SURENDRANATH CENTENARY SCHOOL, DIPATOLI, RANCHI-9

ANNUAL PEDAGOGICAL PLAN

Class- XI (2026-27)

SCIENCE STREAM

Subject Code	**Subject**
301	ENGLISH CORE
042	PHYSICS
043	CHEMISTRY
041	MATHEMATICS
044	BIOLOGY
083	COMPUTER SCIENCE
065	INFORMATICS PRACTICES
803	WEB APPLICATIONS
844	DATA SCIENCE
030	ECONOMICS
048	PHE
049	PAINTING
841	YOGA

SURENDRANATH CENTENARY SCHOOL
SESSION – 2026-27
ANNUAL PEDAGOGICAL PLAN
CLASS XI

SUBJECT: ENGLISH CORE (301)			**BOOKS: HORNBILL; SNAPSHOTS**			
MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**UT/PT/T1**
JUNE'26	**The Portrait of a Lady** **Writing- Poster** **A Photograph** **Writing- Speech**	11	**The Portrait of a Lady-** Importance of grandparents; love between grandmother and grandson; separation and unfamiliarity; old age and acceptance of changing world. **Poster-** Use of poster, language, format **A Photograph-** Recollection of poet's mother's memories; impermanence of life; theme-loss. **Speech-** Use of speech, purpose, format, points to remember.	**The Portrait of a Lady-** Make learners familiar with unfamiliar words/ phrases/ proverbs/ idioms; Make them creative and language proficient; Interviewing grandparents or parents about their childhood-collect their photos with grandparents; mind mapping of the lesson; to value family relationships; to evaluate features of character, plot, and setting. **Poster-** Teach the Dos and Don'ts of poster. Format and permissible language of poster. **A Photograph-** Make students understand the poet's purpose and tone; value of time and people around them; poetic devices. **Speech-** To develop public speaking skills; teach the Dos and Don'ts of speech; format and permissible language.	Students would be able to **The Portrait of a Lady-** Infer implicit meanings of unfamiliar vocabulary words, phrases etc.;Students will interview their grandparents and gather meaningful information about their childhood, values, and life. Ist Term Assessment -Write a critical appreciation of Train to Pakistan by Khushwant Singh, examining themes like Partition, human relationships, communal harmony, characterization, and the author's style and message. **Poster-** Design posters with accuracy on different topics. **A Photograph-** Recite poem with voice modulation, expression; identify literary devices and analyse the use.write the reference to context and paraphrase of the poem Ozymandias by Percy Bysshe Shelley, demonstrating understanding of the theme of impermanence, time, and human pride.	

					Speech- Draft, prepare and deliver speech with accuracy on different topics.	
JULY'26	**The Summer of the Beautiful White Horse** **Grammar**: **Reordering of sentences;** **Tenses and Clauses (gap filling)** **We're Not Afraid to Die…if We Can All Be Together** **The Laburnum Top** **The Address** **Grammar-**	23	**The Summer of the Beautiful White Horse-** Armenia- its geographical location and history; Garoghlanian tribe; temptations at young age; adventure and exploration; honesty and trust; Pangs of conscience. **Reordering of sentences-** Structure of different types of sentences; reordering jumbled sentences without compromising the meaning **Tenses and Clauses-** Tense table; different types of clauses; gap-filling exercises **We're Not Afraid to Die…if We Can All Be Together-** Seafaring skills/ adventure on sea; importance of family; love and care for family members; determination and perseverance. **The Laburnum Top-** Symbiotic relationships existing in nature; poetic devices. **The Address-** World War II and the behaviour of the Nazis towards the Jews; war destroys life and peace restores everything; redemption of the past	**The Summer of the Beautiful White Horse-** Make learners familiar with unfamiliar words/ phrases/ proverbs/ idioms; Make them creative and language proficient; theme – importance of honesty and family reputation; mind map based on the sequence of events as given in the lesson. **Reordering of sentences-**learn about the structure of different types of sentences; to be able to understand the ways of reordering jumbled sentences without compromising the meaning **Tenses and Clauses-** Make the learners familiar with Tense table and clauses; practise exercises on gap-filling. **We're Not Afraid to Die…if We Can All Be Together-**Make learners familiar with unfamiliar words/ phrases/ proverbs/ idioms; Make them creative and language proficient;importance of a close-knit family and the bond shared by the members; different types of a ships and their uses during a voyage; share their best and memorable family moments. **The Laburnum Top-** Make students understand the poet's purpose and tone; poetic devices; various types of symbiotic relationships existing in nature.	**The Summer of the Beautiful White Horse-** Infer implicit meanings of unfamiliar vocabulary words, phrases etc.; write character sketch; <u>write a poem/paragraph/</u> share an anecdote on repentance and pangs of conscience. **Reordering of sentences-** Solve exercises on sentence reordering. **Tenses and Clauses-** Solve gap filling exercises **We're Not Afraid to Die…if We Can All Be Together-** Infer implicit meanings of unfamiliar vocabulary words, phrases etc.; write importance of staying calm in stressful situations; write character sketch; <u>write a story on the same theme.</u> **The Laburnum Top-** Recite poem with voice modulation, expression, and appropriate body language; identify literary devices and analyse the linguistic features; analyse and compare the similarities and differences in	1st UT- 27.07.26 Syllabus: The Portrait of a Lady; A Photograph; The Summer of the Beautiful White Horse; Writing-Speech; Grammar- Reordering of sentences

			and moving on in life.	**The Address-** Make learners familiar with unfamiliar words/ phrases/ proverbs/ idioms; Make them creative and language proficient;	views of Students will be able to compare and contrast the poem' To a Skylark' by Percy Bysshe Shelley, demonstrating understanding of themes like nature, bird imagery, movement, sound, and poetic expression. **The Address-** Infer implicit meanings of unfamiliar vocabulary words, phrases etc.; write a speech on war and its effects on civilians; importance of one's home and familiar things that belonged to an important family member.	
AUGUST' 26	**The Voice of the Rain** **Discovering Tut: the Saga Continues** **Writing-Advertisements** **Grammar-Transformation of sentences** **Writing-Debate**	20	**The Voice of the Rain-** Parallelism drawn between the rain and the song; cyclic movement of rain; role of plants in getting rain. **Discovering Tut: the Saga Continues-** Mystery surrounding the life and death of Tutankhamun; mummies and mummification; the positive and negative aspects of the Egyptian culture. **Writing-Advertisements-** Use of advertisements, purpose, format, types, points to remember.	**The Voice of the Rain-** Make students understand the poet's purpose and tone; poetic devices; parallelism drawn between the rain and the song; cyclic movement of rain; role of plants in getting rain. **Discovering Tut: the Saga Continues-** Make students familiar with phrases like forensic reconstruction, computed tomography etc.; an account of the struggles the research team faced while trying to unravel the death of King Tut; relate to various practices and traditions in their own culture and religion; the Egyptian civilization. **Writing-Advertisements-** Teach the Dos and Don'ts of	**The Voice of the Rain-** Recite poem with voice modulation, expression, and appropriate body language; identify literary devices and analyse the use, linguistic features; appreciates the impact of literary devices in poetry. **Discovering Tut: the Saga Continues-** Write facts on mystery surrounding the life and death of Tutankhamun; mummies and mummification; history of Egyptian culture. Make a flow chart on steps involved in mummification in ancient Egypt. **Writing-Advertisements-**	

	Reading-Comprehension		**Transformation of sentences-** Structure of different types of sentences; transform sentences without compromising the meaning. **Debate writing-** Show skills and abilities in an argument, highlight main points, logical reasoning, format of a debate. **Comprehension-** Types of passages; types of questions; steps to attempt reading comprehension.	advertisements; format and permissible language of different types of advertisements. **Transformation of sentences-** Learn about the structure of different types of sentences; to be able to understand the ways of transforming sentences without compromising the meaning. **Debate writing-** Teach the Dos and Don'ts of debate; format and permissible language of presenting arguments for or against the given topic; conduct debate in class. **Comprehension-** Learn to skim and scan different types of passages; steps to attempt the questions accurately and in less time; understand graphical data and chart; learn new words.	Write/ design different types of advertisements in proper format and with accuracy. **Transformation of sentences-** Solve exercises on transformation of sentences. **Debate writing-** Draft, prepare and present/write debate on different topics related to the social issues on inequality, discrimination, moral values etc. **Comprehension-** Read different types of passage and write the answers to questions that follow.	
SEPTEMBER'26	**Writing-Note-making and summarisation** **Revision** **Conduct ASL**	11	**Note-making and summarisation-** Types of passage; types of questions; how to make good notes; format; abbreviation; summary writing.	**Note-making and summarisation-** Make students familiar with note-making, suitable format, use of abbreviation, provide a title, write a summary.	**Note-making and summarisation-** Read passages, make notes in proper format, use appropriate abbreviation, provide a title, write a summary based on notes.	**Half Yearly Exam**: 17.09.26-30.09.26 **Syllabus** The Portrait of a Lady; We Are Not Afraid to Die, Discovering Tut, A Photograph; Laburnum Top, The Voice of Rain,The Summer of the Beautiful White Horse,The Address

						Writing- Advertisement, Poster, Speech, Debate Grammar- Reordering of sentences; Transformation of Sentences; Gap filling (Tenses and clauses)Reading: Comprehension passage, Note Making and Summarisation.
OCTOBER'26	**Mother's Day** **Childhood** **Revision for 2nd UT**	14	**Mother's Day-** Drama as a medium for conveying a social message; satirical and humorous depiction of the status of women, in particular, a housewife in a family; importance of mother in a family. **Childhood-** A stage of innocence, happiness, unconditional love; gain maturity; hypocrisy of society.	**Mother's Day-** Make students understand and speak about values like care and concern, empathy, compassion, respect for elders, belongingness and tolerance; the struggles and sacrifices of parents and to draw inspiration from them; strengthen the family bonding with sharing and solving problems; accept the members of the family without complaining; realise the worth of sacrifice and struggles of parents for their children. **Childhood-** Make students understand the poet's purpose and tone; poetic devices. Students talk about their favourite childhood activity/person.	**Mother's Day-** Make a card for their mother; dramatisation of the play by different groups. **Childhood-** Recite poem with voice modulation, expression, and appropriate body language; identify literary devices and analyse the use, linguistic features; appreciates the impact of literary devices in poetry. Reference poem on the same theme. Summary writing.	**2nd UT**- 26.10.26 The Voice of the Rain; Discovering Tut; Writing- Debate; Grammar- Tenses, Clauses (Gap filling)

