CURRICULUM CLASS

XI

2022-2023

SUBJECT- ENGLISH

Objective: To lead the learners to substantiate an understanding of the connection between writing and thinking and demonstrate effectiveness in using verbal and non verbal language appropriate to the goal.

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

- To develop academic skills.

- To enhance the students' knowledge of subject content.

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

- Form an appreciation for all genres of literature.

	July (24 days)	
PROJECTED CONTEN	**METHODOLOGY**	**LEARNING OUTCOMES**
The Portrait of a Lady [Hornbill]	The session would begin with an interactive session wherein the learners would interpret the title of the lesson. The background knowledge of the author and his works would be given. The facilitator would develop the chain of events, with TEXT sequence or discourse/spoken with reference to the educational and personal domains. Difficult words and terms would be discussed. The prose will be explained. All possible questions and answers would be discussed and	They would develop their optimistic attitude towards life amidst many struggles. Will be able to develop an attitude to become more independent in thought and action, responsible and cooperative, understanding and tolerance, improved working relations respect for identities in relation to other people.

	assigned. Enriching Vocabulary: veritable bedlam of chirruping, frivolous rebukes, serenity, seclusion with resignation, sagging skins of dilapidated drum.	
Poetry: A Photograph [Hornbill]	Pre-reading activity would be the first step wherein the students would delve deep into the title of the poem and make an interpretation of the title as it indicates the subject and theme.(student-teacher interaction) They would compare the previous lesson The Portrait of a Lady with the title of the poem. The background of the poet would be discussed. The poem would be read aloud with proper intonation rhyme and rhythm. Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem. The poem would be explained covering the phrases, sentences and discourse as well as their structuring. Silent reading of the poem by the students within five minutes and listing the difficult terms. The figures of speech and rhyme scheme	the students would be able to grasp the theme and meaning of the poem. They would be able to read the poem with proper tone and rhyme and develop an interest in poetry. Their vocabulary would be strengthened. They would be able to draw a comparative study between human life and nature. They would be able to study a photograph

	would be discussed. WORD JOURNEY: paddling, transient, perennial, labored ease, wry, snapshot.	
	AUGUST-(23 DAYS)	
The Summer of the Beautiful White Horse [Snapshots]	The session would begin with an interactive phase wherein the learners would interpret the title of the story. The background of the author would be given. The story would be read aloud. The theme and underlying meaning would be discussed. Difficult words would be listed and explained. The moral of the story would be discussed. Vocabulary Enrichment: magnificence, wealthiest, pious, stillness, humor, irrigation ditches, crazy streak, enormous, capricious, vagrant.	The learners would be able to apply the literal, interpretative and critical level in analyzing a short story. They would be able to determine the tone of a short story. They would be able to comprehend the irony hidden in the story.
GRAMMAR: Determiners.	The session would be started with an audio-visual song of determiners. Quiz on determiners would be conducted. The learners would be asked to arrive at the rules. (Inductive method) The purpose and functions of the different types of determiners would be discussed with examples	The learners would be able to identify determiners and use them appropriately The comprehending skills would be improved. Sentence construction skills would be strengthened.
WRITING	Warm up session:	Students will be able

SKILLS: **Notice Writing**	Learners would share their knowledge on the importance of a notice(Student-Teacher interaction) The Learners would be asked to speak about a notice they received and they remember still. The teacher would explain what a notice is and its purpose. The standard format of notice writing would be shown in the class. The teacher would discuss in detail what a notice should contain. The wide range of themes and objectives covered by notice would be discussed with examples Special note on- 5 W's What Where When Who Whom	to analyze any NOTICE shown to them on the basis of the knowledge imparted. They will be able to frame notice about any event. They will be able to identify important information in any given notice. Students will be able to use appropriate style and format to write a NOTICE effectively.
We're Not Afraid to Die **[Hornbill]**	The session would start with an interactive session wherein the students would interpret the titles of the lessons. The background of the author would be given. The theme and story line would be explained	The learners would be able to enhance their problem solving skills. They would be able to inculcate the values of determination and will power. Their Reading skills would be developed.
The Address **[Snapshots]**	The teacher would develop the format in sequence or discourse spoken with reference to the ethical/global and personal domains.	The learners would be able to enhance their problem solving skills. They would be able to inculcate the values of determination and will power.

	Vocabulary Enrichment: Honing the seafaring skills, pinpricks in the vast ocean, ominous silence, a tousled head. Forensic reconstruction, scudded across, casket grey, resurrection, funerary treasures, circumvented, computed tomography, eerie detail.	Their Reading skills would be developed.
WRITING SKILLS: Article Writing	The session would start with a pre-writing activity to create an interest towards writing. The teacher would define what an article is and discuss the purpose of article writing. The different styles, subjects, purpose of article writing would be discussed. The teacher would explain the technique of accumulating ideas, focusing on ideas and facts, planning, organizing, evaluating, structuring and editing. They would be taught the importance and way of producing a finished piece of work with examples. The requirements of the content, beginning, body and end would be focused.	The students would develop an interest towards writing. Their planning and organizing techniques would be enhanced. They would be able to research on any subject and derive information from facts and present him in the form of a written piece. Their creative writing would be analyzed. The interpreting and evaluative skills would be strengthened.
GRAMMAR: Clauses	The teacher would start with the warm up session asking the	The students would be able to identify clauses and phrases

	students to frame sentences highlighting the difference between the subject and the predicate. The definitions of a phrase and clause would be given with examples. The difference between a phrase and a clause would be established. The dependent and independent clauses and phrases would be explained. Power Point presentations explaining phrases and clauses would be displayed.	and establish the difference between the two. -the creative skills would be enhanced. - Students would develop team spirit and learn the art of coordination and cooperation.
READING SKILLS: **Note Making**	In the beginning of the session, a text would be provided to the students to read and involve in note making to test previous knowledge. The facilitator would train the students to read a text minutely, or listen carefully to select, analyze and summarize the main points. Ways of making notes would be discussed: Annotation, outline notes, column notes, mind maps and summary notes.	The learners would be able to differentiate between annotation, outline notes, column notes, mind maps and summary notes from a text. They would be able to use the note taking suggestions to develop good notes based on classroom discussions.
	Sept-(25 DAYS)	
Discovering Tut [Hornbill]	Pre- reading Activity: The session would start with an interaction on the ways you think we could help prevent the extinction of	The students would be able to grasp the theme and meaning of the prose. Their critical and creative thinking skills

	languages and dialects. The title of the prose would be open for class interpretation. The facilitator would develop the format of text in sequence or discourse (spoken with reference to the ethical/global, public and personal domains of social and personal life.	would be enhanced. They would be able to derive the moral values. They will be ready to accept the reality of life. Their vocabulary would be enriched. They would enhance their writing skills.
Ranga's Marriage [Snapshots]	The session would begin with an interactive stage wherein the students would discuss on 'the on the role of English in a man's life' on basis of the theme of the story.	The students would be able to effectively provide a synopsis of the story. They will be able to analyze the values and thought process of the story. Positive values and attitudes would be inculcated in the students. They would be able to appreciate the language, content and style of the prose. Vocabulary would be enriched. Their Listening skills would be enhanced.
WRITING SKILLS **Report Writing** **Letter to the Editor**	The format, rules, technique would be discussed with examples. The usage of language would be taught and students would be assigned written tasks.	The learners would be able to organize their thoughts and express freely. They would develop an interest towards writing thus enhancing their writing skills. Their thinking skills would be enhanced.
GRAMMAR: **Sentence Reordering**	The session would begin with few sentences read out by the teacher and written on the interactive board.	They will be able to participate in the class discussion actively. They will be able to identify errors and frame grammatically

	(Brain boosters) The teacher would wait for the students' responses to know whether they are able to point the errors. The teacher discusses the errors and comes to the rules. (inductive Learning)	correct sentences.
	OCTOBER-(17 DAYS)	
Poem-The laburnum Top	The teacher will start the poem by telling the students about importance of nature. How to seek pleasure from nature and its bounty. Then the poem will be read aloud and line to line explanation will be given.	The students will be able to 1.know about the poet and his contribution. 2.Understand various sound words mentioned in the poem 3.Enjoy the beauty of nature.
POETRY: The Voice of the Rain [Hornbill]	The teacher would play a snippet of the he sound of rain and the learners would infer ideas and involve in an interactive session. The title of the poem would be open for class interpretation. The knowledge background of the poet would be given. The poem would be read aloud with proper stress and intonation. The teacher would discuss the theme, poetic devices and structure and rhyme. Word Journey.	The students would be able to grasp the theme and meaning of the poem. They would be able to read the poem with proper tone and rhyme and develop an interest in poetry. Their vocabulary would be strengthened. They would be able to draw a comparative study between human life and nature.
Albert Einstein at School [Snapshots]	The teacher shows a video clipping and asks students to recognize and name	The students would be able to express their understanding through discussions.

