of triangle, To understand properties to simplify determinants, To solve system ofequations using matrices.	**UT I-APRIL** PORTION: MATRICES.

			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			
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	➢ 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. **<u>Art Integrated:</u>** Model of graphical representation of inverse trigonometric functions. **Skills:** Creative Thinking ACTIVITY-3 Graphs of continuous functions. **<u>Subject Enrichment:</u>** Will know about relation between Continuity and Differentiability.		functions,To find derivatives of exponentialand logarithmic functions, To findderivatives of functions in parametric form	
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	➢ 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

			functions by substitution. • Integration using Partial fraction and by parts. Evaluation of simple integrals of the following types and problems based on them. $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{a^2 - x^2},$ $\int (x^2 - a^2) dx, \int (a^2 \pm x^2)\, dx,$ $\int \frac{dx}{ax^2 + bx + c}, \int \frac{px + q}{\sqrt{ax^2 + bx + c}} dx$ $, \int \frac{px + q}{ax^2 + bx + c} dx,$ $\int \sqrt{ax^2 + bx + c}\, dx$ **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).	➢ Will know about definite integrals. ➢ Application of integrals in finding areas of simple curves. ➢ Will know about order and degree of a differential equation.	➢ 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		

			• Differential Equations: Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by 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. **<u>Subject Enrichment:</u>** Will get the concept of finding area of a region using application of integrals.	➢ Idea about general and particular solution. ➢ Concept of vectors.	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 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	➢ Concept of 3-D geometry and hence concept of 3-dimensional	• To find equation of line in space in Cartesian and vector form, To find equation of plane in		**TERM I EXAM**

			vectors. • 1ST TERMINAL EXAM • 1ST TERMINAL EXAM ➢ 3-D Geometry: Direction cosines and direction ratios of a 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.	figure.	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		
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 (1/10/22-8/10/22 • 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.	➢ Will learn about Linear Programming Problem. ➢ Will learn, how to maximize profit and minimize costs.	To find solutions to problems		

			ACTIVITY -2 can do activity based on factories, by applying LPP, maximum profit at minimum fuel cost. **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.	➢ Will know about Conditional probability and multiplication theorem on probability. ➢ Will also know linear events and Baye's theorem.	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 byusing Bernoulli trials,		TERM-II
DECEMBER			• REVISION WORK • REVISION WORK • MOCK EXAMINATION				

CLASS: XII SUBJECT: INFORMATICS PRACTICES (065)			BOOKS : INFORMATICS PRACTICES by NCERT INFORMATICS PRACTICES by Sumita Arora			
MONTH	**CHAPTER/TOPIC**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**UT/PT/T1**
APRIL	**Introduction to Python libraries- Pandas, Matplotlib.** SDG(4)	10 (TH) 15 (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.	1. Explain, Use and implementation of Python Pandas 2. Extracting, slicing data from Series 3. Implementation of attributes of Series	Students will be able to Create Series and apply various operations.	
MAY	**DataFrames in Pandas**	20 (TH) 30 (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.	

JUNE	**DataFrames in Pandas Continued...**		1. Rename, Head and Tail functions, indexing using labels, Boolean indexing. Attributes of Dataframe: Index, Columns, Size, Shape, dtype, Values etc. **Suggested Practical:** 3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category. 4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions 5. Filter out rows based on different criteria such as duplicate rows. 6. Importing and exporting data between pandas and CSV file	1. Explain and use of functions in DataFrame.	Students will be able to Create Series, Data frames and apply various operations.	**UT I Series and DataFrame basics.**
JULY	**Data Visualization using Matplotlib** **SDG(4)**	10 (TH) 15 (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.	1. Explain and use of matplotlib and their predefined function for drawing different charts and graphs	Students will be able to Visualize data using relevant graphs.	