NOVEMBER'26	**The Adventure** **Father to Son** **Revision: Advertisements & Debate**	17	**The Adventure-** Science fiction based on Catastrophe Theory and Lack of Determinism in Quantum Theory; war and peace; alternative solutions to a conflict. **Father to Son-** Generation gap; communication gap; importance of mutual understanding, tolerance and acceptance.	**The Adventure-** Make learners familiar with unfamiliar words/ phrases/ proverbs/ idioms; Make them creative and language proficient; take interest in Indian History; think of an alternative ending; reading for pleasure. **Father to Son-** Make students understand the poet's purpose and tone; poetic devices. Students talk about their problems in understanding their parents' expectation and vice versa.	**The Adventure-** Infer implicit meanings of unfamiliar vocabulary words, phrases etc.; draw contrast between the present world and the parallel world; explain the true meaning of democracy. <u>Define the theories mentioned in the story.</u> **Father to Son-** Identifies literary devices and analyse the use, linguistic features; appreciates the impact of literary devices in poetry. Prepare a speech or debate on a topic related to generation gap/parenting. List the causes and effects of Generation Gap.	
DECEMBER'26	**Birth (5)** **Revision: Poster & Speech**	20	**Birth-** Struggles of a medical practitioner, bringing a baby to this world. Theoretical knowledge vs practical knowledge.	**Birth-** Make learners familiar with unfamiliar words/ phrases; stream of consciousness technique in writing; narrative skills; importance of skills and experience in professional life; importance of intuition; never to give up hope.	**Birth-** Provide a different ending to the story; write a conversation between the doctor and Joe Morgan after 15 years; character sketch; write about doctor's duty towards their patients. Differentiate between theoretical knowledge, practice and experience of a doctor through a Mind Map or a flow chart.	
JANUARY'27	**Silk Road** **The Tale of Melon City** **Revision: Grammar** **Conduct ASL**	20	**Silk Road-** Travelogue; Kora; Silk Road; pilgrimage; people of Tibet and their culture. **The Tale of Melon City-** Ironic representation; ignorance and corrupt power; satire as an important genre; mocks at any government system; comedic chain of events.	**Silk Road-** Make learners familiar with unfamiliar words/ phrases/ proverbs/ idioms; Make them creative and language proficient; take interest in Tibetan culture and lifestyle; author's journey towards Manasarovar and his experience; hardships faced by the author. **The Tale of Melon City-**	**Silk Road-** write a first-person travel narrative inspired by Silk Road, using vivid description and reflective tone. Design a miind map depicting the life and travels of Nick Middleton. **The Tale of Melon City-** <u>Present role play/ drama on the lesson</u>; express the irony on the	**3rd UT-** 04.01.27 **Syllabus**: Mother's Day; Father to Son; Birth; Writing- Advertisements; Grammar- Transformation

				Make learners familiar with Satire/ unfamiliar words/ phrases/ proverbs/ idioms; Make them creative and language proficient; folly of ignorance and irrationality; absurdity and indifference of the political system.	justice system; comment on 'just and placid' king.	of Sentences
FEBRUARY'27	**REVISION**		ANNUA EXAM **Mid February 2027 onward**s			
MARCH'27	**REVISION**		ANNUA EXAM **Mid February 2027 onward**s			

SURENDRANATH CENTENARY SCHOOL, RANCHI

ANNUAL PEDAGOGICAL PLAN (2026-2027)

CLASS: XI
SUBJECT: PHYSICS

BOOKS : NCERT TEXTBOOK,
NCERT EXEMPLAR &S.L.ARORA
LAB MANUAL (Blue Print)

MONTH	CHAPTER	No. OF PERIODS	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/PT/T1
JUNE	**Chapter–1**: Units and Measurements SDG 11 cities and communities	**08**	Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. significant figures, Determining the uncertainty in result. Dimensions of physical quantities, dimensional analysis and its applications.	➢ To make them familiar with different type of measurement and the concept behind it.	➢ Learners will able to use various measuring tools in scientific work and acquire in depth knowledge regarding dimension of a physical quantity	
JULY	**Chapter–2:** Motion in a Straight Line **Chapter–3: Motion in a Plane** **SDG 12** Responsible consumption and production	**24**	Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, uniform and non-uniform motion, average speed and average velocity and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion	➢ Able to analyse simple motion (1-D,2-D) with the help of different mathematical tools and concept.	➢ Able to interpret various graph related to motion Able to define distance¬ ,displacement, speed, velocity, acceleration Apply vector and its¬ application in physics Able to understand 1-D	

			(graphical and calculus treatment). Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration- projectile motion, uniform circular motion. **PRACTICAL 1** **To measure diameter of a spherical/cylindrical body and to measure internal diameter and depth of a given beaker using vernier Callipers and hence find its volume**	**PRACTICAL** **To make them familiar with precise measurement**	and¬ 2-D motion in real life situation **PRACTICAL** **Learners will be able to apply this knowledge in different type of measuring in practical situation**	

AUGUST	**Chapter–4:** Laws of Motion Chapter– 5: Work, Energy and Power SDG 7 Clean energy	**14** **14**	Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road). Work done by a constant force and a variable force; kinetic energy, work- energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: non-conservative forces, motion in a vertical circle; elastic and	➢ To explain Newton's laws of motion and able apply it in real life situation . ➢ Able to understand concept of work done in physics and use it. the **concept of work** as the product of force and displacement. ➢ Distinguish between **positive, negative, and zero work** in different situations. ➢ Interpret the role of angle between force and displacement.	➢ Able to use Newton's laws of motion ➢ Able to identify equilibrium of forces ➢ Able to distinguish between Work, power and energy with all applications. ➢ Identify the situation of elastic and non elastic collision	**UT-01** **03/08/2026**

			inelastic collisions in one and two dimensions. **PRACTICAL 2** **To measure diameter of a given wire and thickness of a given sheet using screw gauge.**	**PRACTICAL To make them familiar with precise measurement.**	**PRACTICAL Learners will be able to apply this knowledge in different type of measuring**	
SEPTEMBER	**Chapter–6: System of Particles and Rotational Motion** SDG 8 Decent work and economic growth	**18**	Centre of mass of a two-particle system, momentum conservation and Centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).	➢ Able to apply, evaluate the motion of system of particles and analyze with using concept of centre of mass.	➢ Able to identify system of particle, ➢ Able to use concept centre of mass for rigid body ➢ Able to explain rotational motion with its application.	**Half Yearly Exam 17th – 30th Sept. 2026**

			PRACTICAL 3 **To Determine the volume of a irregular lamina using screw gauge**	➢ **PRACTICAL** ➢ **To make them familiar with precise measurement**	➢ **PRACTICAL Learners will be able to apply this knowledge in different type of measuring.**	
OCTOBER	**Chapter – 7:** Gravitation SDG10 Reduced inequalities	**12**	Kepler's laws of planetary motion, universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape speed, orbital velocity of a satellite, energy of an orbiting satellite. **PRACTICAL 4** **To determine radius of curvature of a given spherical surface by a spherometer**	➢ To apply the concept of gravity and its analysis through Newton's law of gravity **PRACTICAL** ➢ **To make them familiar with precise measurement**	➢ Able to use Newton's law of gravitation Able to explain & evaluate variation of 'g' due to height and depth Able to use concept of gravitational potential energy. . ➢ **PRACTICAL Learners will be able to apply this knowledge in different type of measuring**	

NOVEMBER	**Chapter–8: Mechanical Properties of Solids** **Chapter–9: Mechanical Properties of Fluids** **Chapter–10: Thermal**	**24**	Elasticity, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity (qualitative idea only), Poisson's ratio; elastic energy. Application of elastic behavior of materials (qualitative idea only). Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its simple applications (Torricelli's law and Dynamic lift). Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise. Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state -	➢ The concept of heat and temperature and how they differ. Comprehend thermal equilibrium and apply Zeroth Law of Thermodynamics. Learn different temperature scales and their conversions. Relate temperature to kinetic energy of particles.	➢ State and apply **Hooke's Law** to describe elastic behaviour within the elastic limit. ➢ Define and differentiate between **elasticity and plasticity** with real-life examples. ➢ Calculate and interpret different **moduli of elasticity** (Young's modulus, Bulk modulus, Shear modulus). Analyze **stress-strain curves** to identify elastic limit, yield point, and breaking point. ➢ Relate mechanical properties of materials to their practical applications	**UT-02** **02/11/2026**

	Properties of Matter **SDG 7 Affordable and clean energy**		latent heat capacity. Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law PRACTICAL 5 **Using a simple pendulum ,plot its L-T^2 graph and use it to find the effective length of second's pendulum**	PRACTICAL **Able to measure the** value of g in lab frame	(e.g., construction materials, springs).□ Explain the concept of **pressure in fluids** and its variation with depth. Apply **Pascal's Law** in hydraulic systems and real-life situations. Describe **buoyancy** and apply **Archimedes' Principle** to solve related problems. Explain **surface tension** and identify factors affecting it with **PRACTICAL** Learners able to apply this knowledge **to understand how a pendulum work**	

DECEMBER	**Chapter–11: Thermodynamics** **Chapter–12: Kinetic Theory** **SDG 8 Decent work and economic growth**	**12** **08**	Thermal equilibrium and definition of temperature, zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics, Second law of thermodynamics: Thermodynamic state variable and equation of state. Change of condition of gaseous state isothermal, adiabatic, reversible, irreversible, and cyclic processes. Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number. PRACTICAL 6 **To find the force constant of a helical spring by plotting a**	➢ The concepts of thermal equilibrium and temperature. ➢ Comprehend heat, work, and internal energy as forms of energy transfer. ➢ Learn and interpret the Zeroth Law of Thermodynamics. **PRACTICAL**	➢ To apply the concept of thermal equilibrium and able to formulate Zeroth law of TD ➢ Able to distinguish between heat, work , internal energy, reversible and irreversible process Able to use KTG for solving practical problems	

			graph between the load and the extension	**To develop understanding of theory**	**PRACTICAL** **Able to apply this knowledge in practical situation to utilize the behavior of spring**	
JANUARY-27	**Chapter–13: Oscillations** **Chapter–14: Waves** **SDG 8 Decent work and economic growth**	26	Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their applications. Simple harmonic motion (S.H.M), uniform circular motion and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum	➢ Able to apply, analyze, and evaluate repetitive motion ,phenomena .able to solve all problems related to the topic.	➢ Able to write and explain various term related to SHM ➢ Able to identify SHM phenomena in real life ➢ Able to formulate mathematical equation of waves ➢ Able to explain Beats and Doppler effect	**UT – 03** **11/01/2027**

			derivation of expression for its time period. Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats			
FEBRUARY-27	Revision **Final Term Exam**	10	**All topics**			

1. 21/04
2. 21/04/26
3. 21/04/26.