	the personality seen in the clipping. The teacher introduces Albert Einstein and opens the title for class interaction. The prose would be read aloud and discussed. Vocabulary Enrichment.	They would skim and scan the words according to their meaning. They would enhance their reading as well as writing skills.
Recapitulation of Integrated Grammar and Writing Skills		
	TERM-II	
	NOVEMBER(24)	
The Ailing Planet-The Green Movement's Role [Hornbill]	The session would begin with a video clipping showing the plight of our planet. The title of the lesson would be related to the video by the students in the class interaction phase. The background knowledge of the author would be given. The prose would be explained. Difficult words would be listed and explained. The moral of the story would be discussed.	The Learners would be able to sensitize themselves towards the earth and environment. They would inculcate the values of Leadership and contribute to make our Earth green.
Mother's Day [Snapshots]	The session would begin with an interaction on my mother's daily lessons. The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and	The learners would be able to develop their basic skills of language. They would develop their reading skills and listening skills They would be able to comprehend the role of a mother and inculcate values of respect and obedience.

	discussed.	
Poster Making	The teacher will acquire and display several different posters from various sources. Some examples may include: Movie posters, Community events, Advertisements Campaign signs, Billboard pictures, Full-page newspaper ads. Learners will brainstorm the purpose of posters. (Student- Teacher Interaction) Some responses may include: To get people's attention To get people to do something To give people information. The teacher would discuss and demonstrate the presentation stage, consolidation stage and the closing stage.	Comprehend an effective Poster making as a tool of Visual Communication. Focus on the message to be delivered. Keep the sequence well ordered. Use graphs and images effectively. Plan and organize a poster presentation. Use spacing, margins, colors, and layout to maximize effectiveness and list information about their invention.
	December(25 DAYS)	
The Browning Version [Hornbill]	The session would start with an interaction on the title of the lesson. The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed. The synopsis would be	The learners will be able to stimulate language development and increase the students' ability to write spontaneously. They would be able to respond to a personal dilemma. Their vocabulary would be enriched. The analytical skills would be enhanced.

	shown with the help of a PPT.	
Childhood [Hornbill]	The session would start with an interaction on the title of the lesson. The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed. The synopsis would be shown with the help of a PPT.	The learners will be able to stimulate language development and increase the students' ability to write spontaneously. They would be able to respond to a personal dilemma. Their vocabulary would be enriched. The analytical skills would be enhanced.
	January(18 DAYS)	
Father to Son [Hornbill]	The session would start with an interaction on interpreting the title of the prose and the poem. The title of the topic would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed. The synopsis would be shown with the help of a PPT.	To facilitate making connections between similar situations in different storylines/life experiences. To help learners distinguish different perspectives; analyzing them; drawing conclusion/s. The learners would unfold their logical thinking skills.
Birth [Snapshots]	The session would start with an interaction on interpreting the title of the prose and the poem. The title of the topic would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed	To facilitate making connections between similar situations in different storylines/life experiences. To help learners distinguish different perspectives; analyzing them; drawing conclusion/s. The learners would unfold their logical

	out and discussed. The synopsis would be shown with the help of a PPT.	thinking skills.
GRAMMAR **Active/Passive Voice**	Warm-up: The teacher writes two sentences on the board: 1. People speak Japanese in Japan. 2. Shakespeare wrote Romeo and Juliet. The students are asked to present another way to say the two sentences. The rules are derived (Inductive Method) The session would continue with a play delivering dialogues wherein the	The students would be able to identify and comprehend the use of active and passive voice. They would be able to convert active voice into passive and passive to active. The analyzing skills would be improved. They would be able to express themselves and deliver information in a grammatically and mechanically correct form.
	FEBRUARY(22 DAYS)	
Silk Road(Prose)	The Chapter will start with discussion on Importance of Travelling. After discussion line to line explanation will be given. The Chapter will be read aloud difficult word meanings will be dictated.	The students would be able to grasp the theme and meaning of the Chapter. The students will be able to understand that positiive thinking changes the expected results.
MARCH(24 DAYS)		
	REVISION FOR SUMMATIVE ASSESSMENT II	

SUBJECT- PHYSICS

Objectives:

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

MAY (16 DAYS)		
Chapter	**Methodology**	**Learning outcome**
Unit-1 : physical world and measurement Unit-2 : kinematics	Lecture method/interactive/demonstration	● Would able to understan scope of physics, nature physics laws and observe relation of physics to society ● Would able to understan necessity of measureme units , systems of unit. ● Would able to determine dimension of physical quantity and analyse dimension and its application. ● Would able to distinguish between accuracy and precession of measuring instrument. ● Would able to understan the error and distinguish between error and mistal and analyse combination error. ● Understand the meaning significant figures and ab to do mathematical operation with significant figure.

		● Would able to draw position-time and velocity time graph and able to understand their significance. ● Would able to understan elementary concepts of differentiation and integration for disturbing motion. ● Would able to understan the difference between uniform and non uniform motion. ● Would able to determine instantenous and averag speed and acceleration. ● Would able to derive relations for uniformly accelerated motion. ● Would able to develop problem solving skills on these concept/topics.
JULY(24 DAYS)		
Chapter	**Methodology**	**Learning outcome**
Unit-1 : physical world and measurement Unit-2 : kinematics	Lecture method/interactive/demonstration	● Would able to understan scope of physics, nature physics laws and observ relation of physics to society ● Would able to understan necessity of measureme units , systems of unit. ● Would able to determine dimension of physical quantity and analyse dimension and its application. ● Would able to distinguish between accuracy and

		precession of measuring instrument. ● Would able to understan the error and distinguish between error and mistal and analyse combination error. ● Understand the meaning significant figures and ab to do mathematical operation with significant figure. ● Would able to draw position-time and velocity time graph and able to understand their significance. ● Would able to understan elementary concepts of differentiation and integration for disturbing motion. ● Would able to understan the difference between uniform and non uniform motion. ● Would able to determine instantenous and averag speed and acceleration. ● Would able to derive relations for uniformly accelerated motion. ● Would able to develop problem solving skills on these concept/topics.
AUGUST(23 DAYS)		
Chapter	**Methodology**	**Learning outcome**
Unit-4 : work energy and power Unit -5 :	Lecture/interactive/PPT	● Would able to determine the work done by constant/variable force. ● Would able to distinguish between

system of particle and rotation motion		kinetic and potential energy and derive the work-energy theorm. ● Would able to distinguish between energy and power. ● Would able to derive the potential energy stored in spring. ● Would able to distinguish between conservative and non conservative forces. ● Would able to understand and interpret motion in vertical circle. ● Would able to understand different kinds of collsion in one/two dimensions. ● Would able to develop problem solving skills on these concept/topi ● Would able to understand the cente of mass of two particle system, momentum conservation, center of mass motion, center of mass of rigi body and center of mass of uniform rod. ● Would able to understand the conc of torque and angular momentum a able to establish relation between them. ● Would able to understand equilibriu of rigid bodies, equation of rotationa motion. ● Would able to understand the mom of inertia and its significance and determine moment of inertia of rigid body of different shape. ● Able to state thermo of parallel/perpendicular axes. ● Would able to compare between rotational and translation motion

SEPTEMBER(25 DAYS)

Chapter	**Methodology**	**Learning outcome**
Unit-6 : gravitation	Lecture/interactive/demonstration	

Revision for first term		● Would able to state newton law of gravitation and kepl laws of planetry motion. ● Would able to understand acceleration due to gravity and its variation with attitude/depth. ● Would able to distinguish between gravitational potential energy and gravitational potential. ● Would able to determine th expression for escape velocity , orbital velocity, ti period of satellite. ● Would able to understand geostationary satellite and their application. ● Would able to develop problem solving skills on these concept/topics.
OCTOBER (17 DAYS)		
Chapter	**Methodology**	**Learning outcome**
Unit-6 : gravitation Revision for first term	Lecture/interactive/demonstration	● Would able to state newton law of gravitation and kepl laws of planetry motion. ● Would able to understand acceleration due to gravity and its variation with attitude/depth. ● Would able to distinguish between gravitational potential energy and gravitational potential. ● Would able to determine th expression for escape velocity , orbital velocity, ti period of satellite. ● Would able to understand

		geostationary satellite and their application. ● Would able to develop problem solving skills on these concept/topics.
NOVEMBER(24 DAYS)		
Chapter	**Methodology**	**Learning outcome**
Unit-7 : properties of buk matters Unit- 8 : thermo dynamics	Lecture/interactive/PPT/methodology	● Would able to understand the thermal expansion of solid, liquid and gases, anomalous expansion of water. ● Would able to define spec heat capacity, C_P and C_V. ● Would able to understand the principle of claorimeter and latent heat capacity. ● Would able to understand the transfer of heat though conduction, convention an radiation. ● Woulds able to understand the concept of black body, wien displacement law and stefans law and green hou effect. ● Would able to develop problem solving skills on these concept/topics. ● Would able to understand the concept of thermal equilibrium and define zer law of thermodyanmics. ● Would able to distinguish between the heat, wave a initernal energy. ● Would able to state first la of thermo dynamics, secon law of thermo dynamics a understand their significan ● Would able to distinguish

		between the isothermal ar adiabatic process, reversib and irreversible process. ● Would able to understand the working of heat engine and refrigeration.
DECEMBER (25 DAYS)		
Chapter	Methodology	Learning outcome
Unit-9 : kinetic theory of gases Unit- 10 : oscillation and waves	Lecture/interactive/PPT/methodology	● Would able to understand equation of perfect gas, assumption of kinetic theory gases. ● Would able to establish the expression for pressure exer on wall of container by gas. ● Would able to understand kinetic interpretation of temperature, rms speed of g ● Would able to define the degree of freedom, law of equipartion of energy and ap it to calculate specific heat o gases. ● Would able to understand th concept of mean free path, Avogadro number. ● Would able to distinguish between the periodic motion oscillatory motion and simple harmonic motion. ● Would able to distinguish between periodic function harmonic function and able t find time period. ● Would able to understand th concept of amplitude, frequency, time period, displacement and phase. ● Would able to understand th oscillations of loaded spring.