			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.			
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. 4. E-waste: hazards and management. Awareness about health concerns related to the usage of technology. **ACTIVITY - 1**	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 II Data Visualization**

			PPT for E-waste: hazards and management.			
SEPTEMBER	**Revision**	**Doubts Clearance on important topics specially related with program implementation**				**TERM I EXAM**
OCTOBER	**Database Query using SQL**	20 (TH) 25 (PR)	1. Revision of topics covered in **Class XI** 2. **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. **Suggested Practical:** 1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key. 2. Insert the details of a new student in the above table. 3. Delete the details of a student in the above table.	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.			
NOVEMBER	**Introduction to Computer Networks**	15 (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**:	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**

			Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies. **ACTIVITY - 1** Students will be asked to prepare List of device, Network and Topologies used in School Campus.			
DECEMBER	**TERM-II**		**Database using SQL and Computer Network**			
JANUARY	**PREBOARD**		**Complete Syllabus**			

CLASS:XII SUBJECT:COMPUTERSCIENCE(083)			BOOKS:COMPUTER SCIENCE by NCERT Computer Science by Sumita Arora			
MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNINGOBJECTIVES**	**LEARNINGOUTCOMES**	**UT/PT/T1**
APRIL	Revision of Python topics coveredinClass XI. SDG(4)	20	Character Set, Tokens, Dynamic Typing,Data Types, Mutable and Immutable,Typecasting Flow of Control-- CompoundStatement,ifcondition,if-else,Nested if,if-elif LoopingStatements--while, for,break,passetc range(),continue, MoreonLoops--loopelse,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/Modulesetc ACTIVITY-2 -Practical'sbased on looping, List, Tuples,Dictionariesetc.	➢ Develop the basiccomputationalskills ➢ Explain and use theconcept of datatypes	Studentshouldbeable toapply the concept of function.	**Unit Test-1** **22-04-2024** **1.Revision --** **Of Python topics covered in class XI**
MAY	Functions	12	Types of functions (built-in functions,functionsdefinedinmodule,userdefinedfunctions) Creating user defined function,argumentsandparameters,defaultparameters, positional parameters,**SuggestedPractical:** Writinguserdefinedfunctionsfordifferent tasks and using them in theprogram.	Apply the concept ofFunction Students learn about usinguserdefine functions.	Student should be ableto apply the concept offunction. Students will be able toknow about using userdefine functions.	

JUNE	Functions	12	Functionreturningvalue(s),flowofexecution, Scope of a variable (global scope, localscope).NameResolution,Casesin Scopes, Mutability/Immutability ofArguments and function calls**SuggestedPractical:** Writinguserdefinedfunctionsfordifferent tasks using return type andintegratingin theprogram. ACTIVITY1 Studentswillbeaskedtoidentifyvarious built-infunctions,userdefinedfunctionsetc. ACTIVITY –2 -Studentswillbeaskedtowritefunctions based on function returningvalues ACTIVITY-3 StudentswillbeaskedtowritefunctionsusingGlobal/LocalScope	Students learn aboutfunction and implementtheminpython program.	Students will able toimplement user defined functioninpythonprogram.	
JULY	Exception Handling Introduction tofilesTextfile **SDG(4)**	22	Introduction, handling exceptions using try-except-finally blocks Types of files (Text file, Binary file, CSVfile), Advantages and disadvantages ofText/BinaryFiles,Relativeandabsolutepaths Text file:Opening a text file, text fileopenmodes(r,r+,w,w+,a,a+),closing a text file, opening a file usingwithclause,writing/appendingdatatoatextfileusingwrite()andwritelines(),Reading from a text file using read(),readline() and readlines(), writing to atextfile, Seek and tell methods, manipulationof data in a text file, Programs basedon--Searching,updating,counting,andmergingtextfiles. **SuggestedPractical:**	➢ Explain and use theconcept of filehandling Students learn about usingtext file for storing	Student should be ableto explain and use theconceptoffilehandling. Students will be able to usetext file for storing	**Unit Test-2** **15-07-2024** **1. Function** **2. Exception handling** 3. **Text File**