SURENDRANATH CENTENARY SCHOOL ,RANCHI

ANNUAL PLAN CLASS – XI CHEMISTRY (Session – 2026-27)

BOOKS: NCERT CHEMISTRY TEXTBOOK FOR CLASS XII, NCERT EXEMPLAR

MONTHS	CHAPTER	No. of Periods	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/PT/T1
JUNE	CH-2 Structure of Atom	13	*discovery of subatomic particles *Rutherford's model and its limitations* *Bohr's model and its limitations, *concept of shells and sub – shells, *duel nature of matter and light, *de – Broglie's Relationship, *Heisenberg uncertainty principle, *concept of orbital, *quantum numbers, shapes of S,P and d-orbital *Rules for filling of electrons in orbital's – Aufbau principle, Pauli's exclusion principle and Hund's rule, *electronic Configuration of atoms, stability of half – filled and completely filled orbital's ACTIVITY- 1 **Activity: Students will learn and search about the recent developments in model of atom**	*Know about the discover of electron, proton and neutron and their characteristics • understanding nature of electromagnetic radiations and plank's quantum theory. • explain the photoelectric effect and describe the features of atomic spectra. • define an atomic orbital in term of quantum numbers • state Aufbau,pauli,hunds rule. • write the electronic configuration	Learner will be able to *know about discovery of sub atomic particles *know about Rutherford and bohr's atomic model *understand nature of electromagnetic radiation and plank's theory *know about photoelectric effect and atomic spectra *know about debroglie relation and Heisenberg uncertainty principle *write electronic configuration *explain Aufbau,pauli,Hunds rule	

1) Rajesh Mishra
2) Sunil Kr Singh

JULY	CH – 1 SOME BASIC CONCEPT OF CHEMISTRY CH – 3 Classification of elements and periodicity of elements	13 10	• understanding role of chemistry in different spheres of life. • determine significant figures. • explain various laws of chemical combinations. • describe the term mole and molecular mass. • determine empirical and molecular formula of a compound • perform the stoichiometric Calculations *Significance of classification, *brief history of the development of periodic table, *modern periodic law and the present form of periodic table, *periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency *Nomenclature of elements with atomic number greater than 100	• understanding role of chemistry in different spheres of life. *explain the characteristics of three states of matte *classify the substance into elements , compounds and mixtures • determine significant figures. • explain various laws of chemical combinations. • describe the term mole and molecular mass. • determine empirical and molecular formula of a compound • perform the stoichiometric Calculations IUPAC names of elements with atomic number higher than 100. • classify elements into s,p,d & f – block and learn their main characteristics. • recognise the periodic trends in physical and chemical properties of elements. • explain the variation in trends in properties like atomic size, ionization enthalpy, electron gain enthalpy, electronegativity, metallic and non – metallic property.	Learner will be able to *know classification and properties of matter *differentiate between precision accuracy and find out the significant figures *know the various law's of chemical combination *understand the significance of atomic mass, average atomic mass, molecular mass and formula mass *know the term mole concept *understand how to calculate mass %, empirical and molecular formula *solve problem based on stoichiometric reaction *understand the concept of grouping elements in according to periodic table *understand the periodic law *understand the significance of atomic number and electronic configuration as the basis of periodic classification *classify elements into s,p,d and f block elements *write IUPAC nomenclature of elements with atomic number higher than 100 *recognise the periodic trends in physical and chemical properties of elements *compare the reactivity of elements	UT –I 21/07/25 Ch- 2 Atomic structure

AUGUST	CH - 4 chemical bonding and Molecular structure CH-8 Redox reactions:	13 8	s, p and d orbital's and *shapes of some simple molecules, *molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), *Hydrogen bond. ACTIVITY1 **ACTIVITY : STUDENTS WILL PREPARE MODEL OF MOLECULES ON VSEPR THEORY** *Concept of oxidation and reduction, redox reactions, *oxidation number, * balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, *applications of redox reaction.	• explain the octet rule and its limitations, draw Lewis structure of simple molecules. • explain the formation of different types of bond. • describe the VSEPR theory and predict the geometry of simple molecules. • explain the various types of hybridisation involving s,p& d orbital's and draw shapes of simple molecules. • describe the molecular orbital theory of homonuclear diatomic molecules. • explain the concept of hydrogen bond. Identify redox reaction * define the terms oxidation,reduction,oxidising and reducing agent. *explain mechanism of redox reaction *balancing redox reaction by oxidation number method and ion – electron method.	*explain octet rule and its limitation *explain formation of different types of bond *describe VSEPR theory and predict the geometry of simple molecules *explain valence bond theory For formation of covalent bond *explain different type of hybridisation *describe molecular orbital theory *explain concepts of hydrogen bond *identify redox reaction *identify oxidising and reducing agents *explain mechanism of redox reaction *balance redox reaction by oxidation number and ion – electron method	
SEPTEMBER	**REVISION FOR FIRST TERM**		CH- 1,2,3,4 ,8	• REVISION	**TERM- I EXAM**	

OCTOBER	CH- 6 THERMODYNAMICS	14	Concepts of system and types of system,surroundings,work, heat,energy,extensive and intensive properties, state functions, First law of thermodynamics-internal energy and enthalpy •, heat capacity and specific heat, measurement of ΔU and ΔHess's law of constant heat summation, enthalpy of bond Dissociation,combustion,formation , atomization, sublimation, phase transition,ionization,solution and dilution. • Second law of thermodynamics, introduction of entropy as a state function, Gibb's energy change for spontaneous and non – spontaneous processec,criteria for equilibrium, Third law of thermodynamics (brief introduction) :	*explain the terms ; system and surroundings *discriminate between close, open and isolated system *explain internal energy ,work and heat *state first law of thermodynamics and express its mathematically *calculate energy changes as work and heat contribution *correlate ΔU and ΔH *measures experimentally ΔU and ΔH *calculate enthalpy changes for various types of reactions *state and apply Hess's law of constant heat summation *differentiate between extensive and intensive property *define spontaneous and non – spontaneous process *explain entropy as a thermodynamic state function and apply it for spontaneity *explain gibb's energy change *establish relationship between ΔG and spontaneity ,ΔG and equilibrium constant	*know terms ;system ,surrounding, discriminate between close, open and isolated system *know internal energy ,work and heat *know the first law of thermodynamic and express it mathematically *calculate energy change as work and heat contribution in chemical system *define standard states of ΔH *calculate enthalpy changes for various types of reaction *know and apply Hess's law of constant heat summation *define spontaneous and non spontaneous process *explain entropy and apply it for spontaneity *explain Gibb's energy change and establish relationship between ΔG and spontaneity ,ΔG and equilibrium constant	2nd UNIT TEST 08/09/25 Ch – 4 &8 Chemical bonding and balancing of redox reaction.
	CH-7 EQUILIBRIUM	18	*Equilibrium in physical and chemical processes, *dynamic nature of equilibrium, *law of mass action, *equilibrium Constant, factors	*identify dynamic nature of equilibrium involved in physical and chemical processes *state law of equilibrium *explain characteristics of	* identify dynamic nature of equilibrium involved in physical and chemical processes *know the law of equilibrium *explain characteristics of	

NOVEMBER	SDG: (3) Good health and well - beings		affecting equilibrium *– Le – Chatelier's principle, *ionic equilibrium - * ionization of acids, bases, *Strong and weak electrolytes, *degree of ionization, *ionization of poly basic acids, acid strength, * concept of h,Henderson equation, *hydrolysis of salt, *buffer solution, *solubility product, *common ion effect. ACTIVITY- 1 **Activity: Students will learn and search about the pH, of various food items used in daily life and their effect on human health**	equilibria involved in physical and chemical processes *write expressions for equilibrium constants *establish a relationship between Kp and Kc *explain various factors that affect the equilibrium state of a reaction *classify substances as acids or base according to Arrhenius, Bronsted and Lewis concepts *classify acids and bases as weak or strong in terms of their ionization constants *describe Ph scale for representing hydrogen ion concentration *explain ionisation of water and its duel role as acid and base *describe ionic product Kw and pKw for water *appreciate use of buffer solution *calculate solubility product constant	equilibria involved in physical and chemical process *write expression for equilibrium constant *establish relationship between Kp and Kc *explain various factors affecting equilibrium state of a reaction *classify substances as acid ,base according to arrenius,Bronsted and lewis concept *explain degree of ionization *describe Ph scale *explain ionization of water and ionic product of water *appreciate buffer solution *calculate solubility product constant	
December	CH- 12 ORGANIC CHEMISTRY : SOME BASIC PRINCIPLES AND TECHNIQUES	18	*General introduction , methods of purification, qualitative and quantitative analysis, *classification and IUPAC Nomenclature of organic compounds, * electron displacement in a covalent bond : inductive effect, Electromeric effect, resonance and hyperconjucation, *Homolytic and Heterolytic fission of a covalent bond, *free radical, Carbocations,	*write structure of organic molecules in various ways *classify the organic compounds * name the organic compounds according to IUPAC system	*understand the distinction between organic and inorganic compounds *know various ways of representing structures of organic compounds *classify organic compound and write IUPAC nomenclature *explain the influence of electronic displacement on structure and reactivity of organic compound	

January	CH- 13 HYDROCARBON **SDG: (3)** Good health and well - beings	15	carboanions, *Electrophiles and Nucleophiles, *types of organic reactions *classification of hydrocarbons: *aliphatic ; Alkane; nomenclature, isomerism, conformation, physical properties, chemical reactions including free radical mechanism of halogenations , combustion and Pyrolysis. *Alkenes ; nomenclature, structure of double bond, geometrical isomerism, physical properties, methods of preparation, chemical reactions, addition of hydrogen, halogen ,water, hydrogen halides, ozonolysis, oxidation, Mechanism of electrophilic addition. *Alkynes: nomenclature, structure of triple bond, methods of preparation, chemical properties acidic character of alkynes, addition reaction of hydrogen, halogens, hydrogen halides and water *Aromatic ; introduction, IUPAC nomenclature, benzene, resonance, aromaticity, chemical properties, mechanism of	*understand the concept of organic reaction mechanism *explain the influence of electron displacements on structure and reactivity of organic compounds *recognize the types of organic reactions *learn the techniques and principles of purification and qualitative and quantative analysis of organic compounds. *name hydrocarbons according to IUPAC system of nomenclature *recognize and write structures of isomers of alkanes, alkenes, alkynes and aromatic hydrocarbons *learn about various methods of preparation of hydrocarbons *distinguish alkanes , alkenes ,alkynes and aromatic hydrocarbons on the basis of physical and chemical properties	*recognise the types of organic compound *learn the techniques of purification of organic compound *name hydrocarbon according to IUPAC system of nomenclature *recognise and write structure of isomers of alkanes,alkenes alkynes and aromatic compounds *learn about various methods of preparation *distinguish between alkanes,alkenes and alkynes on the basis of physical and chemical properties *draw and differentiate between various conformation of ethane *compare structure of benzene *explain aromaticity and understand mechanism of electrophilic substitrution reaction *predict directive influence of substituents in mononuclear substituting benzene ring *learn about carcinogenicity and toxicity	3rd UNIT TEST 08/12/25 Ch – 6& 9 Equilibrium ,IUPAC and Electron displacement in a covalent bond

			Electrophilic substitution, nitration, sulphonation, halogenations, Friedel Craft's alkylation and acylation, *Directive influence of functional group in monosubstituted benzene, *carcinogenicity and toxicity. ACTIVITY- 1 **Activity: Students will learn and search about the uses of various hydrocarbons and the effect of polynuclear aromatic compounds on human health**	*predict the formation of addition products of un symmetrical alkenes and alkynes *comprehend the structure of benzene , explain aeromaticity and understand the mechanism of electrophilic substitution reactions of benzene *learn about carcinogenicity and toxicity.		
FEBUARY			REVISION ALL CHAPTERS - 1,2,3,4,6,7,8,12,13		FINAL TERM	

SURENDRANATH CENTENARY SCHOOL, RANCHI

ANNUAL PLAN (2026-2027)

CLASS: XI **SUBJECT: MATHEMATICS (041)**			**BOOKS: NCERT MATHEMATICS TEXTBOOK, R.S. AGGARWAL, LAB MANUAL (Blue Print)**			
MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**UT/PT/T1**
JUNE	CH-1 1.SETS AND FUNCTIONS SDG/Life Skills/Values: No poverty (1), life on land (15).	15	• SUMMER VACATION • SUMMER VACATION • Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement. • Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself $(uptoRxRxR)$. Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. ACTIVITY- 1 students will be asked to form models based on union and intersection of sets. **Skills:** Curiosity, Critical	➢ Children will learn how to represent a set and its subset. ➢ Will know about Venn diagram, union and intersection of sets. ➢ Will know about cartesian product of sets ➢ Develops the idea of Set from the earlier learnt concepts in number system, geometry etc. ➢ Identifies relations between different sets.	To apply the concept toproblems. To describe aproblem pictorially usingVenndiagrams. To find domain andcodomainoffunctions	