		● Would able to determine KE PE AND TE of particle executing ● Would able to derive expression for time period of simple pendulum. ● Would able to distinguish between free, forced, dampe oscillation and resonance. ● Would able to develop proble solving skills on these concept/topics.
JANUARY(18 DAYS)		
Chapter	**Methodology**	**Learning outcome**
Unit-10 : oscillation and waves	**Lecture/interactive/PPT**	● Would able to understand concept wave motion. ● Would able to distinguish between transverse and longitudinal waves. ● Would able to find speed of travelli waves. ● Would able to distinguish between progressive wave and standing wa ● Would able to understand the formation of standing wave in string and organ pipes, fundamental mod and harmonics. ● Would able to understand concept beat and Doppler effect and able to find apparent frequency. ● Would able to develop problem solving skills on these concept/topi
	FEBRUARY(22 DAYS)	
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
Revision Doubt clearing sessions	Test/Assignment/Discussion	

Conduction of practical exams		
	MARCH (24 DAYS)	
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
Annual exams		

SUBJECT- CHEMISTRY

OBJECTIVES:

- Promote understanding of basic facts and concepts of chemistry.
- Make students capable of studying chemistry in academic and professional courses.
- Expose the students to various emerging new areas of chemistry and apprise them with their relevance in future studies.
- Equip students to face various challenges related to health ,nutrition ,environment,population ,weather, industries and agriculture.
- Develop problem solving skills in students.
- Apprise students with the interface of chemistry with other disciplines of science such as Physics, Biology, Engineering Geology and Mathematics.
- Acquaint students with different aspects of chemistry and its use in daily life.
- Develop an interest in students to study chemistry as a discipline.
- Integrate life skills and values in context of chemistry.

TERM I

	MAY(16 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
UNIT Some basic concepts of chemistry TOPIC ● General introduction ● Importance and scope of	Lecture method Interactive approach	Students will be able to ● Understand and appreciate the role of chemistry in different spheres of life ● Explain the characteristics of three States of matter ● Classify different substances into elements compounds and mixtures ● Define SI base units and list some

chemistry ● Atomic and molecular masses ● Mole concept and molar mass ● Percentage composition ● Empirical and molecular formula ● Chemical reactions ● Stoichiometry and calculations based on stoichiometry		commonly used prefixes ● Differentiate between accuracy and precision ● Convert physical quantities from one System units to another ● Explain various laws of chemical combination ● Appreciate significance of atomic mass avera atomic mass molecular mass and formula ma ● Define the term mole and solve numericals o mole concept ● Determine empirical formula and molecular formula for a compound from the given experimental data ● Perform the stoichoimetric ca

	JULY(24 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
UNIT Structure of atom Topic ● Bohr's model and its limitation ● concept of shells and orbitals ● Dual nature of matter and radiation ● de Broglie's relationship ● Heisenberg’s uncertainty principle ● concept of orbitals ● Quantum numbers ● Shapes of s,pand d orbitals ● Rules for filling electrons in atoms based on Pauli's exclusion principle,Aufbau's principle and Hund's rule ● Electronic configuration of atoms	Lecture method Group discussion Power point presentation/ Videos	Students will be able to ● Know about the discovery of electron prot and neutron and their characteristics ● Describe Thomson Rutherford and Bohr's atomic models ● Understand the important features of the quantum mechanical model of atom ● Understand nature of electromagnetic radiation and Planck's Quantum theory ● Explain the photoelectric effect and descri features of atomic spectra ● State the De Broglie relation and Heisenb Uncertainty Principle ● Define atomic orbital in terms of quantum numbers ● StateAufbau's principle, Pauli's exclusion principle and Hund's rule of maximum multiplicity ● Write the electronic configuration

• Stability of half filled and completely filled orbitals UNIT Classification of elements and Periodicity in properties TOPIC • Modern periodic law and the present form of periodic table • periodic trends in properties of elements • Atomic radii • Ionic radii • Electron gain enthalpy • Ionization enthalpy • electronegativity • Valency • Nomenclature of elements with atomic number greater than hundred UNIT Redox reactions TOPIC • Concept of oxidation and reduction • Redox reaction • Oxidation number • Balancing the redox reaction in terms of loss and gain of electrons and change in oxidation number	Lecture method Quiz Learning by doing (Activities) Lecture method Question answer technique	Students will be able to • Appreciate how the concept of grouping elements in accordance to their properties lead to the development of periodic table • Understand the periodic law • Understand the significance of atomic number and electronic configuration as th basis of periodic classification • Name the elements with atomic number greater than hundred according to IUPAC Nomenclature • Classify the elements into s ,p, d and f blocks and learn their main characteristics • Recognise the periodic trends in physical and chemical properties of elements • Use scientific vocabulary appropriately to communicate ideas related to certain important properties of elements for exam atomic radii, ionic radii ,ionization enthalpy electron gain enthalpy, electronegativity a valence of elements Students will be able to • Identify a Redox reaction as a class of reactions in which oxidation and reduction reactions occur simultaneously • Define the terms oxidation reduction oxida and reductant • Explain the mechanism of redox reaction electron transfer process • Use the concept of oxidation number to identify oxidant and reductant in a reactio • Classify the redox reactions into combinat ,decomposition, displacement and disproportionation reaction • Balance chemical equations using oxidati number method and half reaction method

		• Learn the concept of redox reactions in terms of electrode processes

	AUGUST(23 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
UNIT Chemical bonding and molecular structure TOPIC • Valence electrons • Ionic bond covalent bond • Bond parametres • Lewis structures • Polar character of covalent bond • Covalent character of ionic bond • Valence bond theory • Resonance • Geometry of covalent molecules • VSEPR theory • Concept of hybridisation involving s,p,and d orbitals • Shapes of some simple molecules • Molecular orbital theory of homonuclear diatomic molecules • Hydrogen bond	Lecture method Videos 3 D models(Art integrated learning) Group Discussion	Students will be able to • Understand kossel Lewis approach to chemi bonding • Explain the octet rule and its limitations draw Lewis structures of simple molecules • Explain the formation of different types of bonds • Describe the VSEPR theory and predict the geometry of simple molecules • Explain the valence bond approach for the formation of covalent bonds • Predict the directional properties of covalent bonds • Explain the different types of hybridization involving s p and d orbitals and draw shapes simple covalent molecules • Describe the molecular orbital theory of Homonuclear diatomic molecules • Explain the concept of hydrogen bonding
UNIT Organic chemistry Some basic principles and techniques TOPIC • General	Lecture method Concept maps Mind maps	Students will be able to • Understand reasons for tetravalency of carb and shapes of organic molecules • Write structure of organic molecules in vario ways • Classify the organic compounds • Name the compounds according to IUPAC system of nomenclature and also derive thei structures from the given names • Understand the concepts of Organic reaction

introduction ● Classification and IUPAC nomenclature of organic compounds ● Electronic displacement in covalent bond ● Inductive effect ● Electromeric effect ● Resonance and hyperconjugation ● Homolytic and Heterolytic fusion of a covalent bond ● Free radicals ● Carbocations and carbanions ● Electrophile and nucleophiles ● Types of organic reactions	Power point presentation/ Videos	mechanism ● Explain the influence of electronic displacement on structure and reactivity of organic compounds ● Recognise types of organic reactions ● Learn the techniques of purification of organ compounds ● Write the chemical reactions involved in the qualitative analysis of organic compounds ● Understand the principles involved in quantitative analysis of organic compounds

	SEPT(25 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
UNIT Hydrogen TOPIC ● Position of hydrogen in periodic table ● occurrence ● isotopes ● hydrides Ionic,covalent and interstitial ● physical and chemical properties of water ● heavy water ● hydrogen as a fuel	Lecture method Group discussion Peer teaching	Students will be able to ● Present informed opinion on the position of hydrogen in the periodic table ● Identify the modes of occurrence and preparation of dihydrogen on small and commercial scales and describe various isotopes of Hydrogen ● Explain how different elements combine with hydrogen to form ionic ,molecular and non stoichiomertic compounds ● Understand the structure of water and use the knowledge for explaining physical and chemic properties ● Differentiate between hard and soft water and learn about water softening ● Acquire the knowledge about heavy water and its importance ● Understand the structure of hydrogen peroxid

Revision TERM I TERM I Exams		learn its preparation methods and properties leading to manufacture of useful chemical and cleaning of environment ● Understand hydrogen economy