			Read a text file line by line and displayeachwordseparatedby a#. ● Readatextfileanddisplaythenumberofvowels/consonants/uppercase/lowercasecharactersinthefile. ● Removeallthelinesthatcontainthecharacter 'a' in a file and write it toanotherfile. ● Createabinaryfilewithnameandrollnumber.Searchforagivenrollnumberanddisplaythename,ifnotfound display appropriate message.**ACTIVITY-1** TopicdiscussiononProjectSynopsisforAISSCE-2023 Students will be asked to prepare listofProgramsbasedonFileHandling(TextFile)	andextractingdata.	andextractingdata.	
AUGUST	**Binary file:** **CSVfile:**	21	Basic operations on a binary file: openusingfileopenmodes(rb,rb+,wb,wb+,ab, ab+) Closeabinaryfile,importpicklemodule, dump()andload()method,Read, write/create, search, seek, telletc Appendandupdateoperationsinabinary file.import csv module, open /closecsvfile, Writeintoacsvfileusingcsv.writerow() and read from a csv fileusingcsv.reader( ) **SuggestedPractical:** ● Createabinaryfilewithrollnumber,name and marks. Input a roll numberandupdate themarks. ● Writearandomnumbergeneratorthat generates random numbersbetween 1 and 6 (simulates a dice).**ACTIVITY–1:** StudentswillbeaskedtopreparelistofProgramsbasedonFileHandling (CSVFile),TEXTfileandBinaryFile.	➢ Explain and use theconcept of BinaryFile Students learn about usingCSV file for storing andextractingdata.	Students will be able to useCSV file for storing andextracting data and applyvariousfunctions.	

SEPTEMBER	**Revision** **Data Structure**	10	**Doubts Clearance on importanttopics specially related with programimplementation** Stack,operationsonstack(push&pop), Implementationofstack usinglist. **SuggestedPractical:** Write a Python program toimplementa stackusinglist. ● CreateaCSVfilebyenteringuser-idand password,read andsearchthe password for given userid.ACTIVITY-1 : Students will be asked to prepareMenudrivenProgrambasedon StackusingLIST.	➢ Explain and use ofStack using PythonList Students learn about Stackandwriteprogramusing Listto implementstack.	Student should be ableto use basic data structure:Stacks Students will be able towrite program using List toimplementstack.	**TERM IEXAM** 1. Revision ofPythontopicscovered inClassXI. 2. FunctionsinPython 3. FileHandling inpython 4. Data Structure
OCTOBER	**DatabaseManagement**	19	Database concepts: introduction todatabase concepts anditsneed Relational data model: relation, attribute,tuple,domain,degree,cardinality,keys(candidatekey,primarykey, alternatekey,foreignkey) Structured Query Language: introduction,DataDefinitionLanguageandDataManipulationLanguage,datatype(char(n),varchar(n),int,float, date),constraints(notnull,unique,primarykey), create database, use database,show databases, drop database, show tables, create table, describetable,altertable(addandremovean attribute,addandremoveprimarykey),droptable,insert,delete,select, operators (mathematical,relational and logical), aliasing,distinctclause,whe	➢ Explain and use ofPythonandMysql ➢ Using MySQLconnector fetchingand displaying thedata ➢ Use of Joins inTables Students learn about usingSQLcommandsto createdatabase,tablean	Student should be able touseDatabaseconcepts,SQL along with connectivitybetweenPythonand SQL Students will be able to use SQL commands to create database, table and write	

			reclause,in,between,orderby,meaningofnull,isnull,isnotnull,like,updatecommand, delete command,aggregatefunctions(max,min,avg,sum,count),groupby,havingclause,joins:cartesianproductontwotables, equi-join and natural joinInterfaceofpythonwithanSQLdatabase: connecting SQL withPython,performinginsert,update,deletequeriesusing cursor,displaydatabyusingfetchone(),fetchall(),rowcount, creating databaseconnectivityapplications. **SuggestedPractical:** Create a student table and insert data.ImplementthefollowingSQLcommands onthe studenttable: o ALTER table to add new attributes /modifydatatype/dropattribute o UPDATEtabletomodifydata o ORDERBytodisplaydatainascending/descendingorder o DELETEtoremovetuple(s) o GROUPBYandfindthemin,max,sum, count andaverage ● IntegrateSQLwithPythonbyimportingsuitablemodule. **ACTIVITY-1**:StudentswillbeaskedtoprepareProgram basedonPythonandMysql **ACTIVITY-2:** Studentswillwritequeriesandfind outputbasedonCasestudiesgiven usingMySQL	dwritequeriestoretrievedatafromtable.	queries to retrieve data from table and integrate with python to execute SQL commands.	