			Thinking.			
JULY	CH-1 1.SETS AND FUNCTIONS. 2.TRIGONOMETRIC FUNCTIONS SDG/Life Skills/Values: Affordable and clean energy(7), decent work and economic growth(8)	29	• Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions. • Positive and negative angles. Measuring angles in radians and in degrees and conversion	➢ Identifies difference between Relations and Functions. ➢ Will know about domain, range etc for Relations and Functions both. ➢ Will know about positive and negative angles and hence measurement of angles. ➢ Idea of trigonometric identities.	To solve problems onradianand degree measure ofangles,To able to useidentitiesinsolvingproblems	

			from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity, for all x. • Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing$sin\ (x \pm y)\ and cos\ (x \pm y)$ in terms of $sinx, siny, cosx$& cosy and their simple applications. Deducing identities like the following: $\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}$, $\cot(x \pm y) = \frac{\cot x \cot y \mp 1}{\cot y \pm \cot x}$, $\sin C \pm \sin D, \cos C \pm \cos D$ ➢ TRIGONOMETRY: Identities related to sin2x, cos2x, tan2 x, sin3x, cos3x and tan3x.			
AUGUST	CH- 2 1.COMPLEX NUMBERS AND QUADRATIC EQUATIONS 2. LINEAR	28	• Need for complex numbers, especially$\sqrt{-1}$, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane. • Linear inequalities. Algebraic solutions of linear inequalities in one	➢ Extends the idea of real numbers to a larger system of complex numbers. ➢ Demonstrates strategies for solving systems of linear inequalities ➢ Applies the ideas of permutations	To solve problems oncomplexnumbers To find graphical solutions tosystemofequations	**UT-I** **17/08/2** Sets and Functio Trigono Functio

	INEQUALITIES 3. PERMUTATIONS AND COMBINATION		variable and their representation on the number line. • Permutations and combinations: Fundamental principle of counting. $Factorialn\ (n!)$. Permutations and combinations, Formula for $P(n,r)\ andC(n,r)$ and their connections. • Permutations and combinations: simple applications. ACTIVITY1: Children will be asked to perform activity on linear and circular permutations. **Subject Enrichment:** 1. Children will learn how to solve Linear inequalities. 2. Arrange objects in linear and circular form. **Skills:** Curiosity, Critical Thinking	and combinations to daily life situations of arranging and grouping the objects.	To find the number of waysin which a particularcombinationorarrangementcan bedone.	
SEPTEMBER	CH- 2 BINOMIAL THEOREM. **SDG: No poverty (1), decent work and economic growth (8).**	10	• Binomial theorem: History perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications. • 1ST TERMINAL EXAMINATION • 1ST TERMINAL EXAMINATION • Binomial theorem:	➢ Develops the idea of Binomial theorem for a positive integral index from the earlier learnt concepts of finding squares and cubes of binomials. ➢ Using Binomial theorem or	To find expansion ofbinomial,generalandmiddleterms.	**1ST TERM 17/09/2026TO 30/09/2026** Sets and Functions, Trigonometric Functions. Complex Numbers and Quadratic equations.

			from a line. ACTIVITY- 1 Children will be asked to perform activity based on AP and GP. **Experiential Learning:** Children will understand the difference between AP and GP. **Skills:** Curiosity, Critical Thinking.			
NOVEMBER	CH-3 1.CONIC SECTIONS 3 D GEOMETRY. SDG: Good health and well-being (3), industry innovation and infrastructure (9).	21	• Distance of a point from a line. • Conic Sections: Sections of a cone: Circles, Parabola. • Conic Sections: Ellipse, hyperbola. Standard equations and simple properties of parabola, ellipse and hyperbola. • Standard equation of a circle. Introduction to Three-dimensional Geometry: Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula.	➢ Analyses different curves like circles, ellipses, parabolas and hyperbolas. ➢ Develops strategies of locating a point in three dimensions based on the concepts of two-dimensional coordinate geometry.	To find equation of circle invariousforms.Tounderstandthe geometry of conicsections. To find equation ofparabola, ellipse, hyperbola.To apply the knowledge ofconicsection.	**UT-II** **17/11/2026** Permutations and Combinations, Binomial Theorem, Sequence and Series.
DECEMBER	CH-4 CALCULUS	22	• Calculus (Limits and Derivatives): Derivative introduced as rate of change both as that of distance function and geometrically. • Intuitive idea of limit. Limits of polynomials and rational functions	➢ Evolves the concepts of limit and derivative of a function by analysing the behaviour of functions when the corresponding variable	To find limiting values ofdifferent functions, Tocalculate derivatives usingfirst principle, To use variousrulesforfindingderivatives,	.

			General and middle term in the expansion, simple applications. **Group discussion**- Discussion on expansion of a different powers of a Binomial using Pascal's tringle method. ACTIVITY-1 Can do activity on Pascal's triangle, and then children can learn how get easy expansion of different powers of binomials.	Pascal's triangle method, children will learn easy expansion of different powers of a binomial.		Linear Inequalities. Permutations and Combinations, Binomial
OCTOBER	CH-2,3 1.SEQUENCE AND SERIES COORDINATE GEOMETRY STRAIGHT LINES SDG: Quality education (4), decent work and economic growth (8).	15	• PUJA VACATION • Sequence and Series: Sequence and Series. Arithmetic Progression (A. P.). Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P. • Sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M. • Straight Lines: Brief recall of two-dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point - slope form, slope-intercept form, two-point form, intercept form. Distance of a point	➢ Extends the ideas related to Arithmetic progressions and Geometric progression learnt earlier to new types of sequences and their series. ➢ Constructs different forms of a straight line using the earlier learnt concepts of coordinate geometry.	Todeterminegeneraltermofseries in AP and GP, Calculatesumofnterms ofseries. To find Slope of line,Calculate angle between 2line, To use various forms ofequation of line. To calculatedistance between 2 parallellines.	

	SDG/Life Skills/Values: Industry innovation and infrastructure (9).		trigonometric, exponential and logarithmic functions. • Definition of derivative relate it to scope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions. • WINTER VACATION ACTIVITY1: Students will be asked to perform activity how to differentiate a function using 1st principle. **Subject Enrichment:** Children will learn, how to differentiate a function. **Skills:** Curiosity, Critical Thinking.	approaches a certain value. ➢ Will learn how to differentiate different types of functions.		
JANUARY	CH-6 1. STATISTICS. 2. PROBABILITY. **SDG:** Industry innovation and infrastructure (9).	25	• Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data. • Measures of Dispersion: Variance and standard deviation of ungrouped/grouped data. • Probability: Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive	➢ Applies Measures of dispersion to get a better interpretation of data of different daily life situations. ➢ Builds up the axiomatic approach to Probability through the terms, random experiment, Sample space, events etc.	Tofindmeandeviationaboutmean and median, To findvarianceandstandarddeviation, To find coefficientof variation and analyze thedata To find sample space, ToidentifybetweenExhaustiveevents and mutuallyexclusive events, To findprobability of an event forsimpleproblems.	**UT-III 25/01/2027** Straight Lines, Conic Sections

			events, mutually exclusive events • Probability of an event, probability of 'not', 'and' and 'or' events. **Group discussion-** On mean, variance and standard deviation.			
FEBRUARY		10	• REVISION • REVISION • FINAL EXAMINATION • FINAL EXAMINATION			**ANNUAL EXAM Mid Feb.'27 onwards** Syllabus: Entire syllabus

1. SUDHA PRASAD (S. Prasad)

2. ARUN KUMAR SINGH. (A.K.)

3 AJIT KUMAR SINGH (AKS)

SURENDRANATH CENTENARY SCHOOL
SESSION – 2026-27
ANNUAL PEDAGOGICAL PLAN
CLASS XI

Subject - Biology
Book- NCERT SCIENCE TEXTBOOK FOR CLASS XI

Month	Chapter	No. of pds.	Topics	Learning Objective	Learning Outcome	UT/ TERM
June 26 July 26	Chapter 8 Cell – The Unit of Life Chapter 9 - Biomolecules Chapter 10 Cell cycle and cell division Chapter 1- Living Things Taxonomy and Systematics	13 26	• Chapter 8 Cell – The Unit of Life: Cell Theory, prokaryotic and eukaryotic cells , cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system- endoplasmic reticulum, ribosomes, Golgi bodies, Nucleus lysosomes, vacuoles; mitochondria, plastids Practical: Study parts of a compound microscope • Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; concept of metabolism; Enzymes - properties, enzyme action, factors, classification, Co-factors. • Cell cycle, mitosis, meiosis and their significance • Chapter 1- Living Things Taxonomy and Systematics	To enable the learners: ➢ Differentiate prokaryotic and eukaryotic cells ➢ Identify the cell organelles ➢ Explain the functions of the cell organelles ➢ Understand mechanism of drawing structure of carbohydrates, lipids, proteins, nucleic acids. ➢ Learn about enzymes and catalytic activity. ➢ Write equations to show formation of peptic bond, glycosidic bond, phospodiester bond and ester bonds. ➢ Learn the steps and significance of mitosis and meiosis ➢ Identify the great variety of living things, the practice of classification, taxonomy and systematics, binomial nomenclature, tools for study of taxonomy ➢ Experience the need for classification ➢ List out the basic characters of living things	Learners will be able to: ➢ Compare prokaryotic and eukaryotic cells ➢ List the functions of cell organelles ➢ learn mechanism of drawing structure of carbohydrates, lipids, proteins, nucleic acids. ➢ Learn about enzymes and catalytic activity. ➢ Show formation of peptic bond, glycosidic bond, phosphodiester bond and ester bond ➢ Explain the process of mitosis and meiosis and their significance ➢ Explain the basis of classification ➢ List significance of classification ➢ Compare various taxonomic groups	UT 1 13/07/26 CH- 8 & 9