TERM II

	OCT.(17 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
UNIT Hydrocarbon TOPIC ● Classification of hydrocarbons ● Aliphatic hydrocarbons ● Alkanes Nomenclature Isomerism Conformations Physical properties Chemical reactions ● Alkanes Nomenclature Structure of double bond ● Geometrical isomerism ● Physical properties ● Methods of preparation ● Chemical reactions ● Addition of hydrogen, halogen,water ,hydrogen halide, Markovnikov's addition ,peroxide effect ,ozonolysis oxidation ● Mechanism of electrophilic addition ● Alkynes Nomenclatures Structure of triple bond ● Physical properties ● Methods of preparation ● Chemical reactions	Lecture method Interactive approach Concept maps 3 D models	Students will be able to ● Name hydrocarbons according to IUPAC system of nomenclature ● Recognise and write structures of isomers of alkanes ,alkenes, alkyne and aromatic hydrocarbon ● Learn about various methods of preparation of hydrocarbons ● Distinguish between alkanes alkene alkynes and aromatic Hydrocarbons on the basis of physical and chemic properties ● Draw and differentiate between various conformations of Ethane ● Appreciate the role of Hydrocarbons as a source of energy and for other industrial applications ● Predict the formation of addition products of unsymmetrical alkene a alkynes on the basis of mechanism ● Comprehend the structure of benze explain aromaticity and understand mechanism of electrophilic substitut reactions of benzene ● Predict the directive influence of substituents in monosubstituted benzene ring ● Learn about carcinogenicity

• Acidic character of alkynes • Addition reaction of hydrogen ,halogens, hydrogen halide and water • Aromatic hydrocarbons • Introduction and IUPAC nomenclature • Benzene • Resonance • Aromaticity • Chemical properties • Mechanism of electrophilic substitution • Nitration ,Sulphonation,Halogenation, Friedel Craft alkylation and acylation • Directive influence of functional group in mono substituted benzene • Carcinogenicity and toxicity		

	NOVEMBER(24 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
UNIT States of matter TOPIC • Three states of matter • Intermolecular interaction • Types of bonding • Melting and boiling points • Role of gas laws in elucidating the concept of the molecule • Boyle's law, Charles law,Gay lussac law ,Avogadro's law	Lecture method Group discussion Experiential learning	Students will be able to • Explain the existence of different states of matter in terms of balanc between intermolecular forces and thermal energy of particles • Explain the laws governing behavi of ideal gases • Apply gas laws in various real life situations • Explain the behaviour of real gase • Describe the conditions required fo liquefaction of gases • Differentiate between gaseous sta and vapours • Explain properties of liquids in term of intermolecular interactions Students will be able to

• Ideal behaviour • Empirical derivation of gas equation of a ideal gas equation and deviation from ideal behaviour UNIT Chemical thermodynamics TOPIC • Concept of systems and types of systems • Surroundings • Work • Heat • Energy • Extensive and intensive properties • State functions • First law of thermodynamics • Internal energy and enthalpy • Measurement of change in internal energy and change in enthalpy • Hess's law of constant heat summation • Enthalpy of bond dissociation, combustion, formation, atomisation, sublimation, phase transition, ionisation, solution and dilution • Second law of thermodynamics	Lecture method Problem solving approach to enhance numerical ability Interaction technique	• Explain the term system and surroundings • Differentiate between open closed and isolated systems • Explain internal energy work and heat • State first law of Thermodynamics and Express its mathematical formulation • Explain state functions like interna energy and enthalpy • Correlate between change in inter energy and change in enthalpy • Measure experimentally internal energy change and enthalpy chan • Calculate enthalpy change for various type of reactions • State and apply Hess's law of constant heat summation • Differentiate between extensive ar intensive variables • Define spontaneous and nonspontaneous processes • Explain entropy is a thermodynam state function and applied for spontaneity of a process • Explain Gibbs energy

• Introduction of entropy as a state function • Gibb's energy change for spontaneous and nonspontaneous processes • Third law of thermodynamics		

	DECEMBER (26 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES

UNIT Equilibrium TOPIC ● Equilibrium in physical and chemical processes ● Dynamic nature of equilibrium ● law of mass action ● law of chemical equilibrium ● Equilibrium constant ● Factors effecting equilibrium nature ● Le chatlier's principle ● Ionic equilibrium ● Ionisation of acid and bases ● Strong and weak electrolytes ● Degree of ionisation of a poly basic acid ● Acidic strength ● Concept of pH ● Buffer solution ● Solubility product, and common ion effect	Lecture method Focus on conceptual learning Focus on enhancing numerical solving ability	Students will be able to ● Identify the dynamic nature of equilibrium involved in physical an chemical processes ● State Law of equilibrium ● Explain characteristics of equilibriu involved in physical and chemical processes ● Write expression for equilibrium constant ● Establish the relationship between equilibrium constant Kp and Kc ● Explain various factors that affect t equilibrium state of a reaction ● Classify substances acids and bas according to arrhenius bronsted lo and Lewis concept ● Classify acid and bases as weak o strong in terms of the ionization constant ● Describe pH scale in expressing concentration of hydrogen ions ● Explain ionization of water ● Understand solubility product and ionic product ● Appreciate the importance of common Ion effect in qualitative analysis ● Appreciate the uses of buffer solutions Students will be able to ● Describe the general characteristic of alkali metals and their compoun ● Explain the general characteristics alkaline earth metals and their compounds ● Describe the manufacture properti and uses of industrially important Sodium and Calcium compounds including cement ● Appreciate the biological significan of Sodium Potassium magnesium and

UNIT S Block elements TOPIC ● Group 1 and group 2 elements ● General introduction ● Electronic configuration ● Occurrence ● Anomalous property of the first element of each group ● Diagonal relationships ● Trends in the variation of properties such as ionisation enthalpy,atomic radii ● Trends in chemical reactivity with oxygen water hydrogen and halogens ● Uses	Lecture method Peer teaching Question answer approach	

	JANUARY(18 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
UNIT P block elements TOPIC ● General introduction to p block elements ● Group 13 elements ● General introduction ● Electronic configuration ● Occurrence ● Variation of properties ● Oxidation states trends in chemical reactivity ● Anomalous properties of first element of the group boron ● Physical and chemical properties ● Group 14 elements ● General introduction ● Electronic configuration ● Occurrence ● FVariation of properties ● Oxidation states ● Trends in chemical reactivity ● Anomalous behaviour of the elements carbon ● Catenation hello traffic forms ● Physical and chemical properties	Lecture method Question and answer method Concept maps	Students will be able to ● Appreciate the general trends in th chemistry of p block elements ● Describe the trends in physical an chemical properties of group 13 ar 14 elements ● Explain anamolous behaviour of Boron and carbon ● Describe allotropic forms of carbor ● Know the chemistry of some important compounds of Boron ,carbon and silicon ● Describe uses of group 13 and 14 elements and their compounds

	FEBRUARY(22 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
Revision Doubt clearing sessions Conduction of practical exams	Test/Assignment/Discussion	

	MARCH (24 DAYS)	
UNIT/TOPIC	METHODOLOGY	LEARNING OUTCOMES
Annual exams		

Note:

1 Practicals will be conducted in both the terms in online/offline mode.

2 Guidelines for Investigatory project will also be given .

SUBJECT- BIOLOGY

LEARNING OBJECTIVES-

1- Define basic biological concepts and processes.
2- Describe levels of the organization and related functions in plants and animals.
3- Describe the intricate relationship between various cellular structures and their corresponding functions.
4- Demonstrate critical thinking skills.

MAY (16 DAYS)		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
1. The living world	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Students will understand the basis of classification and its applications
2. Biological Classification	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Basis of classification and its various attributes.

JULY (24 DAYS)		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
3-Plant kingdom	● Demonstration and Lecture method	• Structure of various lower plants, their evolution with respect to modern day

	● Pupil centered method (inside the class)	plants
4-Animal Kingdom	● Demonstration and Lecture method ● Pupil centered method (inside the class)	• Contrasting features of various phylum and their comparative study.
5- Morphology of flowering plants	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Learning of various parts of a plant and their importance and modifications
AUGUST (24 DAYS)		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
7- Structural organization in Animals	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Various types of tissues and their role
8- Cell, the unit of life	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Learning of various cell organelles and their roles

SEPTEMBER (25 DAYS)

CHAPTER	METHODOLOGY	LEARNING OUTCOMES
9- Biomolecules	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Learning of all the important components of cell
10- Cell cycle and cell division	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Importance of various phases of cell division.
Term II **OCTOBER (17 DAYS)**		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
13- Photosynthesis in higher plants	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Concept of photosynthesis and its applications
14- Cellular Respiration	● Demonstration and Lecture method ● Pupil centered method (inside the class)	The students will be able to understand the ● Learning of respiration and its uses in various attributes.
15- Plant Growth and Development	● Demonstration and Lecture method ● Pupil centered method (inside the	● Role of plant hormones and its applications

	class)	
NOVEMBER (24 DAYS)		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
17-Breathing and Exchange of Gases.	● Demonstration and Lecture method ● Pupil centered method (inside the class)	The students will be able to understand- ● Mechanism of breathing.
18- Body Fluids and Circulation	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Various mechanisms of circulation will be studied.
DECEMBER (26 DAYS)		
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
19- Excretory Products and Their Elimination	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Concept of functioning of the kidney will be studied
20-Locomotion and Movement	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Study of the human skeletal system and its disorders associated with it.
21-Neural Control and	● Demonstration and Lecture	● Learning of various parts of the brain and its coordination with various parts of the body.