NOVEMEBR	Compute rNetwor k	14	Evolution of networking:introduction to computer networks,evolution of networking (ARPANET,NSFNET, INTERNET) Data communication terminologies: concept of communication,componentsofdatacommunication(sender,receiver,message, communication media,protocols),measuringcapacityofcommunicationmedia(bandwidth, data transfer rate), IP address,switching techniques (Circuitswitching, Packet switching)Transmission media: Wiredcommunicationmedia(Twistedpaircable,Co-axialcable,Fiber-opticcable),Wirelessmedia(Radiowaves,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	➢ Explain anddemonstration ofnetwork baseddevice and theiruses	Student should be able toexplain basics of computernetworks.	**TERM-II** **1. Databaseusing SQL2.Compute rNetworks**

			Markup Language (XML), domain names, 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.			
December	**Revision**					
January	**Whole Syllabus**	**Preboard**				

SURENDRANATH CENTENARY SCHOOL, RANCHI

ANNUAL PLAN (2024-2025)

CLASS: XII **SUBJECT: ECONOMICS (030)**				**BOOKS : NCERT , SANDEEP GARG**		
MONTH	**CHAPTERS**	**NO. OF PERIODS**	**TOPIC**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**UT/PT/T1**
APRIL	**MACRO-NATIONAL INCOME AND RELATED AGGREGATES**	**23**	● 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 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.	□ 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. □ 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	□ 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. □ 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.	**CH- 3 (NATIONAL INCOME & RELATED AGREGATE) , CH- 4 (MEASUREMENT OF NATIONAL INCOME)- (MACROECONOMICS)**

MAY	**CH- MONEY AND BANKING**	**08**	• Meaning and evolution of money, forms of money. • Supply of money, measurement of money supply.	□ 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.	
JUNE	**BANKING cont...**		• Introduction, types of banks, money creation by the commercial bank, and control of money supply / credit supply by central bank in India.	□ 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.	
	CH- INDIAN ECONOMY ON THE EVE OF INDEPENDENCE	**18**	• Indian economy on the eve of independence, low level of economic development under the colonial rule, Agriculture sector, foreign trade, demographic condition, infrastructure.	□ 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 □ Recognise the common goals of five year Plans.	
	CH- INDIAN ECONOMY (1950-		• Introduction, goals of Five years Plans, Agriculture, industry and	□ Indian economy recognise the common goals of five year Plans.	□ Learners are able to relate the five- years plan with the developmental strategies of	

	1991)		trade, trade policy, import substitution.		our country.	
JULY	**CH- INDIAN ECONOMIC DEVELOPMENT – LIBERALISATION, PRIVATISATION AND GLOBAISATION : AN APPRAISAL**	**10**	● Indian economy during reforms- an assessment, conclusion, introduction, background, liberalisation, privatisation and globalisation.	☐ 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.	**UT-2** **(CH- 1 :Indian economy on the eve of independence, ch-2 : Indian economy 1950-1990)** **Macro:** **Ch-4 : Money**
	CH- POVERTY	**05**	● Introduction, various attributes of poverty, comprehends the diverse dimensions relating to the concept of poverty, way of estimation of poverty, assess existing poverty alleviation programmes.	☐ Identify the meaning of poverty. ☐ Recognise that poverty is a multi- dimensional concept. ☐ Analyse the condition of people in rural and urban areas. ☐ Trace out the reason for the condition in rural and urban sector. ☐ Identify the vulnerable group and interstate disparities.	☐ Recognise the meaning of poverty. ☐ Able to relate that poverty is a multi- dimensional concept. ☐ Visualize the condition of people in rural and urban areas. ☐ Chock out the reason for the condition in rural and urban sector. ☐ Recognise the vulnerable group and interstate disparities.	
	CH- HUMAN CAPITAL	**07**	● Some essential concept, problems of deficient demand problem of	☐ Identify the concepts of human resources, human capital formation and human	☐ Recognise the concepts of human resources, human capital formation and human	