	Chapter 2- Biological Classification		• Chapter 2-Biological Classification: Five kingdom classification; Salient features and classification of Monera, Protista. Fungi into major groups; Lichens, Viruses and Viroids Practical- Study the stages of mitosis and meiosis through permanent slides. Study of mitosis in onion root tip			
August 26	Chapter 3- Plant Kingdom Chapter 4 - Animal Kingdom Chapter 5 – Morphology of Flowering Plants	25	• Chapter 3 – Plant Kingdom: Salient features and classification of plants into major groups – Algae, Bryophyta, Pteridophyta Gymnospermae and Angiospermae (three to five salient and distinguishing features and at least two examples of each category); Angiosperms – classification up to class, characteristic features and examples. • Chapter 4- Animal Kingdom: Salient features and classification of animals non-chordates up to phyla level and chordates up to class level (three to five salient features and at least two examples of each category). (No live animals or specimens should be displayed.) • Chapter 5 - Morphology and modifications: Morphology of different parts of flowering plants: root, stem, leaf,	To enable the students: ➢ Identify the great variety of living things, the practice of classification, taxonomy and systematics, binomial nomenclature, tools for study of taxonomy ➢ Experience the need for classification ➢ List out the basic characters of living things ➢ Concept of species and taxonomical hierarchy ➢ Apply the knowledge in classifying things ➢ Differentiate between living and non - living things ➢ Group organisms on the basis of similarities and differences ➢ Develop skill in collecting and preserving specimen	Students will be able to ➢ Explain the basis of classification ➢ List significance of classification ➢ List identifying features of various groups of plants ➢ Classify plants and animals on the basis of their characteristics ➢ Differentiate living and non-living things ➢ Notice similarities and differences among organisms ➢ Observe specimens and identify them on the basis of the features	

			inflorescence, flower, fruit and seed. Description of families: Fabaceae, Solanaceae and Liliaceae Practical: Study types of inflorescence			
September 26	Chapter 6 Anatomy of flowering plants Chapter 7- Structural Organisation in Animals **SDG(15)**: Life on Land	9	• Chapter 6 Anatomyof flowering plants: functions of different tissues and tissue systems in dicots and monocots. Secondary growth. • Chapter 7- Structural Organisation in Animals: Animal tissues; Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog (a brief account only). Practical: Human skeleton and different types of joints	To enable the students: ➢ Enable the students to learn the morphology and modification root stem, stem, leaf, inflorescence, flower, flower, parts of flower, Fruit, seed, structure of dicot and monocotyledonous seed. ➢ Enable students to describe a flower and its part, write floral formula with floral diagrams. ➢ Develop skill of drawing the diagrams. ➢ Enable the students to apply their knowledge in real life situation. ➢ Study the anatomy and physiology of frogs ➢ Gain a deeper understanding of the biological principles and processes that govern life and adaptations of amphibians	The students will be able to: ➢ describe a flower part, write floral formula with floral diagrams. ➢ Identify various types of inflorescences ➢ Name the parts of a seed ➢ Differentiate dicot and monocotyledonous plants ➢ Draw floral diagrams ➢ Identify and describe the external features of a frog ➢ Describe the internal organs and systems – digestive, respiratory, circulatory, nervous and reproductive	

October 26	Chapter 11- Photosynthesis in higher plants	17	• Photosynthesis in higher plants, pigments involved in photosynthesis, photochemical and biosynthetic phases of photosynthesis, cyclic and non-cyclic phosphorylation, chemiosmotic hypothesis, photorespiration, C3 and C4 pathways, factors affecting photosynthesis. **Practical:** Separation of plant pigments through paper chromatography	Enables the students to : ➢ learn the process of photosynthesis ➢ Identify the photosynthetic pigments ➢ Learn photochemical and biosynthetic pathways ➢ Identify the factors affecting photosynthesis ➢ Learn C3 and C4 pathways	Students will be able to: ➢ Describe the process of photosynthesis ➢ List photosynthetic pigments ➢ Explain photochemical and biosynthetic pathways ➢ List the factors affecting photosynthesis ➢ Compare C3 and C4 pathways	UT II 05/10/26 CH- 5, 6 & 11
November 26	Plant Physiology Chapter 12- Respiration in Plants Chapter-13 Plant Growth and Development	21	• Respiration-Glycolysis, fermentation, aerobic respiration, Respiratory balance sheet, Amphibolic Pathway, Respiratory Quotient Growth and Development- Growth, Differentiation and Redifferentiation, development and plant growth regulators	To enable the learners: ➢ Trace the mechanism of movement of water and minerals ➢ Trace the mechanism of movement of food ➢ Learn micronutrients and macronutrients in plants ➢ Identify the physiological processes – photosynthesis, respiration, nitrogen metabolism	Students will be able to: ➢ Explain the mechanism of ascent of sap through xylem ➢ Explain the mechanism of translocation through phloem ➢ Mention the micro and macronutrients in plants ➢ Describe the physiological processes – photosynthesis, respiration, nitrogen metabolism	
December 26	Human Physiology Chapter 14- Breathing and exchange of gases Chapter 15- Body fluids and circulation	21	• Breathing and exchange of gases : Respiratory organs in animals; Respiratory system in humans; mechanism of breathing and it's regulation of cardiac activity • Body fluids and circulation : Composition of blood, blood groups, coagulation of blood; composition of lymph and it's function; human circulatory system – Structure of human heart	To enable the learners: ➢ Learn the process of breathing and exchange of gases ➢ Identify the parts of respiratory system and find out the regulation of breathing mechanism on cardiac activity	Students will be able to: ➢ Explain the process of respiration ➢ Mention the parts of respiratory system and list their functions ➢ Describe the breathing mechanism and its role on cardiac activity ➢ Mention the composition of blood	UT III 07/12/26 14 & 15

	SDG(3): Good Health and Well Being		and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity.	➢ Learn the process of coagulation and blood groups ➢ Learn the composition of blood and lymph, parts of circulatory system and their functions	and lymph, blood groups and coagulation process ➢ List the functions of each part of circulatory system	
January 27	Chapter 16- Excretory products and their elimination Chapter 17- Locomotion and Movement Chapter 18- Neural Control and Coordination Chemical coordination Chapter19- Chemical Coordination and Integration **SDG(3):** Good Health and Well Being	21	• Excretory products and their elimination : Modes of excretion – ammonotelism, uricotelism; human excretory system – structure and function; urine formation, osmoregulation; regulation of kidney function • Locomotion and Movement : Types of movement – ciliary, flagellar, muscular; skeletal muscle – contractile proteins and muscle contraction; skeletal system and it's functions; joints. Neural control &coordination : Neuron and nerves; Nervous system in humans – central nervous system; peripheral nervous system and visceral nervous system • Chemical coordination : Endocrine glands and hormones; human endocrine system – hypothalamus, pituitary, pineal, thyroid, adrenal, pancreas, gonads; mechanism of hormone action	To enable the learners: ➢ Identify the excretory wastes ➢ Define modes of excretion – ammonotelism, uricotelism ➢ Identify the parts of excretory system and learn their functions ➢ Observe skeleton and identify the bones and joints ➢ Recognise the structure of a neuron and learn conduction of nerve impulse ➢ Identify endocrine glands and find out their secretions and role of each hormone	Students will be able to: ➢ List excretory wastes ➢ Explain ammonotelism, uricotelism ➢ Mention the organs involved in excretion and their functions ➢ List the bones and joints in human skeleton ➢ Draw neuron and show the transmission of nerve impulse ➢ List endocrine glands and their secretions	

SURENDRANATH CENTENARY SCHOOL, RANCHI

ANNUAL PEDAGOGICAL PLAN

Class: XI (2026-2027)

CLASS: XI **SUBJECT: Computer Science (083)**			**Text Book : Computer Science, NCERT** **Reference Book:** Computer Science With Python By Sumita Arora			
MONTH	**CHAPTER/Units**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVE**	**LEARNING OUTCOME**	**UT/PT/T1 (tentative)**
JUNE	**Computer Systems and Organisation**	7	(a) Basic computer organisation (b)Types of software (c)Operating System	Students will learn basic understanding of computer systems- architecture, operating system, and cloud computing	Students should be able to develop a basic understanding of computer systems- architecture, operating system, and cloud computing	
JULY	**Computer Systems and Organisation (Contd)** **Computational Thinking and Programming - I**	8 12	(a) Boolean Logic (b)Number System (c)Encoding Schemes Introduction to Problem-solving Familiarization with the basics of Python programming Knowledge of data types **Suggested Practicals:** (a) Input a welcome message and display it. (b) Input two numbers and display the larger / smaller number.	Students will learn basic understanding of Number System, Boolean Logic, Encoding Schemes etc.	Students should be able to develop a basic understanding of Various Number System, Boolean Logic, and Encoding Schemes Students should be able toDevelop basic computational thinking	UT - I
AUGUST	**Computational Thinking and Programming - I**	20	Operators Expressions Errors Flow of Control Conditional statements Iterative Statement **Suggested Practicals:**	Students will learn basic understanding of various data types and their uses	Students should be able to explain and use data types	UT- II

			(a) Input three numbers and display the largest / smallest number. (b) Generate the following patterns using nested loops: (c) Write a program to input the value of x and n and print the sum of the series: (d) Determine whether a number is a perfect number, an Armstrong number or a palindrome. (e) Input a number and check if the number is a prime or composite number. (f) Display the terms of a Fibonacci series. (g) Compute the greatest common divisor and least common multiple of two integers.			
SEPTEMBER	**Computational Thinking and Programming - I**	10	Iterative Statement Revision	Students will learn the art of designing their own Algorithm/pseudocode	Students should be able to appreciate the notion of algorithms	**First Term**
OCTOBER	**Computational Thinking and Programming - I**	10	Strings: Introduction, String operations (concatenation, repetition, membership and slicing), traversing a string using loops, built-in functions/methods–len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(),islower(), isupper(), isspace(),lstrip(), rstrip(), strip(), replace(), join(), partition(), split() **Suggested Practical:** (a) Count and display the number of	students will be able to: 1. Understand strings as sequences of characters and their representation in Python. 2. Perform basic string operations like concatenation, repetition, membership, and slicing.	tudents will be able to: 1. Create and manipulate strings using various operations and techniques. 2. Write programs to iterate through strings and extract meaningful information. 3. Use string functions and methods correctly in different scenarios.	

			vowels, consonants, uppercase, lowercase characters in string. (b) Input a string and determine whether it is a palindrome or not; convert the case of characters in a string	3. Traverse strings using loops to access and process individual characters. 4. Apply commonly used built-in functions and methods for string manipulation. 5. Use string methods for validation, formatting, and modification of text data	4. Validate and format input data using appropriate string methods. 5. Solve real-world problems involving text processing and string handling.	
November	**Computational Thinking and Programming - I**	20	Lists: introduction, indexing, list operations (concatenation, repetition, membership and slicing), traversing a list using loops, built-in functions/methods–len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists, suggested programs **Suggested Practical:** (a) Find the largest/smallest number in a list/tuple. (b) Input a list of numbers and swap elements at the even location with the elements at the odd location.	students will be able to: 1. Understand the concept of lists as ordered, mutable collections in Python and perform indexing. 2. Apply list operations such as concatenation, repetition, membership, and slicing. 3. Traverse lists using loops to access and manipulate elements.	students will be able to: 1. Create and manipulate lists using indexing and slicing techniques. 2. Write programs to perform various list operations and traversals. 3. Use appropriate list methods and functions for data handling and modification. 4. Analyze and process data stored in lists, including nested lists. 5. Develop programs using lists for real-life	UT- III

			(c) Input a list/tuple of elements, search for a given element in the list/tuple. (d) linear search on list of numbers and counting the frequency of elements in a list.	4. Use built-in functions and methods like append(), extend(), insert(), remove(), pop(), sort(), and reverse(). 5. Explore nested lists and apply lists in solving simple programming problems.	applications such as data storage, sorting, and searching	
December	**Computational Thinking and Programming - I**	18	Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership and slicing); built-in functions/methods – len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple Dictionary: Introduction, accessing items in a dictionary using keys, mutability functions/methods – len(), dict(), keys(), values(), items(), get(), update(), del(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), sorted(); **Suggested Practical:** (a) Find the largest/smallest number in a list/tuple. (b) Input a list of numbers and swap elements at the even location with the elements at the odd location.	students will be able to: 1. Understand tuples and dictionaries as data structures, including immutability of tuples and mutability of dictionaries. 2. Access elements using indexing in tuples and keys in dictionaries. 3. Apply operations such as concatenation, repetition, membership, and slicing (for tuples) and key-based access (for dictionaries). 4. Use built-in functions	students will be able to: 1. Differentiate between tuples and dictionaries based on properties and usage. 2. Create and manipulate tuples and dictionaries using appropriate syntax and methods. 3. Retrieve, update, and manage data efficiently using built-in functions. 4. Work with nested tuples and dictionaries to represent structured data. 5. Develop programs using tuples and dictionaries for real-life applications such as data storage and	