Coordination	method ● Pupil centered method (inside the class)	
JANUARY (18 DAYS)		
	● Practice and revision	
CHAPTER	**METHODOLOGY**	**LEARNING OUTCOMES**
22-Chemical Coordination and Integration	● Demonstration and Lecture method ● Pupil centered method (inside the class)	● Action of various hormones and their impact on body
FEBRUARY(22 DAYS)		
Revision Doubt clearing sessions Conduction of practical exams	ANNUAL EXAMS	
MARCH(24 DAYS)		
	ANNUALEXAMS	

SUBJECT: MATHEMATICS(041)

Objectives :

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

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

JULY(No. of working days:23)		
Chapter	**Methodology**	**Learning Outcomes**
UNIT – 1 Chapter 1 Sets	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Sets and their representations, Em set Finite and Infinito sets, Equal s Subsets, Subsets of a set of real numbers especially intervals (with notations) Power set Universal set Venn diagrams Union and Intersec of sets Difference of sets Comple
UNIT-1 Chapter 2 Relations and Functions	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Ordered pairs. Cartesian product o sets. Number of elements in the Cartesian product of two finite sets Cartesian product of the set of rea with itself (upto R x R x R). Definiti relation pictorial diagrams, domain domain and range of a relation. Function as a special type of relati Pictonal representation of a functio domain, co-domain and range of a function. Real valued functions, domain and range of these functio constant, identity, polynomial, ratio modulus, signum exponential,
UNIT-1 Chapter 3 Trigonometric Functions	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Positive and negative angles. Measuring angles in radians and i degrees and conversion from one measure to another. Definition of trigonometric functions with the he unit circle. Truth of the identity sin2 cos2x = 1, for all x. Signs of trigonometric functions. Domain ar range of trigonometric functions ar their graphs. Expressing sin (x ± y cos (x ± y) in terms of sinx, siny. co & cosy and their simple application Deducing identities like the followi tan(x ± y) = tan x ± tan y/(1 ∓ tanxtany), cot (x + y) = cotxcoty ∓1/(coty ±cotx) sina±sinb= 2sin1 (a± b)cos1 (a∓b) 2 2 cosa + cosb = 2cos1 (a + b)cos1 b)

AUGUST No. of working days:23		
Chapter	**Methodology**	**Learning Outcomes**
UNIT – 2 Chapter 4 Principle Of Mathematical Induction	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Process of the proof by Induction, motivating the application of the metho looking at natural numbers as the leas inductive subset of real numbers. The principle of mathematical induction an simple applications.
UNIT- 2 Chapter 5 Complex Numbers and Quadratic equations	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to so some of the quardratic equations. Algebraic properties of complex numb Argand plane and polar representation complex numbers Statement of Fundamental Theorem of Algebra, sol of quadratic equations (with real coefficients) in the complex number

SEPTEMBER (NO. OF WORKING DAYS 25)		
Chapter	**Methodology**	**Learning Outcomes**
UNIT – 2 Chapter 6 Linear Inequalities	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Linear inequalities: Algebraic soluti of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities in two variables. Graphical method of finding a solut of system of linear inequalities in tw
UNIT- 2 Chapter 7 Permutaions and combinations	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Fundamental principle of counting. Factorial n. (n!) Permutations and combinations, derivation of Formulae for nPr, and nCr, a their connections, simple applications.

OCTOBER No. of working days: 17		
Chapter	**Methodology**	**Learning Outcomes**
UNIT – 2 Chapter 7 Binomial Theorem	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Historical perspective, statement a proof of the binomial theorem for positive integral indices Pascal's triangle, General and middle term i binomial expansion, simple applica

UNIT- 2 Chapter 8 Sequence and Series	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Sequence and Series. Arithmetic Progression (AP) Arithmetic Mean (AM) Geometric Progression (GP), general term of a GP sum of n term a G.P. infinite G.P and its sum, geometric mean (GM), relation between A.M. and G.M. Formulae f the following special sums : $\Sigma \quad \Sigma \quad 2 \quad \Sigma \quad 3 \quad =1 \quad =1$

Month: NOVEMBER No. of working days: 24

Chapter	Methodology	Learning Outcomes
UNIT – 3 Chapter 9 Straight Lines	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Brief recall of two dimensional geom from earlier classes. Shifting of origi Slope of a line and angle between tw lines Various forms of equations of a parallel to axis, point-slope form, slo intercept form, two-point form, interc form and normal form. General equa of a line Equation of family of lines passing through the point of intersec
UNIT- 3 Chapter 10 Conic Sections	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straig line and a pair of intersecting lines a degenerated case of a conic section Standard equations and simple prop of parabola, ellipse and hyperbola Standard equation of a circle.

Month: DECEMBER No. of working days:26

Chapter	Methodology	Learning Outcomes
UNIT – 3 Chapter 11 Introduction to three-dimensional geometry	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Coordinate axes and coordinate pla three dimensions. Coordinates of a Distance between two points and se formula
UNIT- 4 Chapter 12 Limits and Derivatives	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Derivative introduced as rate of cha as that of distance function and geometrically, butive sdea of imit. Li polynomials and rational functions trigonometric, exponential and koga functions. Definition of derivative rel scope of tangent of the curve, deriva sum, difference, product and quotie functions. Derivatives of polynomial
UNIT- 5 Chapter 13 Mathematical Reasoning	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Mathematically acceptable statemer Connocting words/ phrases consolic understanding of "if and only if (nece and sufficient) condition", "implies". "implied by", "and", "or" "there exists their use through variety of example to real life and Atathematics. Validat statements involving the connecting difference among contradiction, con

Month: JANUARY **No. of working days: 18**

Chapter	Methodology	Learning Outcomes
UNIT – 6 Chapter 14 Statistics	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Measures of Dispersion: Range. Mo deviation, variance and standard de ungrouped/grouped data. Analysis c frequency distributions with equal m different variances.
UNIT- 6 Chapter 15 Probability	Chalk-blackboard method Link previous knowledge with new concepts Vidoes	Random experiments; outcomes, sa spaces (set representation). Events, occurrence o events, not, and and o exhaustive events, mutually exclusiv events, Axiomatic (se theoretic) prob connections with other theories of ea classes. Probability of an event prob 'not', 'and' and 'or' events

Subject: Accountancy

Objectives

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

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

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

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

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

6. To enable students with accounting for Not-for-Profit organizations, accounting for Partnership Firms and company accounts

May

To acquaint students with basic accounting concepts and accounting standards.

Chapter	Methodology	Learning
Part-A Unit-1: Theoretical Framework	Mind Maps & Story telling	**After going through this Unit, the students will be able to:** • describe the meaning, significance, objectives, advantages and limitations of accounting in the modem economic environment with varied types of business and non-business economic entities. • identify / recognise the individual(s) and entities that use accounting information for serving their needs of decision making. • explain the various terms used in accounting and differentiate between different related terms like current and non-current, capital and revenue. • give examples of terms like business transaction, liabilities, assets, expenditure and purchases. • explain that sales/purchases include both cash and credit sales/purchases relating to the accounting year. • differentiate among income, profits and gains. • state the meaning of fundamental accounting assumptions and their relevance in accounting. • describe the meaning of accounting assumptions and the situation in which an assumption is applied during the accounting process. • explain the meaning and objectives of accounting standards. • appreciate that various accounting standards developed nationally and globally are in practice for bringing parity in the accounting treatment of different items. • acknowledge the fact that recording of accounting transactions follows double entry system. • explain the bases of recording accounting transaction and to appreciate that accrual basis is a better basis for depicting the correct financial position of an enterprise. • Understand the need of IFRS • Explain the meaning, objective and

		characteristic of GST.

July & August & October

Chapter	Methodology	Learning
Part-A Unit-2: Accounting Process	Mind Maps, Story Telling & Role play	**After going through this Unit, the students will be able to**: • explain the concept of accounting equation and appreciate that every transaction affect either both the sides of the equation or a positive effect on one item and a negative effect on another item on the same side of accounting equation. • explain the effect of a transaction (increase or decrease) on the assets, liabilities, capital, revenue and expenses. • appreciate that on the basis of source documents, accounting vouchers are prepared for recording transaction in the books of accounts. • develop the understanding of recording of transactions in journal and the skill of calculating GST. • explain the purpose of maintaining a Cash Book and develop the skill of preparing the format of different types of cash books and the method of recording cash transactions in Cash book. • describe the method of recording transactions other than cash transactions as per their nature in different subsidiary books . • appreciate that at times bank balance as indicated by cash book is different from the bank balance as shown by the pass book / bank statement and to reconcile both the balances, bank reconciliation statement is prepared. • develop understanding of preparing bank reconciliation statement. • appreciate that for ascertaining the

		position of individual accounts, transactions are posted from subsidiary books and journal proper into the concerned accounts in the ledger and develop the skill of ledger posting. • explain the necessity of providing depreciation and develop the skill of using different methods for computing depreciation. • understand the accounting treatment of providing depreciation directly to the concerned asset account or by creating provision for depreciation account. • appreciate the method of asset disposal through the concerned asset account or by preparing asset disposal account. • appreciate the need for creating reserves and also making provisions for events which may belong to the current year but may happen in next year. • appreciate the difference between reserve and reserve fund. • acquire the knowledge of using bills of exchange and promissory notes for financing business transactions; • understand the meaning and distinctive features of these instruments and develop the skills of their preparation. • state the meaning of different terms used in bills of exchange and their implication in accounting. • explain the method of recording of bill transactions. • state the need and objectives of preparing trial balance and develop the skill of preparing trial balance. • appreciate that errors may be committed during the process of accounting. • understand the meaning of different types of errors and their effect on trial balance. • develop the skill of identification

		and location of errors and their rectification and preparation of suspense account.