	FORMATION		excess demand, measures to correct excess and deficient demand.	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.	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.	
AUGUST	**CH-PROBLEM OF DEFICIENT DEMAND AND EXCESS DEMAND**	**08**	● Some essential concept, problems of deficient demand problem of excess demand, measures to correct excess and deficient demand.	□ 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.	
	CH-GOVERNMENT BUDGET	**17**	● Concept of government budget, objectives, structure/ components of budget, budget receipts- revenue and capital receipts, budget expenditure- revenue and capital expenditure, budget deficit.	□ 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.	**PTM**
	CH-BALANCE OF PAYMENTS	**07**	● Introduction and meaning of balance of payment (BPO), components/ structure	□ Identify the levels of international economic activity. □ Examine the economic	□ Recognise the levels of international economic activity. □ Evaluate the economic	

			of BOP account: current, capital and official reserve account, equilibrium and disequilibrium in BOP- BOP deficit.	relationships underlying the two basic sub- components of BOP.	relationships underlying the two basic sub- components of BOP.	
SEPTEMBER		**14**	● Revision of the CH- 3, 4 , 5 ,6 (MACRO) and CH- 1,2,	Learners will recall the knowledge gain by revising the chapter's taught.	Learners were able to answer the questions given to them	**TERM I EXAM** **CH- 1 TO 9 (MACROECONOMICS)** **CH- 1 TO 6** **(IED)**
OCTOBER	**CH- RURAL DEVELOPMENT**	**07**	● Introduction – rural development, credit and marketing in rural areas, agriculture market system, diversification into productive activities, organic system. ● Puja Vacation. ●	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.	
	CH- EMPLOYMENT	**05**	● 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	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, in formalisation of Indian work force, unemployment government generations, conclusion.			
	CH-INFRASTRUCTURE	**05**	● Main challenges India faces in the areas of social and economic infrastructure, Role of infrastructure in economic development, Role of energy as a critical component of infrastructure, Problems and prospects of the energy and health sectors, Health infrastructure of India.	□ Identify the contribution of economic development of a country. □ Identify the productivity of factors of production and improving the quality of life of its people.	□ Recognise the contribution of economic development of a country. □ Able to know the productivity of factors of production and improving the quality of life of its people.	
NOVEMBER	**CH-ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**	**10**	● Introduction, environment definition and functions, state of India's environment, sustainable development, strategies for sustainable development, conclusion.	□ 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.	
	CH-DEVELOPMENT EXPERIENCES OF	**12**	● Introduction, developmental path- a snap shot view, demographic indicator, gross domestic product	□ Able to figure out the trends in various economic and human development indicators of India and its neighbours.	□ Able to judge the trends in various economic and human development indicators of India and its neighbours.	

	INDIA: A COMPARISON WITH NEIGHBOURS		and sectors, indicators of human development, development strategies- An Appraisal, Conclusion. ● Revision of unit- 1,2 (Macro) ● Revision of unit- 3, 4, 5(Macro)	□ Assess the strategies of their governance of the countries.	□ Able to assess and judge the strategies of their governance of the countries.	
DECEMBER		**20**	● Revision of unit- 6,7(IED) ● Revision of unit- 7, 8 (IED) ● Revision of unit- 6, 7 (Macro).	□ 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.	**PTM**

SURENDRANATH CENTENARY SCHOOL, RANCHI
ANNUAL PEDAGOGICAL PLAN (2024-2025)

CLASS: XII **SUBJECT: WEB APPLICATION (803)**			**BOOKS: WEB APPLICATION-XII by CBSE.**			
MONTH	**CHAPTER/TOPIC**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**UT/PT/T1**
APRIL	UNIT-2 Customizing and Embedding Multimedia components in Web Pages **EMPLOYABILITY SKILLS** Unit 3: Information and Communication Technology Skills-IV SDG(4)		Customizing and Embedding Multimedia components in Web Pages: - Compatible Multimedia file formats for Web Pages. - Embedding Audio file. - Embedding Video file. - Embedding Flash file. ICT Skills IV	1. Explain, Use and implementation of Multimedia Files types. 2. Embedding Audio file. 3 Embedding Video file. 4 Embedding Flash file.	Students will be able to learn and know about multimedia files and their integration in Web Page.	
MAY	UNIT- 3 Web Scripting – JavaScript:		1. Review of JavaScript Class XI. 2. User defined function in JavaScript 3. String Objects	1. Explain, Use and implementation of UDF in JavaScript. 2. Using String object in Java Script	Students will be able to define UDF in JavaScript and add them in a Web Page.	
JUNE	UNIT- 3 Web Scripting .		1. Integrating & using Math Object in JavaScript. 2. Implementation of Array in JavaScript & Events.	1. Explain and use of Array and Events.	Students will be able to Create & implement Array in JavaScript.	
JULY	UNIT-4 Work		– Advanced Features of	1. Explain and use of Add-ins,	Students will be able to	