			(c) Input a list/tuple of elements, search for a given element in the list/tuple. (d) Count the number of times a character appears in a given string using a dictionary (e) Create a dictionary with names of employees, their salary and access them. (f) Finding the minimum, maximum, mean of values stored in a tuple (g) Linear search on a tuple of numbers, counting the frequency of elements in a tuple.	and methods like len(), count(), index(), keys(), values(), items(), get(), and update(). 5. Perform data manipulation using tuple assignment, nested structures, and dictionary methods like pop(), setdefault(), and sorted().	mapping.	
January	**Computational Thinking and Programming – I** **Society, Law and Ethics**	20	Introduction to Python modules: Importing module using 'import <module>' and using from statement, importing math module random module Digital Footprints.Digital Society and Netizen.Data Protection: Intellectual property rights violation of IPR(plagiarism, copyright infringement, trademark infringement), open source software andlicensing (Creative Commons, GPL and Apache) Cyber Crime ,Cyber safety	Students will learn the value of technology in societies along with consideration of gender and disability issues.	Students should be able to understand the value of technology in societies along with consideration of gender and disability issues.	
February	**Society, Law and Ethics**	10	Malware: viruses, trojans, adware E-waste management. Information Technology Act Technology and society **Revision**	Students will learn cyber ethics, cyber safety	Students should be able to explain cyber ethics, cyber safety, and cybercrime	**Final Term Complete Syllabus**

SURENDRANATH CENTENARY SCHOOL, RANCHI

ANNUAL PEDAGOGICAL PLAN

Class: XI (2026-2027)

CLASS: XI **SUBJECT:** **INFORMATICS PRACTICES (065)**			**Text Book :Informatics Practices by NCERT** **Reference Book: Informatics Practices by Sumita Arora / Preeti Arora**			
MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**Unit Test-(1/2/3) Term I & II**
JUNE	**Introduction to Computer System**	TH (10)	1. Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices. 2. Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns. 3. Software: purpose and types – system and application software, generic and specific purpose software. **ACTIVITY –1** - Prepare a Report for hardware and software frequently used in school, office and labs.	Explain and use of various computer hardware and software	Students will be able to Identify the components of computer system.	
JULY	**Introduction to Python SDG(4)**	TH (15) PR(15)	1. Basics of Python programming, Python interpreter - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operators. **2.** precedence of operators, data types, mutable and immutable data types,	1. Explanation about python and its required software's 2. Develop the basic computational skills 3. Explain and use the concept of data types 4. Explanation of control	Students will be able to Create Python programs using different data types and practice programs based on it as well as in control structures.	

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MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**Unit Test-(1/2/3) Term I & II**
			statements, expressions, evaluation and comments, input and output statements, data type conversion, debugging. 3. Control Statements: if-else, for loop. **Suggested Practical:** 1. To find average and grade forgiven marks. 2. To find sale price of an item with given cost and discount (%). 3. To calculate perimeter/circumference and area of shapes such as triangle, rectangle, square and circle. 4. To calculate Simple and Compound interest. 5. To calculate profit-loss for given Cost and Sell Price. 6. To calculate EMI for Amount, Period and Interest. 7. To calculate tax - GST / Income Tax. 8. To find the largest and smallest numbers in a list. 9. To find the third largest/smallest number in a list. 10. To find the sum of squares of the first 100 natural numbers. 11. To print the first 'n' multiples of	structures in python Students learn to write programs using python based on operators, calculations and based on control structures.	Students will be able to write programs based on operators, calculations and control structures.	

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MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**Unit Test-(1/2/3) Term I & II**
			given number. **ACTIVITY-1(LAB)** Practical implementation of python programs as per the topics discussed.			
AUGUST	**Introduction to Python**	TH(20) PR(20)	1. Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions. 2. Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions. **Suggested Practical:** 12. To count the number of vowels in user entered string. 13. To print the words starting with a alphabet in a user entered string. 14. To print number of occurrences of a given alphabet in each string. 15. Create a dictionary to store names of states and their capitals. 16. Create a dictionary of students to store names and marks obtained in 5 subjects. 17. To print the highest and lowest values in the dictionary.	1. Explanation of List and its built-in functions 2. Explanation of Dictionary and its built-in functions. Students learn to write programs based on List, Dictionary and using their predefined functions..	Create Python programs using lists, dictionaries by using their built-in functions. Students will be able to write programs using list, Dictionary and their predefined functions..	**UT-1** **Introduction to Computer System and Basics of Python Programming Language**

CLASS: XI **SUBJECT:** **INFORMATICS PRACTICES (065)**			**Text Book :Informatics Practices by NCERT** **Reference Book: Informatics Practices by Sumita Arora / Preeti Arora**			
MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**Unit Test-(1/2/3) Term I & II**
			ACTIVITY – 1 (LAB) Program based on List and Dictionary			
SEPTEMBER	**Revision**		**Doubts Clearance on important topics specially related with Python program implementation**			**TERM-1 EXAM Introduction to Computer System,Introduction to Python Programming Language**
OCTOBER	**Database concepts and the Structured Query Language**	TH (10) PR (10)	1. Database Concepts: Introduction to database concepts and its need, Database Management System. 2. Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key 3. Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types **ACTIVITY-1 (LAB)** Students will write queries and practice use of different SQL statements	1. Explain and use of Database, DBMS, Tables 2. Explanation about writing queries in different SQL statements	Students will be able to Understand database concepts and Relational Database Management Systems.	
NOVEMBER	**Database concepts and the Structured Query**	TH (10) PR (10)	1. Structured Query Language: introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique,	1. Explain and use of MySQL data types, SQL commands 2. Implementation of functions in the table data	Students will be able to Retrieve and manipulate data in RDBMS using Structured Query Language.	**UT-2** **Database concepts and the Structured**

CLASS: XI SUBJECT: INFORMATICS PRACTICES (065)			Text Book :Informatics Practices by NCERT Reference Book: Informatics Practices by Sumita Arora / Preeti Arora			
MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**Unit Test-(1/2/3) Term I & II**
	Language continued…		primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, 2. insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command. **Suggested Practical:** 18. To create a database 19. To create student table with the student id, class, section, gender, name, dob, and marks as attributes where the student id is the primary key. 20. To insert the details of at least 10 students in the above table. 21. To display the entire content of table. 22. To display Rno, Name and Marks of those students who are scoring marks more than 50. 23. To display Rno, Name, DOB of those students who are born between '2005-	Students learn to create databases, table and write queries using SQL statements.	Students will be able to create databases, table and write queries using SQL statements.	**Query Language**

CLASS: XI **SUBJECT:** **INFORMATICS PRACTICES (065)**			**Text Book :Informatics Practices by NCERT** **Reference Book: Informatics Practices by Sumita Arora / Preeti Arora**			
MONTH	**CHAPTER**	**No. of Periods**	**TOPICS**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**Unit Test-(1/2/3) Term I & II**
			01-01' and '2005-12-31'. **ACTIVITY-1 (LAB)** Students will write queries and find output based on table given.			
DECEMBER	**Introduction to the Emerging Trends**	TH (10)	1. Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics. 2. Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology. **ACTIVITY – 1** Students will be asked to prepare List of AI based devices and apps used in our day to day life	1. Explanation of AI, ML, BIG data, IOT , IOE 2. Introduction and explanation of cloud computing and their types	Students will be able to Identify the Emerging trends in the fields of Information Technology.	
JANUARY	**REVISION**					**UT-3** **Introduction to Emerging Trends**
FEBRUARY	**ANNUAL EXAM- Complete Syllabus**					

SURENDRANATH CENTENARY SCHOOL, RANCHI
ANNUAL PLAN (2026-2027)

CLASS: XI **SUBJECT: ECONOMICS**					**BOOKS : NCERT TEXTBOOK ,SANDEEP GARG** **(Blue Print)**	
MONTH	**CHAPTER**	**No. of Periods**	**LEARNING OBJECTIVES**	**LEARNING OUTCOMES**	**TOPICS**	**UT/PTM/TERMINAL**
JUNE	CH- **Introduction of microeconomics** **Consumer's equilibrium**	5 10	➢ Identify the central problems of an economy. ➢ How to maximize satisfaction by making choice out of scarce resources. ➢ Differentiate between micro and macro economics. ➢ Determine the composition of goods by using PPF. Define utility. ➢ Explain the condition of equilibrium. ➢ Compare between cardinal and ordinal utility approach. ➢ Determine consumer's equilibrium by indifference curve analysis.	● Differentiate between economics and economy. ● Analyse the interdependence between micro and macroeconomics. ● Discuss the role of production possibility frontier to determine the different combination of goods to be produced. ● Evaluate marginal rate of transformation to find out rate of sacrificing one good in order to obtain another good. ● Differentiate between Cardinal and ordinal utility approach. ● Discuss how the consumers arrive at. Equilibrium in case of single commodity and 2 commodities. ● Derive indifference curve. ● Analyse the relationship between budget line and indifference curve.	● Meaning of micro economics ,macroeconomics, positive and normative economics. Central problems of an economy :what, how and for whom to produce. concepts of production possibility curve and opportunity cost. ● Meaning of utility ,marginal utility ,law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis. ● Indifference curve analysis, consumer's budget ,conditions for Consumer's equilibrium. ACTIVITY1 **<u>Subject Enrichment:</u>** Pictorial presentation of central problems of economy. ACTIVITY --2 **<u>Art Integrated:</u>** Role play by students. **Skills:** Creative Thinking ACTIVITY-3 **<u>Subject Enrichment:</u>** PPT making by students to explain utility analysis.	