September: Revision of 1st Term examination

October: Project work

November

Chapter	Methodology	Learning
Part-B Unit 3: Financial Statements of Sole Proprietorship	Mind maps Story telling Role Play	**After going through this Unit, the students will be able to:** • state the meaning of financial statements the • purpose of preparing financial statements. • state the meaning of gross profit, operating profit and net profit and develop the skill of preparing trading and profit and loss account. • explain the need for preparing balance sheet. • understand the technique of grouping and marshalling of assets and liabilities. • appreciate that there may be certain items other than those shown in trial balance which may need adjustments while preparing financial statements. • develop the understanding and skill to do adjustments for items and their presentation in financial statements like depreciation, closing stock, provisions, abnormal loss etc. • develop the skill of preparation of trading and profit and loss account and balance sheet. • state the meaning of incomplete records and their uses and limitations. • develop the understanding and skill of computation of profit / loss using the statement of affairs method.

December

Chapter	Methodology	Learning
Part-B Unit 4: Computers in Accounting	Mind maps	**After going through this Unit, the students will be able to:** • state the meaning of a computer, describe its components, capabilities and limitations. • state the meaning of accounting information system • appreciate the need for use of computers in accounting for preparing accounting reports. • develop the understanding of comparing the manual and computerized accounting process and appreciate the advantages and limitations of automation. • understand the different kinds of accounting software.

Revision of syllabus along with practice of DAV Sample Papers

Subject: Business Studies

Objectives

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

Subject: Business Studies

Learning Objectives

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May

Chapter	Methodology	Learning
Part-A Unit-1 Evolution and Fundamentals of Business	Mind Maps, storytelling, Case studies & Role Play	**After going through this Unit, the students will be able to:** •To acquaint the History of Trade and Commerce in India •Understand the meaning of business with special reference to economic and non-economic activities. • Discuss the characteristics of business. • Understand the concept of business, profession and employment. • Differentiate between business, profession and employment • Appreciate the economic and social objectives of business. • Examine the role of profit in business • Understand the broad categories of business activities-

		industry and commerce • Describe the various types of industries. • Discuss the meaning of commerce, trade and auxiliaries to trade. • Discuss the meaning of different types of trade and auxiliaries to trade. • Examine the role of commerce trade and auxiliaries to trade • Understand the concept of risk as a special characteristic of business. • Examine the nature and causes of business risks.

July

Unit-2 Forms of Business organizations	Mind Maps, storytelling, Case studies & Role Play	• List the different forms of business organizations and understand their meaning. • Identify and explain the concept, merits and limitations of Sole Proprietorship • Identify and explain the concept, merits and limitations of a Partnership firm. • Understand the types of partnership based on duration and on the basis of liability. • State the need for registration of a partnership firm. • Discuss types of partners –active, sleeping, secret, nominal and partner by estoppel • Understand the concept of Hindu Undivided Family Business • Identify and explain the concept, merits and limitations of Cooperative Societies. • Understand the concept of consumers, producers, marketing, farmers, credit and housing cooperatives. • Identify and explain the concept, merits and limitations of private and public companies.

		• Understand the meaning of one person company. • Distinguish between a private company and a public company • Highlight the stages in the formation of a company. • Discuss the important documents used in the various stages in the formation of a company. • Distinguish between the various forms of business organizations. • Explain the factors that influence the choice of a suitable form of business organization.
Part-A Unit-3- Public, Private and Global Enterprises	Mind Maps, storytelling & Role Play	**After going through this Unit, the students will be able to:** • Develop an understanding of Public sector and private sector enterprises • Identify and explain the features, merits and limitations of different forms of public sector enterprises • Develop an understanding of Global Enterprises, joint ventures and public private partnership by studying their meaning and features.

August

Unit 4: Business Services	Mind Maps, storytelling & Role Play	• Understand the meaning and types of business services. • Discuss the meaning and types of Business service Banking • Develop an understanding of difference types of bank account • Develop an understanding of the different services provided by banks • Recall the concept of insurance • Understand Utmost Good Faith, Insurable Interest, Indemnity, Contribution, Doctrine of Subrogation and Causa Proxima as principles of insurance • Discuss the meaning of different types of insurance-life, health, fire, marine insurance.

		• Understand the utility of different telecom services
Part-A Unit 5: Emerging Modes of Business	Mind Maps, storytelling & Role Play	**After going through this Unit, the students will be able to:** • Give the meaning of e-business. • Discuss the scope of e-business. • Appreciate the benefits of e-business • Distinguish e-business from traditional business. • Understand the concept of outsourcing. • Examine the scope of outsourcing, appreciate the need of outsourcing. • Discuss the meaning of Business Process Outsourcing and Knowledge Process Outsourcing

September: Revision for 1st term

October

Chapter	Methodology	Learning
Unit 6: Social Responsibility of Business and Business Ethics	Mind Maps & Role Play	• State the concept of social responsibility. • Examine the case for social responsibility • Identify the social responsibility towards different interest groups. • Appreciate the role of business in environment protection • State the concept of business ethics. • Describe the elements of business ethics

Instructions regarding project work and preparation of the same

November

Chapter	Methodology	Learning
Part-B Unit 7: Sources of Business Finance	Mind Maps, storytelling & Role-play	**After going through this Unit, the students will be able to:** • State the meaning, nature and importance of business finance • Classify the various sources of

		funds into owners' funds. • State the meaning of owners' funds. • Understand the meaning of Global Depository receipts, American Depository Receipts and International Depository Receipts • State the meaning of borrowed funds. • Discuss the concept of debentures, bonds, loans from financial institutions and commercial banks, Trade credit and inter corporate deposits. • Distinguish between owners' funds and borrowed funds
Unit 8: Small Business and Enterprises	Mind Maps, storytelling & Role-play	• Understand the concept of Entrepreneurship Development (ED), Intellectual Property Rights • Understand the meaning of small business • Discuss the role of small business in India • Appreciate the various Government schemes and agencies for development of small scale industries. NSIC and DIC with special reference to rural, backward area.

December

Chapter	Methodology	Learning
Part-B Unit 9: Internal Trade	Mind Maps, storytelling	**After going through this Unit, the students will be able to:** • State the meaning and types of internal trade. • Appreciate the services of wholesalers and retailers • Explain the different types of retail trade • Highlight the distinctive features of departmental stores, chain stores and mail order business. • Understand the concept of GST
Unit 10: International Trade	Mind Maps, storytelling	• Understand the concept of international trade.

		• Describe the scope of international trade to the nation and business firms • State the meaning and objectives of export trade. • Explain the important steps involved in executing export trade • State the meaning and objectives of import trade. • Discuss the important steps involved in executing import trade • Develop an understanding of the various documents used in international trade. • Identify the specimen of the various documents used in international trade. • Highlight the importance of the documents needed in connection with international trade transactions • State the meaning of World Trade Organization. • Discuss the objectives of World Trade Organization in promoting international trade

Revision of Syllabus and practice of DAV sample papers

SUBJECT- ECONOMICS

Objectives:

- Understanding of the most basic economic concepts and development of economic reasoning which the learners can apply in the day to day life as citizens, workers and consumers.
- Realisation of learners' role in nation building and sensitivity to the economic issues that the nation is facing today.
- Equipment with basic tools of economics and statistics to analyse economic issues This is pertinent for even those who may not pursue this course beyond senior secondary stage.
- Development of understanding that there can be more than one view on any economic issue and necessary skills to argue logically and with reasoning.

TERM I

MONTH: MAY,2022 **NO OF WORKING DAYS:16**

TOPIC	METHODOLOGY	LEARNING OUTCOMES
INTRODUCTION: STATISTICS-Meaning and scope of statistics.	Taking examples explain what The subject matter of economics is all about. To make students understand how economics is linked with the study of economic activities in consumption production and distribution. Discuss in class how knowledge of statistics can help in describing consumption production and distribution. Taking in examples and relating it to how some uses of statistics helps in the understanding of economic activities. Explaining the meaning and purpose of data collection,by taking examples, Distinguishing	Enables the students to understand relationship between economics and statis They will be able to establish the importan statistics in economic activities. Students can relate the statistics with process of consumption, production and distribution. They will be able to chalk out how statisti related to economics , business plan ,economic planning etc. Students will be able to understand purpose of collection of the data. They will be able to give examples differentiate between primary and secon data. Students will understand how to collect

COLLECTION OF DATA	between primary and secondary sources of data. To discuss the mode of collection of data and hence differentiate between sample and census surveys. Discussing the various techniques of sampling	data for statistical study. They will be able to know the technique sampling. Chalk out the important sources of secon data.