	Integrated Learning IT – WA-II **SDG(4)**		Web Design. − Code view, Add-ins / Snippets and Page Transitions. − Dynamic Web templates. − SEO - Search Engine Optimization.	Page Transitions and SEO	Use Add-ins, dynamic web templates and SEO.	
AUGUST	UNIT-4 Work Integrated Learning IT – WA-II: **EMPLOYABILITY SKILLS** Unit 2: Self-Management Skills-IV **SDG(4)**		Forms - Advanced. − Publishing web pages or Websites-I. − Publishing web pages or websites-II. − Authoring tools. − CSS templates.	1. Explanation of publishing Web pages. 2. Discussion of Authoring Tools. 3. using CSS templates	Students will be able to Understand and publish the web pages. They also learn about CSS templates.	
SEPTEMBER	**Revision**	**Doubts Clearance on important topics specially related with program implementation**				**TERM I EXAM**
OCTOBER	UNIT-1 Movie Editing Tools		- Familiarization of Interface Components. - Importing Pictures. - Importing Audio and Video Files. - Splitting and Joining Movie Clips. - Adding Titles and publishing	1. Explain and use of tools for editing, splitting, joining movie clips 2. Adding titles and publishing the clips in web pages	Students will be able to Edit, split, joining and publish the movie clips	
NOVEMBER	**EMPLOYABILITY SKILLS** Unit 1: Communication Skills-IV Unit 4: Entrepreneurial		Basic skills such that communication, green and entrepreneurial.	1. Explanation of communication, green and entrepreneurial skills.	Students will be able to Learn about different skills.	

	Skills-IV Unit 5: Green Skills-IV					
DECEMBER	**TERM-II**					
JANUARY	**PREBOARD**		**Complete Syllabus**			

SURENDRANATH CENTENARY SCHOOL, RANCHI						
ANNUAL PLAN (2024-2025) **Term_ 1**						
Class :XII **SUBJECT Physical Education (o48)**			**BOOKS V.D. Sharma** **Physical Health Education** **LAB MANUAL (Blue Print)**			
Month	**Chapters**	**No.of Periods**	**TOPICS**	**Learning Objective**	**Learning Out Come**	**UT/PT/ T-1**
April	Management of Sporting Events SDG-8 Decent Work and orgnise idea .	20	1. Various committees and their Responsibilities 2. Advantages of knock out tournaments. Knock out, Combination, League cum knock- out Tournaments. 3. Procedure to draw Fixtures: Knock out, 4. Intramural and Extramural, Meaning, objective and their significance Activity -1 Experiential Learning	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	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	Portion of 1st UT, Chapter 1. DATE, 29.4.24 5th sub Chapter 1,2 and 3. DATE 08.07.24 6th Sub.

			Skills to teach students how to conduct tournament.	Extramural: objectives and their Significance.	analysis 3. Students will be able to demonstrate the ability to articulate the global scope of sport and recognize diversity issues in sport.	
May	Sports and nutrition.	10	1. Balance diet and Nutrition Macoro and Micro Nutrition. 2. Nutritive and Non-Nutritive components of diet. 3. Eating to control Healthy body weight the pitfalls of dieting. 4. Methods to control Healthy body weight the pitfalls of dieting. Activity -1	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	

			Subject Enrichment: Activity-2 Art Integrated Skills Creative Thinking.		nutritional health of individual with medical conditions.	
Jun	Sports and Nutrition	10		3. To make them understand about Eating for Weight control-a Healthy weight, the pitfalls of dieting	3. Students will be able to apply management principles to evaluate human physical and fiscal resources in organization.	
July	Yoga and Lifestyle SDG-3 Good Health and well being	22	1. Asanas as preventive measures Obesity, Procedure, Benefits and contraindications for Vajrasana, PadaHastasana, UrdhvaHastasana, Trikonasana.	1. To make them understand about Obesity: Procedure, Benefits and Contraindication for Vajrasana, PadaHastasana, UrdhvaHastasana,	1. Students will be able to intestate Ayareda to the existin health cure system for promotion prevention and	