JULY	CH- **Introduction of Statistics.** **Collection and Organization of data** **Theory of Demand**	6 10 6	➢ Gain understanding about what economics is about. ➢ Compare between economic and non economic activities ➢ Appreciate the purpose of data collection. ➢ Compare between primary and secondary data. ➢ Familiarize themselves with various methods of collection of data. ➢ Identify the technique of sampling. ➢ Define law of demand. ➢ Explain the reason behind negative relationship between price and demand. ➢ How the behavior of consumers will vary for different types of goods. ➢ Relate the cases where law of demand does not hold true.	● Differentiate between economics as a science and as an art. ● Discuss the functions of statistics in economic, planning and industrial sectors. In Economics. ● Criticize the limitations of statistics and its uses. ● List different types of collection of data. Discuss their benefits and drawbacks. ● Selection of proper source for particular investigation. ● Analyse the benefit of sampling method over census method. ● Determine the relationship between price and quantity. ● Present the relationship diagrammatically. ● Use formulae to solve numerical .	● What is Economics? Meaning , scope, functions and importance of statistics in economics. ● Sources of data, collection of data by sampling ,methods of collecting data, some sources of secondary data, Census of India and NSSO. ● Meaning and Types of variables; Frequency distribution ● Demand ,Market demand ,determinants of demand ,movement along and shifts in the demand curve. **Group discussion**- 'For all the commodities law of demand does not hold true.' ACTIVITY-1 Students will be divided into teams and will be given products to sell .some students will act as buyers .Now the teacher will observe who is selling more products and how the demand will change due to various factors .students at the end have to analyze the situations. Skill :Creativity and Critical thinking ART INTEGRATED LEARNING:PPT will be prepared by the students to show demand function ,factors affecting it and elasticity of demand.	UT 1 20.7.2026
AUGUST	CH- **Elasticity of Demand**	6	➢ Form the concept of elasticity of demand. ➢ Explain different types of elasticity of demand.	● Analyse the need for calculating elasticity of demand. ● Identify the types of commodities depending upon their elasticity.	● Price elasticity of demand, factors affecting price elasticity of demand, measurement of price elasticity, percentage change method, total expenditure method. ● Meaning of production function ,short run, long run,	UT 2 12.10.2026

	Production function **SDG:(12) Responsible consumption and production** **Presentation of data**	7 7	➢ Calculate price elasticity of demand by using formulae. and comment on that. ➢ Familiarize with the idea of production function. ➢ Compare between short term and long run production function. ➢ List different types of production function in terms of returns to factor. ➢ Elaborate the need for tabular and pictorial presentation of data. ➢ Present the data in form of table. ➢ Draw suitable diagrams and graphs to represent a given set of data.	● Solve numerical problem using formulae. ● List different types of elasticity. ● Determine the behavior of the producer at different periods of time. ● Relate the law variable proportion with various returns to factor. ● Determine graphical relationship between TPP and MP. ● Solve numerical problems. ● Draw suitable diagrams and graphs to represent a given set of data. ● Present the data in form of tables. ● Appreciate the need for tabular and pictorial presentation of a given set of data.	● TP, AP ,MP, Returns to factor. ● Tabular presentation, and diagrammatic presentation, Geometric forms, Frequency diagrams, Arithmetic line graphs. **Subject Enrichment:** **Activity1:C**ase study based quiz on production function. **Activity 2:**Collect raw data and form table in A 4 size paper. **Art integrated learning**:students will either reuse any good or produce some thing out of waste by keeping cost minimization in mind.It will lead to sustainable production and consumption.	
SEPTEMBER	REVISION **Measures of central tendency**	7 10	➢ Represent a whole set of data by a single number. ➢ Identify different types of averages. ➢ Calculate different types of averages. ➢ Draw meaning conclusions from a given set of information.	● Analyze the objectives and functions of averages. ● Calculate mean median mode. ● Find out combined mean ,missing frequencies. ● Discuss the merit demerits of mean median and mode.	● Revision ● TERM 1 EXAM. ● TERM 1 EXAM ● Arithmetic mean ● Median . **Group discussion**- ‘Importance of median in our daily lives’ ACTIVITY-1	TERM 1

OCTOBER	CH- **Measures of central tendency** **Cost**	12 2	➢ Use median and mode in different situations. ➢ Develop an understanding of the most suitable average in a given situation. ➢ Define cost from the point of view of producers. ➢ Compare between short run and long run cost function. ➢ Explain average cost and marginal cost.	● Analyze the need for suitable measure of central tendency. ● Use the formulae for all the three types of series. List different types of cost. Discuss the relationship between law of variable proportion and shapes of cost curves.	● PUJA VACATION ● Meaning of production function ,short run, long run, ● Median ● Mode ● Cost:Short run costs-Total cost,Total variable cost;Average cost Average fixed cost,average variable cost . ACTIVITY - 1 **Subject Enrichment:** Fun activity with pack of cards to teach them mean ,median,mode.	
NOVEMBER	**Cost** **Revenue** **Producer's equilibrium** **supply**	6 5 5 6	➢ Relate between the short run cost curves ➢ Solve numerical ➢ Define revenue. ➢ Explain the relation ship between revenue concepts. ➢ Solve practicals ➢ Elaborate the concept of profit. ➢ Determine producer's equilibrium with the help of MR MC approach. ➢ Define supply ➢ Explain the factors affecting it. ➢ Understand Price elasticity of supply. ➢ List different types of supply elasticity. ➢ Relate time period and supply.	● Differentiate between variable cost and fixed costs. ● Understand the relation between production functions and cost curves. ● Calculate revenue. ● Diagrammatically present the revenue curves. ● Analyze the nature of revenue curves in different forms of market. ● List factors which are affecting individual as well as market supply. ● Explain their effects. ● Analyze the behavior of producer at different time periods. ● Solve numerical.	● Cost;Meaning of marginal cost and their relationships ● Revenue-Total,Average and Marginal Revenue-meaning and their relationship ● Producer's equilibrium-meaning and its condition in terms of marginal revenue marginal cost. ● Supply, market supply, determinants of supply ,supply curve and its slope, movement along and shifts in supply curve. Elasticity of supply and its measurements. ACTIVITY - 1 Word puzzle for supply and demand will be given to the students.	

DECEMBER	**Measures of dispersion** **Correlation** **Index number**	7 7 6	➢ Understand and appreciate the need to measure dispersion. ➢ Calculate and compare various measures of dispersion. ➢ Familiarize with the concept of correlation. ➢ Calculate correlation through different method. ➢ Define the term index number. ➢ Calculate index no . ➢ Appreciate its usefulness. ➢ Identify and explain its limitations.	● List various measures of dispersion. ● Differentiate between absolute and relative measures of dispersion. ● Find correlation between between variables. ● Will present diagrammatically with the help of scatter diagrams. ● Calculate correlation by using Spearman's Rank correlation or Karl Pearson's method. ● Measure relative changes in prices over different period of time. ● Use index number in finding inflation or change in standard of living.	● Meaning and properties, scatter diagram, Measures of correlation Karl Pearson's method, Spearman's rank correlation ● Index number ;meaning, types-wholesale price index, consumer price index ,index of industrial production ● ,Uses of index numbers ,inflation and index number ,numerical problems. ● WINTER VACATION ACTIVITY-1 Worksheet will be given to solve.	UT-3 14.12.2026
JANUARY	**Index Number** **Main market forms** **Price determination and simple application** SDG:(16) **Peace justice and strong institution.**	4 4 7	➢ Define the term market. ➢ Explain the features of perfectly competitive market. ➢ Elaborate the demand supply mechanism of perfect competition. ➢ Determine market equilibrium	● Role of index number in realizing the need for increase in salary or wages. ● List the features which makes a market perfectly competitive. ● Differentiate between perfect competition and pure competition. ● Determine the demand curve under perfect competition. ● Apply their knowledge in practical situation ● Analyze the need of price floor and price ceiling.	● Perfect competition-Features,, ● Determination of market equilibrium and effects of shifts in demand and supply ● Simple applications of demand and supply, price ceiling and price floor. ● Revision ACTIVITY - 1 **<u>EXPERIENTIAL LEARNING:</u>** Market survey by the students to understand the mechanism of perfectly competitive market and find its benefits and drawbacks. Moreover effect of covid 19 on demand supply of any market will be analyzed by the students.	PTM January

			under perfect competition. ➢ Effects of changes in demand supply on equilibrium. ➢ Simple applications of tools of demand and supply.	● Analyze the changes in demand and supply in different situation.		
FEBRUARY	REVISION		➢		REVISION FINAL EXAM.	FINAL EXAM

SURENDRANATH CENTENARY SCHOOL, RANCHI
ANNUAL PEDAGOGICAL PLAN (2026–27)
Class: XI
Data Science (844)

Book: CBSE Data Science Student Handbook

MONTH	CHAPTER	No. of Periods	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/PT/T1
June	Employability Skills	6	Methods of Communication, Writing Skills	Develop communication skills	Identify communication types	
July	Ethics in Data Science	8	Data Ecosystem, Ethics, Governance	Understand ethical use of data	Explain ethical concerns	Unit Test
August	Assessing Data	8	Data types, collection, cleaning	Understand data quality	Evaluate datasets	
September	Revision	4	Full revision	Strengthen concepts	Apply learning	Term I Exam
October	Forecasting on Data	6	Trends, forecasting	Understand predictions	Identify trends	
November	Randomization	6	Sampling, bias	Understand randomness	Apply sampling	
December	Introduction to R	6	R basics, visualization	Learn programming	Execute basic code	
January	Revision	4	Full syllabus	Exam preparation	Confidence building	
February	Final Exam	2	Complete syllabus	Final evaluation	Demonstrate learning	Annual Exam

SURENDRANATHCENTENARYSCHOOL SESSION -2026-27

ANNUAL PLAN CLASS -XI

Book-An Introduction to Indian art, NCERT

Subject-Painting (049)

MONTH	CHAPTER	No. of periods	TOPICS	LEARNING OBJECTIVE	LEARNING OUTCOME
JUNE 26	L-1	2	ARTan Introduction	➢ Introduction ➢ Six Limbs of Indian Paintings (Sha dang) ➢ Element of Art ➢ Charact eristic ofthe Colour ➢ Principles of Art.	➢ Students can grow knowledge about Fine Art(Pain ting) ➢ About Six Limbsof ancient Arts measurement. ➢ Learner cangain knowledge principaltheory of Art collaboratewith Math's
JULY 26	L-1	2	Pre-HistoricRockPaintings	➢ Introduction ➢ Periodof Rock Paintings ➢ Indian Rock Painting ➢ Subject matter and Description	LearnerscanKnow about ➢ What isthe Pre-Historic Rock Painting? ➢ First Discoveryin India ➢ Development andReasonsfor suchPainting ➢ Periodand techniqueofRock Paintings ➢ Sometimes learnerscanalsobe taken on educational tourstosee near Prehistoric Caves Paintings.
AUGUST '26	L-2	2	ArtofIndusvalley	➢ Introduction ➢ Features ofIndus valley civilization ➢ Artform Location Subject Matter Description	➢ Grow knowledge about Indus valley civilization culture and first city civilization plan. ➢ Formof Art: Seal spotter sculpture, gold jewelry , terracottafigure esetc. ➢ Two major sites of this civilization Harappa and Mohenjo-Daro showcase excellent tow n planning ➢ Collaborate with Art Inte grated Project
SEPT.'26	L-3	2	Buddhist JainandHindu Art	➢ Introduction ➢ Artefacts of The Mauryan Period ➢ Lion capital from Sarnath ➢ Design and significance	➢ Learner will know aboutthebeginning of new religiousandsocial movements in the Gangetic valley in theformofBuddhism and JainisminMauryanPeriod. ➢ Sarnath Lion Capital, AshokChakra these are Our National symbols ➢ Stupaetc.