MONTH:JULY,2022 **NO OF WORKING DAYS:24**

TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
CLASSIFICATION OF DATA	Explaining the difference between quantitative and qualitative classification. Preparing a frequency distribution table by showing on black board . Numerical examples will be taken to get students familiar with the method of tally making, discrete ,continuous series,cumulative series. Taking numerical egs the difference between univariate and bivariate frequency distribution will be explained.	Enable the students to differentiate betw quantitative and qualitative classification. The students will be able to constru frequency distribution table. Enable to differentiate between discrete continuous series. Enable They will also be able to construct bivariate and univariate frequency distrib table
PRESENTATION OF DATA TABULATION, DIAGRAMMATIC GRAPHIC PRESENTATION	A flowchart of various different types of presentations will be explained. The example of tables will be taken and the eg will be discussed in the class on the blackboard. The flowchart of different types of diagrams used in statistical analysis will be discussed Examples of each	Enable the students to chalk out various t of presentations They will be able to draw tables Differentiate between different types diagrams. Enable them to construct graphs. .

	diagram presentation will be taken on the blackboard and the students will be asked to draw the diagram accordingly	
MEASURE OF CENTRAL TENDENCY	Explaining the students need for one single number summarising the whole set of data Taking examples and explaining how to recognise and distinguish between different types of Averages. Explain to the students how meaningful conclusions can be drawn from a set of data. Various numerical examples will be taken to explain how to calculate Average in different types of series.	Understand the meaning of averages. Students will be able to explain how a s number represents the whole set of data. Enable the students to find out aver numerically in different types of series. They will be able to differentiate betv different types of averages. Enable the students to explain propertie AM With the help of examples.

MONTH:AUGUST,2022 **NO OF WORKING DAYS:23**

TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
MEDIAN AND MODE	Explaining the concept of partition values by taking examples. Taking a numerical example concept of Median will be explained. Methodology of calculating Median will be explained in different types of series. Definition of Mode will be taken up by taking examples of real life	Enable the students to understand the cor of partition values and its relevanc statistics. Enable the students to do numericals Median and Mode.

	situations. Taking numerical examples, the method of calculating Mode will be explained. Explain locating median and mode diagrammatically By drawing on black board.	Locate median and mode diagrammaticall
MICRO ECONOMICS CENTRAL PROBLEMS OF ECONOMY	Taking Examples explain the concept of Micro and Macro Economics Taking various situations explaining the concept of positive and normative economics Asking students about various problems faced by every economy and thus relating to central problems of an economy	Enable the students to differentiate betv micro and macro economics Students will be able to give example positive and normative economics Explain the problems of What to produce How to produce For whom to produce In various economic systems
CONSUMER EQUILIBRIUM- UTILITY APPROACH	Taking day to day examples introduce concept of utility Using schedule and blackboard with help of diagram explain relationship between TU and MU Using concept of MU explaining the law of diminishing marginal utility Taking real life examples explaining the concept of consumers equilibrium Using MU approach Both 1 commodity case and 2 commodity case	Differentiate between different types of util Enable the students to calculate TU and M They will be able to calculate TU and MU Enable them to establish the relation between TU and MU Students will be able to tell the condition consumers equilibrium for 1 and 2 comm case Enable them to numerically calc consumers equilibrium in 1 and 2 comm case

INDIFFERENCE CURVE APPROACH	Taking numerical examples explains how to attain equilibrium in 1 and 2 commodity cases. Starting the chapter with budget and asking questions on budget from students . Explaining the meaning of budget set ,budget constraint, budget line Explaining them about preferences and how preferences have to play an important role in finding out consumers equilibrium with indifference approach Using numerical values to construct budget line and indifference curve using black board Showing the students on the black board how consumer's equilibrium is calculated with the help of budget line and indifference curve Explaining them the conditions of consumer's equilibrium and why it is so with the help of diagram	Enable students to define budget line ,bu set , budget equation Student will be able to tell the importanc consumers preference and budget lin finding out consumers equilibrium Construct the diagram showing consur equilibrium in indifference analysis Chalk out the conditions for consu equilibrium in indifference analysis Construct the diagram showing consu equilibrium in indifference analysis
DEMAND CONCEPT	Meaning of Demand will be introduced by taking examples Various factors affecting demand will be taken up using examples to explain their impact on Demand	Enable students to differentiate betw desire and Demand Chalk out the factors which affect Demand Differentiate between normal and inf goods substitute and complementary good

	Using black board schedule will be used to explain the concept of demand schedule and demand curve (individual and market) Law of demand will be explained using demand schedule Using diagrams on black board concept of change in Demand and change in Quantity Demanded will be taught	Draw the demand schedule and the der curve Give reasons for the downward slope demand curve Differentiate between change in demand change in quantity demand using diagram

MONTH SEPTEMBER,2022 NO OF WORKING DAYS:25

TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
ELASTICITY OF DEMAND	Asking students questions on how much change in demand takes place as a result of change in price Relating this discussion with Ed ,concept of Ed will be explained in class Various examples will be given to the students and asked about there Ed Various degrees of Ed will be explained with the help of diagram explaining concept of slope of Ed also with it Various egs of numericals will be taken up on the black board to explain how to measure Ed.	Define Ed and chalk out the factors affecti Ed Students will be able to tell degree of Ed various goods Students will be able to tell the values of various degrees of Ed Enable students to calculate price Ed and interpret the result of Ed Enable students to draw the slope of vario degrees of Ed

REVISION OF TERM I EXAMS		

One activity will be done by the students, on framing a Questionnaire and doing a survey on at least ten people to find out their preference of any consumer product and interpret the result , in the first Term.

TERM II

MONTH:OCTOBER,2022 **NO OF WORKING DAYS:17**

TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
PRODUCERS BEHAVIOUR, PRODUCTION FUNCTION, PRODUCT CONCEPT	Explaining the meaning of production function Taking factors affecting production and asking students how it affects production Taking examples of production schedule to explain the concept of TPP,MPP,APPDraw the diagram of TPP,MPP APP and explain the relationship between TPP,MPPandAPP Law of production will be explained using the schedule of TPPand MPP in the short run.	Define production function Establish relationship between TPP and MPPusing diagram Draw curves of TPP,MPPand APP Enable the students to chalk out various phases of law of variable proportions They will be able to calculate MPP,APPan TPP Chalk out in which phase producer would l to produce.
COST CONCEPT AND REVENUE CONCEPT	Concept of cost and revenue will be taken up by using live examples and cost and revenue schedules will be used supported by curves to explain the concept of cost and revenue on the black board.	Enable the students to define cost and revenue Differentiate between various cost concep Establish relationships between TC,MC,A using curves and schedules. Draw TR,MR and AR curves and understa the relationship between them.

	Revenue curves will be discussed in reference to various forms of markets.	Draw the AR and MR curves in various markets and explain why the shape is so .
PRODUCERS EQUILIBRIUM PRODUCERS EQUILIBRIUM USING MR AND MC APPROACH	Asking questions from students regarding where the producer would like to produce and hence introduce the topic of Producers equilibrium Taking example of perfect competition market schedule students will be asked to draw diagram Using diagram producer equilibrium will be explained using MR and MC.	Enable the students to define producer''s equilibrium Enable the students to draw diagrams sho producers equilibrium usingMR and MC curves. Students will be able to tell why MP=MC, w MC curve cuts MR from below is the point producers equilibrium

MONTH NOVEMBER,2022 NO OF WORKING DAYS:24

TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
SUPPLY	Meaning of Supply will be introduced by taking examples Various factors affecting supply will be taken up using examples to explain their impact on supply Using black board schedule will be used to explain the concept of supply schedule and supply curve (individual and market)	Enable students to differentiate between stock and supply Chalk out the factors which affect supply Differentiate between normal and inferior goods substitute and complementary good Draw the supply schedule and the supply curve Give reasons for the upward slope the supply curve Differentiate between change in supply an

	Law of supply will be explained using supply schedule Using diagrams on black board concept of change in supply and change in Quantity supplied will be taught	change in quantity supply using diagram Enable them to show changes on the supp curve as a result of change in factors affecting supply.
ELASTICITY OF SUPPLY(Es)	Asking students questions on how much change in supply takes place as a result of change in price Relating this discussion with Es,concept of Es will be explained in class Various examples will be given to the students and asked about their Es Various degrees of Es will be explained with the help of diagram explaining concept of slope of Es also with it Examples of numericals will be taken up on the black board to explain how to measure Es, mathematically and interpret the result.	Define Es and chalk out the factors affecti Es Students will be able to tell degree of Es o various goods Students will be able to tell the values of various degrees of Es Enable students to draw the slope of vario degrees of Es Enable students to mathematically calcula Es and interpret the result.
VARIOUS MARKET FORMS: PERFECT COMPETITION, MONOPOLY, IMPERFECT AND OLIGOPOLY COMPETITION.	Asking questions from students about various markets and thus introducing the various market forms on the basis of competition Discussing meaning of various market forms and explaining the implications of the features Using diagram explaining	Define market on the basis of competition the market Chalk out the features of various market competitions. Draw the diagrams of how prices are

	how prices are determined by the slope of the demand curve in various market forms. Asking students to differentiate between various markets by making a tabular presentation.	determined in various market forms. Enable the students to differentiate betwee various market forms.
EQUILIBRIUM PRICE	Taking the concept of Demand & Supply explaining how prices will be determined by Demand and Supply. Drawing diagram on black board explain how equilibrium price quantity is determined . Using diagrams explaining how with the change in DD and SS equilibrium price and quantity will be affected. Explaining the concept of Excess and Deficient Demand with the help of examples and diagrams and also how this situation is rectified by the government.	Students will be able to show with the help a diagram, how equilibrium price and quan is determined. Enable them to draw diagrams, showing th effect of changes in DD and SS on equilibrium price and quantity. Draw the curves showing situation of exce and deficient DD Students will be able to chalk out the steps taken by the government in the situation o excess and deficient DD.