			2.DiabrtesBhujangasana, Paschimoftanasana, Pawanmuuktasana, Ardhmatseyendrasana. 3. Asthma, For Sukhasana, Chakrasana, Gomukhasan, Parvatasana, Ghujangasana. Paschimottanasana, 4. Hupertension, for tadasana, Vajrasana, Paeanmuktasana, Ardhachakrasana, Bhujagansan. Activity -1 Subject Enrichment * * * * Group Discussion Discussion with students topic wise.	Trikonasana, Ardhmatseyendrasana. 2. To make them understand about Diabets: Procedure, Benefits and Contraindications for Bhujangasana, Pachimottanasana, Pawanmuktasana, Ardhmatseyendrasana. 3. To make them understand about Asthma: Procedurre, Benefits and Contraindications for Sukhasana, Chakrasana, Gomukhasana, Parvatasana, Bhujangasana, Paschimottanasana, Matsyasana.	control of non communicable disease. 2. Students will be able to reduse during dependency in chromic cases thrughAyurveda yoga Practices and lifestyle changes. 3. To carry out capacity building of human resources.	

Aug	Physical Education and Sports for (CWSN)	20	1. Types of Disability. Their Causes and Nature, Disability, Intellectual disability. 2. Types of disorder, their causes and nature (ADHD, SPD, ASD, ODD, OCD) 3. Advantages of physical activities for children with special needs. 4. Strategies to make physical activities accessible for children. Activity -1 * * * *	1. To make them understand about Concept of Disability and Disorder. 2. To make them understand about Types of disability, their Causes and Nature (Cognitive Disability, Intellectual Disability,	1. Knowledge about the role of Paralympics for promoting adaptive sports. 2. Modified of individualized programme that Ceters to the special needs of disabled students.	Portion of 2nd UT Chapter ,,4,5 .6 and 7. DATE 02.09.24. 5th sub. Date 11.11.24 6th sub Them 1 Chapter, 1,2,3,4,and 5 Date 17.09.24
Sep	Children and Women in Sports	14	1. Motor Development and Factors Affectin, Common Postural Deformities.	1. To make them understand about Motor Development and Factors Affecting it.	1. Gain knowledge in general metabolic	

			2. Exercise guidelines at different stages ofgrowth and development, corrective measures for postural, deformities. 3. Sports Participation of women in India. Special consideration Dys-function. 4. Female Athlete triad (Osteoporosis, Amenorrhoea and Eating Dissorders) Activity -1 **Subject Enrich**	2. To make them understand about Exercise Guidelines at Different Stages of Growth and Development. 3. Common Postural Deformities- Knock-Knees, Flatroot, Round shoulders, Lordosis, Kyphosis, Bow Legs and Scoliosis	principles, primarily fuel sources for the working muscle during exercise. 2. Knowledge of Hydration guidelines for safety and performance and know how to evaluable and monitor hydration status 3. Understand the role of nutrition in recovery from injuries.	
Oct	Test & Measurement &Physioloby.	16	1. Fitness test BMI computing Basal metabolic Rate (BMR) 2. Rikli& Jones. Senior citizen fitness test.	1. To make them understand about Motor Fitness Test 2. To make them understand about	1. Students will learn how to take Friends test SAI Khelo Indian Fitness test in	

			3. Physiological factors determining components fo physical fitness sports injuring 4. Effects of exercise on muscular, cardio respiratory system.	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 Cardiovascular Fitness: Harvard Step Test/Rockport Test	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.	
Nov	Biomechanics & Sports. Psychology & Sports. & Training in Sports.	20	1. Newton's law of motion & its application in sports. Equilibrium Dynamic & static centre of gravity Fraction &sports projectile in sports. 2. Jung classification & Big five theory. Phychological Attributes 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	1 The Students will be able to describe the core principles of exercise physiology and related exercise. 2. The students will identily the principle of	Trem 2 Chapter 6,7,8,9 and 10 Date 25.11.24

			Self Esteem, mental, self talk goal setting, types of Aggression in sports. 3. Concept of talent identification and talent development in sports. Introduction of sports traning cycle- Micro meso, Macro cycle Types & Method to develop-strength, Endurance and speed. Types & Method to develop flexibility and coordinative ability.	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, Reasons to Exercise, Benefits of Exercise.	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 future leader's and outstanding clinicians. 6. Contribute to the athletic traning profession though the scholarship and leadership of the facility, staff and students.	