				➢ The Shunga Period ➢ Kushan Period ➢ Gupta Period	➢ Collaborate with History
NOV'26	L-5	2	IndianTemplesculpture	➢ Introduction ➢ Basic form of Hindu Temple. ➢ Classificationof Indian Temple ➢ Description ➢ Subject ➢ matter	➢ Learn aboutAncientTemple Architecturalstudy. ➢ Comparative Studyof South and northwe will able to knowin which Stylethe temple building Swereconstrusted
DEC'26	L-6	2	IndianBronzes	➢ Introduction ➢ South Indian Bronzes. ➢ Subject Matter ➢ Description.	➢ Knowabout Indian Bronzes statue Chola and Pallav Period. ➢ Lost wax technique ➢ Natrajand umadevi Bronzes statue.
JAN'27	L-7	2	Artistic Aspects of the Indo -Islamic Architecture.	➢ Introduction ➢ Character misticoIndo-Islamic Architecture ➢ Subject Matter ➢ Description	➢ Learn about Indo- Islami Architecture is the Architecture of the Indian sb continent produce by and for Islamic Patron and purposes. ➢ Cate gorieson the basisof style ➢ Stud ents will be able to stud y Ind- Isla mic Architecture ➢ Art and it's beauty in group
FEB'27	Revision		Revision	➢ Revision	➢ Final Term

SURENDRANATH CENTENARY SCHOOL

Sub - Yoga (Theory & Practical)

SESSION 2026-2027, ANNUAL PEDAGOGICAL PLAN, Class - XI

Month	Chapter	No. of Period	Topics	LEARNING OBJECTIVE	LEARNING OUTCOME
April 2026	1.1 1.2 1.3	3	• SHATKARMA MEANING, PURPOSE and THEIR SIGNIFICANCE IN YOGA SADHNA • INTRODUCTION OF PRANAYAM AND DHYANA AND THEIR HEALTH BENEFITS	• MEANING and PURPOSE and • SIGNIFICANCE, BENEFITS • PRECAUTIONS, TECHNIQUE	• STUDENT'S CAN GROW KNOWLEDGE and PRACTICE • ANALYZE THE MAIN TOPIC
May 2026	2.1 2.2	2	• CONCEPT OF AAHARA (DIET) ACCORDING TO YOGIC TEXT • EFFECT OF MITAHARA (YOGIC DIET) • SIGNIFICANCE OF HATH YOGA PRACTICE IN HEALTH PROMOTION	• BALANCED DIET • IMPROVES RESPIRATORY SYSTEM, DIGESTIVE • CLEAR AND SHINY SKIN • FLEXIBILITY OF THE JOINTS	• LEARNERS WILL BE ABLE TO PRACTICE • PROPER KNOWLEDGE TECHNIQUE
June 2026	2.3	1	• CONCEPT OF MENTAL HEALTH • WELL BEING ACCORDING TO PATANJALI YOGA	• IMPORTANCE OF CONTROLLING MIND	• YOGA SUTRAS HIGHLIGHT • THE CAPABILITY OF YOGA TO MENTAL HEALTH
July 2026	2.4 2.5	2	• YOGIC PRACTICE PATANJALI YOGA • CONCEPTHEALTHY LIVING IN GITA	• YAMAS, NIYA MAS, ASANAS PRANAYAM, PRATYAHRA, DHARANA DHYANA, SAMADHI • BHAKTI YOG, KARMA YOG JNANA YOG	• YOGA MEANS EQUANIMITY • YOGA I SKILL IN ACTION • DEDICATING THE DIVINE QUALITIES
August 2026	2.6	1	• IMPORTANCE OF SUBJECTIVE EXPERIENCE IN DAILY YOGA PRACTICE	• LIFE PRACTICE,PHYSICAL HEALTH, MENTALHEALTH, SOCIAL HEALTH • SPIRITUAL HEALTH	• PROPER PRACTICE HEALTH
September 2026	3.1	1	INTRODUCTION TO FIRST AIP AND CPR	THE PRIMARY AIM OF FIRST AID IS TO MINIMIZE PAIN	MINIMIZE THE PAIN AND SAVE LIVES
October 2026	3.2	1	YOGIC MANAGEMENT OF STRESS AND ITS CONSEQUENCES	CONCEPT OF STRESS	WHEN A PERSON FACES PROBLEMS IN HIS EVERY DAY LIFE
Nov 2026	3.3	1	YOGA IN PREVENTION OF COMMON DISEASE	CAUSES, GENETICS MEDICAL AND PSYCHIATRIC ILLNESS	FITNESS AND FRESHNESS
Dec 2026	3.4	1	YOGA AND PERSONALITY DEVELOPMENT	PERSONALITY DEVELOPMENT THROUGH YOGA	YOGA IS CONSIDERED ASAN EFFECTIVE TOOL FOR DEVELOPMENT OF PERSONALITY OF CHILDREN
Jan 2027			PRACTICAL DEMONSTRATION AND PRACTICAL SKILLS	PRACTICE	PERFORMANCE
Feb 2027			REVISION	REVISION	FINAL TERM

SURENDRANATH CENTENARY SCHOOL, RANCHI
ANNUAL PEDAGOGICAL PLAN (2026–27)
Class: XI
Web Applications (803)

Book: CBSE Web Applications Curriculum

MONTH	CHAPTER	No. of Periods	TOPICS	LEARNING OBJECTIVES	LEARNING OUTCOMES	UT/PT/T1
June	Employability Skills	6	Methods of Communication, Writing Skills	Develop communication skills	Apply communication effectively	
July	Basics of Networking	8	Networking, devices, types, security	Understand networking concepts	Identify network components	Unit Test
August	HTML & CSS (Part 1)	8	HTML basics, tags, lists, tables	Learn webpage creation	Create simple webpages	
September	Revision	4	Networking + HTML	Strengthen concepts	Apply learning	Term I Exam
October	HTML & CSS (Part 2)	6	Forms, multimedia, CSS	Enhance web design skills	Design styled webpages	
November	GIMP	6	Image editing, tools, layers	Learn graphic design	Create designs	
December	JavaScript	6	Basics, variables, loops	Understand programming	Write JS programs	
January	Revision	4	Full syllabus	Prepare for exams	Confidence building	
February	Final Exam	2	Complete syllabus	Final evaluation	Demonstrate learning	Annual Exam

SURENDRANATH CENTENARY SCHOOL, RANCHI						
ANNUAL PEDAGOGICAL PLAN (2026-27)						
Class: XI **Subject:-Physical Education (048)**			**BOOKS** **Physical Health Education** **LAB MANUAL (Blue Print)**			
Month	Chapters	No. of Periods	Learning objective	Learning outcome	Topics	UT/ PT/ T -1
Jun	Changing trends & Career in Physical education	12	1. To make them understand about Amin and objectives of Physical Education 2. To make them understand about Career Options in Options in Physical Education. 3. To make them Competitions in Various Sports at National and International Level.	1. Students will study life long nutrition fitness and mental health awareness. 2. Students make careers and occupation in health field and community health. 3. Learn about health classroom lectures, activity and video clip group discussion.	**Week -3** Amis & Objectives of physical education. Changing Trends in sports playing surface, wearable gears & technological. **Week -4** Career option in physical education. Khelo-Indian and Fit India program. **Activity -2** Subject Enrichment; **Activity-2** Art Integrated Skills	
July Aug.	Olympism SDG-3 Good Health and well being.	10	1. To make them understand Olympics, Paralymipics and Special Olymipics 2. To make them understand about Olympic Symbol, Ideals, Objectives and Values of Olympism	1. To develop interest and competence in lifetime participation in games & sports. 2. To develop good body machanics and	**Week-1** Ancient and modern Olympics. Concept and Olympics values. **Week-2** Symbols, motto, flag, Oath and Anthem, Olympic Movement structure- IOC, NOC,	5th Subject UT - 1 13.07.2026 6th Subject UT - 1

			3. To make them understand about International Olympic Committee.	skills in a variety of dynamic forms of movements applied in game and sports. 3. To develop social aim.	IFC, Other members. **Week-3** Meaning& Importance of Yoga, Introduction to Ashtanga Yoga **Week-4** Introduction of yogic kyiyas (Shat Karma)	24.08.2026
Sep	Physical Faintness, health and wellness.	20	1 To make them understand about Meaning and Importance of Physical Fitness, Wellness and Lifestyle. 2. To make them understand about Components of Physical Fitness and Wellness. 3. To make them understand about Components of Health0 Related Fitness.	1. Gain knowledge in general metabolic principles, primarily fuel sources for the working muscle during exercise. 2. Knowledge of Hydration guidelines for safety and performance and know how to evaluable and monior hydration status. 3. Understand the role of nutrition in recovery from injuries.	**Week-1** Meaning and importance wellness. Health and physical Fitness. **Week-2** Components/ Dimensions of wellness **Week-3** Health and physical Fitness. Traditional sports. **Week-4** Regional Games for promoting wellness. **Activity-1** **Subject Enrichment:**	**Half Yearly Exam 17.09.2026 to 30.09.2026**
Oct	Yoga and Lifestyle SDG-3 Good	14	1. To make them understand about Definitions of Test, Measurement and	1. Student will learn how to take Friends test SAI Khelo of india	Week -1 Concept of test, Measurement & Evaluation in physical	5th Subject UT - 2 05.10.2026

	Health and well being		Evaluation. 2. To make them understand about Inportance of Tes, Measurement and Evaluation in Sports. 3. To make them understand about Calculation of BMI and Waist-Hip Ratio.	Fitness test in school. 2. Students will learn how to compting basal metabolic rate (BMR). 3. Student will learn how to take BMI, Flamingo Balance, Plate taping test.	education sports. Week-2 Clasification of test in physical education sports. Week-3 Test administration guidelines in physical Education and sports .	
Nov	Fundaments als of Anatormy , Physiology in sorts	20	1. To make them understand about Defination and importance of Anatomy,Physiology and Kinesiology . 2. To make them understand about Function of skeletal System, classification of bones and Types of joints.	1.Student will learn how to take Friends test_ SAI Khelo India Fitness test in school. 2. Students will learn how to computing Basal metabolic rate (BMR)	Week -1 Definition & Importance of Anatomy & Physiology in exercise and sports. Week-2 Function of skeletal system, classification of bone and types of joints. Week-3 Defination & Importance of Anatomy & Physiology in exercise and sports. Week-4 Function and structure of Respiratory system.	6th Subject UT - 2 23.11.2026
Dec	Fundaments als of Kinesiolog y and	18	1. To make them understand about Properties and Function of Muscles	1. Student will learn how to use the Newton's law of motion & its	Week -1 Defination and Importance of Kinesiology and	5th Subject UT - 3 07.12.2026

	Biomechanics in sports.		2. To make them understand about Struture and Function of Respiratory System and Circulatory system . 3. To make them understand about Equillibrium – Dynamic and Static and Centre of Gravity and its Application in sports	application in sports. 2. Students will learn how to use to the Dynamic & static and centre of gravity. 3. Students will learn how to use the Friction and projectile in sports.	Biomechanics in sports. Week-2 Principal of Biomechanics Week-3 Types of Body Movement- Flexion, Extension, Abduction, Rotation, Circumduction, Supination & Pronation Week-4 Axis and Planes- Concept and its application in body movements.	
Jan	Phychology & Sports	20	1. To make them understand about Defination and Importance of Phychology in Physical Education and Sports. 2. To make them understand about Define and Differentiate Between Growth and Development. 3. To make them understand about Developmental Characteristics at Different Stages of Development.	1. Understand the role of the brain in human performance and apply psychological techniques and theories of human performance. 2. Demonstrate effective written and oral skills in various apply health, physical activity. 3. Develop and apply health, physical and	Week-1 Definition & Importance of Psychology in Physical Education & Sports. Week-2 Adolescent Problem & Their Management Week- 3 Team Cohesion and sports	

				psychological principles as they related to human performance.		
Feb	Training and Doping in Sports	16	1. To make them understand about Meaning and Concept of Sports Training. 2. To make them understand about Principles of Sports Training .	1. Provide Facility and preceptor mentorship to produce graduates who are future leader's and outstanding clinicians. 2. Contribute to the athletic training profession though the scholarship and leadership of the faculty, staff and students.	Week-1 Concept and Priciples of sports Training Week-2 Training Load: Over Load, Adaptation and Recovery Week-3 Concept of Doping and its disadvantages.	6th Subject UT - 3 01.02.2027 Annual Exam Mid Feb. 2027 Onwards