SURENDRANATH CENTENARY SCHOOL
SESSION – 2024-25
ANNUAL PEDAGOGICAL PLAN
CLASS - XII

Subject -Painting

Book - An Introduction to Indian Art, Part-2 (NCERT)

Month	Chapter	No. of pr.	Topics	Learning Objective	Learning Outcome
April '24	Unit-l CH-1, 2,3	2	● The Miniature Painting Tradition ● The Rajsthani, PahariSchools Painting	● Introduction,Origin and Development of miniature paintings ● Six Limbs of Indian Painting ● Pala and Western schools of miniature paintings. ● Rajasthani school,Pahari school of miniature paintings ● Sub school and Artist and their Paintings, techniques of Paintings	● Students can grow knowledge about miniature painting ● Analyze the main topic(Miniature Painting, Origin and Development) * Able to elaborate the questions answers easily.
May '24	Ch-4, 5	2	● The Mughal Schools Painting ● The Deccan Schools Painting	● Mughal school of miniature paintings ● Deccan Schools of miniature paintings ● Sub school and Artist and their Paintings, techniques of Paintings.	● Enhance skill about mughal miniature Painting, Deccan school ● Discover facts about sub school Artist, colour

					technique of miniature Painting etc.
June '24	CH-6	2	• The Benngal school	• The Bengal school and cultural Nationalism • Company painting: • Bengal School origin and development	• Gain more information about Artists and their work • Appreciate Paintings of artists and their colour techniques.
July '24	CH-6	2	• Painting and Artist their discriptions	• The Evolution of Indian National Flag • Contribution of Indian Artists in National freedom struggle	• Evaluation of National Flag • Contribution of Artist in freedom movement.
August '24	Painting practical		• Week 1 Nature composition drawing • Week 2 Nature composition pastel colour • Week 3 draw flowers composition • Week4 Learn about use of pastel colour	• Learn nature study with pencil drawing shading *Illustrate Fruits basket, Flower study with water colour • Use of pastel colour in still life composition.	ACTIVITY- 1 **<u>Experiential Learning: Learners will learn about nature through outdoor work</u>** **Skills:**theyanalyze about shape drawing and colour shades ACTIVITY -2 Learners will do out door art work in school campus **Skills:**Learners will learn about

					use of water colour ● They will analyze about colours' shades
September '24	CH-7		● The Modern Indian Art ● Major Modern Trends	● Introduction to Mordernism and Contemporary art in India ● Abstraction– Anew Trend ● The Progressive Artists group of Mumbai the multifaceted Indian Art.	● Analyze about Indian modern painting ● Gain knwledge about the new trends in contemporary progressive Art.
October '24	CH-8		● Modern Painting ● Graphic Art ● Sculpture	● Benod BehariMukharjee– The Lives of Medieval Saints, M. F. Hussain-Mother Teresa, Amrita Shergil- Haldi Grinder,K. G. Subramanyan-Fairy Tales from Purvapalli ● Krishna Reddy- Whirlpool, Children – SomnathHore, Devi- jyoti Bhatt, Of wall - AnupamSud, Rural south Indian man and woman-LakshmaGoud ● Triumph of Labour-Devi Prasad Roychowdhury,SañthalFa	● Enhance information of Bengal schools progressive Artist's work. ● Their contribution in modern India(Painting, sculpture, Graphic Art.)

				mily- Ram Kinker, Cries Unheard- AmarnathSahgal,Ganesha- P. V. Jankiram,Vanshri- MrinaliniMukharjee	
November '24	Painting practical		● Land scape Drawing ● Land scape in water colour ● Learn Madhubani Painting	● Learn use of water colour in land scape work (monochrome) ● Making Land scape in multi colour. ● Create folk art of India	out door work in school campus **Skills:**Learners will eloborate the use of water colour ● They appreciate the Indian heritage drawing and shading ● They will learn Madhubani Painting
December '24					
January '25					
February '25					
March '25					