MONTH:DECEMBER,2022 **NO OF WORKING DAYS:26**

TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
MEASURES OF DISPERSION	Introducing the topic by explaining the relation of averages with measures of dispersion(absolute and relative).	Enable the students to understand th need to study dispersion Differentiate between various measur of dispersion

	Explaining various measures of dispersion by giving them meaning and examples. (range,QD,MD,S.D,CV,Variance) By taking examples of dispersion explaining numerically how to measure dispersion and interpreting the result. Explain absolute and relative dispersion	Enable them to numerically calculate dispersion and interpret the result. Distinguish between absolute and rela measures of dispersion.
CORRELATION	Explain the meaning of correlation using examples. Examples will be taken to explain the relationship between two variables. Types of correlation will be explained by examples and infographics. Infographics will be used to explain scatter diagrams. Numerical examples will be used to explain how to measure correlation by different methods. Through infographics analyse the degree and direction of the relationship between the variables.	Enable the students to understand th meaning of correlation. Enable them to establish relationship between the variables e.g positive an negative correlation. Enable the students to estimate the degree of correlation through scatter diagrams. Enable them to calculate coeff of correlation and tell the degree of correlation between them.

Project will be given on any of the topics of class XI syllabus of Term II.

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

TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
INDEX NUMBERS	Explain the meaning of index numbers Taking examples of few index numbers and asking students to tell about them	Enable the students to define index numb They will give examples of some index numbers and where they are used. Chalk Out the formulas for index numbers.

REVISION FOR TERM II EXAMS	Through numerical examples measuring index numbers will be explained. Discussing usage of index numbers in the Economy. Practice of subjective tests will be given through pen and paper tests.	Enable them to calculate various index numbers numerically .

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

TOPIC	**METHODOLOGY**	**LEARNING OUTCOMES**
REVISION OF TERM II PRACTICE EXAM FOR TERM II TERM II EXAM IN MONTH OF FEB-MARCH 2023.	Sample papers will be discussed in class . Practice of Subjective questions will be given.	Enable them to attempt Subjective questions.

SUBJECT: APPLIED MATHEMATICS (241)

Objectives :

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

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

Month: JULY No. of working days:24

UNIT – 2 ALGEBRA			
Sets			
2.1	Introduction to sets – definition	• Define set as well-defined collection of objects	• Definition of a Set • Examples and Non-examples of Set
2.2	Representation of sets	• Represent a set in Roster form and Set builder form	• Write elements of a set in Set Builder form and Roster Form • Convert a set given in Roster fo into Set builder form and vice-versa
2.3	Types of sets and their notations	Identify different types of sets on the basis of number of elements in the set Differentiate between equal set and equivalence set	Types of Sets: Finite Set, Infinite Set, Empty Set, Singleton Set
2.4	Subsets	Enlist all subsets of a set Find number of subsets of a given set Find number of elements of a power set	Subset of a given set Familiarity with terms like Superset, Improper subset, Universal set, Power set
2.5	Intervals	Express subset of real numbers as intervals	Open interval, closed interval, semi open interval and semi closed interval
2.6	Venn diagrams	Apply the concept of Venn diagram to understand the relationship between sets Solve problems using Venn diagram	Venn diagrams as the pictorial representation of relationship between sets Practical Problems based on Ven Diagrams
2.7	Operations on sets	Perform operations on sets to solve practical problems	Operations on sets include i) Union of sets ii) Intersection of sets iii) Difference of sets iv) Complement of a set v) De Morgan's Laws

Relations			
2.8	Ordered pairs Cartesian product of two sets	Explain the significance of specific arrangement of elements in a pair Write Cartesian product of two sets Find the number of elements in a Cartesian product of two sets	Ordered pair, order of elements an ordered pair and equality o ordered pairs Cartesian product of two non-empty sets
2.9	Relations	Express relation as a subset of Cartesian product Find domain and range of a relation	Definition of Relation, examples pertaining to relations in the re number system
2.10	Types of relations	Define and illustrate different types of relations: Empty relation and universal relation Examine whether the relation is equivalence or not Define function as a special type of relation Categorize relations that are functions and non-functions	Types of relations: Empty relation, universal relat reflexive relation, symmetric relation, transitive relation, equivalence relation Introducing a function as a specia type of relation Examples and non-examples of functions
Sequences and Series			
2.11	Sequence and Series	• Differentiate between sequence and series	
2.12	Arithmetic Progression	• Identify Arithmetic Progression (AP) • Establish the formulae of of *n* terms • Solve application problems based on AP • Find arithmetic mean (AM) of two positive numbers	• General term of AP: • Sum of n terms of AP : $S_n =$ AM of=
		numbers	

2.13	Geometric Progression	• Identify Geometric Progression (GP) • Derive the n^{th}term and sum of n terms of a given GP • Solve problems based on applications of GP • Find geometric mean (GM) of two positive numbers • Solve problems based on relation between AM and GM	• General term of GP: $t_n = ar^{n-1}$ • Sum of n terms of a GP: $S_n = \frac{a(r^n-1)}{r-1}$ • Sum of infinite term of GP = $\frac{a}{1-r}$, where $-1 < r < 1$ • Geometric mean of *a* and *b* = $\sqrt{ab}$

Month: AUGUST No. of working days:23

Sl. No.	Contents	Learning Outcomes: Students will be able to	Notes / Explanation
UNIT – 1 NUMBERS, QUANTIFICATION AND NUMERICAL APPLICATIONS			
Numbers & Quantification			
1.2	Binary Numbers	• Express decimal numbers in binary system • Express binary numbers in decimal system	• Definition of number system (decimal and binary) • Conversion from decimal to bin system and vice - versa
1.4	Indices, Logarithm and Antilogarithm	• Relate indices and logarithm /antilogarithm • Find logarithm and antilogarithms of given number	• Applications of rules of indices • Introduction of logarithm and antilogarithm • Common and Natural logarithm
1.5	Laws and properties of logarithms	• Enlist the laws and properties of logarithms • Apply laws of logarithm	• Fundamental laws of logarithm
1.6	Simple applications of logarithm and antilogarithm	• Use logarithm in different applications	• Express the problem in the form an equation and apply logarithm antilogarithm
Numerical Applications			
1.7	Averages	• Determine average for a given data	• Definition and meaning • Problems on average, weighted average
1.8	Clock	• Evaluate the angular value of a minute • Calculate the angle formed between two hands of clock at given time • Calculate the time for which hands of clock meet	• Number of rotations of minute hand / hour hand of a clock in a day • Number of times minute hand a hour hand coincides in a day
1.9	Calendar	• Determine Odd days in a month/ year/ century • Decode the day for the given date	• Definition of odd days • Odd days in a year/ century. • Day corresponding to a given d
1.10	Time, Work and Distance	• Establish the relationship between work and time • Compare the work done by the individual / group w.r.t. time • Calculate the time taken/ distance covered/ Work done from the given data	• Basic concept of time and work • Problems on time taken / distan covered / work done
1.11	Mensuration	• Solve problems based on surface area and	• Comparison between 2D and 3 shapes • Combination of solids

		volume of 2D and 3D shapes • Calculate the volume/ surface area for solid formed using two or more shapes	• Transforming one solid shape another
1.12	Seating arrangement	• Create suitable seating plan/ draft as per given conditions (Linear/circular) • Locate the position of a person in a seating arrangement	• Linear and circular seating arrangement • Position of a person in a seatir arrangement
UNIT –3 MATHEMATICAL REASONING			
3.1	Mathematical reasoning	• Identify mathematically acceptable statements • Express the implications of the compound statement • Validate mathematical statements	• Meaning of mathematical statements • Negation • Compound statements • Quantifiers • Converse and Contrapositive the statement • Implications • Validating statements
3.2	Logical reasoning	• Solve logical problems involving odd man out, syllogism, blood relation and coding decoding	• Odd man out • Syllogism • Blood relations • Coding Decoding
UNIT – 4 CALCULUS			
4.1	Functions	Identify dependent and independent variables Define a function using dependent and independent variable	• Dependent variable and independent variable • Function as a rule or law that defines a relationship betwee one variable (the independent variable) and another variable (the dependent variable)
4.2	Domain and Range of a function	Define domain, range and co-domain of a given function	• Domain as a set of all values independent variable • Co-domain as a set of all valu of dependent variable • Range of a function as set of possible resulting values of dependent variable
4.3	Types of functions	Define various types of functions	Following types of functions w definitions and characteristics

Month: SEPTEMBER No. of working days: 25

UNIT – 4 CALCULUS			
4.1	Functions	Identify dependent and independent variables Define a function using dependent and independent variable	• Dependent variable and independent variable • Function as a rule or law that defines a relationship betwee one variable (the independent variable) and another variable (the dependent variable)
4.2	Domain and Range of a function	Define domain, range and co-domain of a given function	• Domain as a set of all values independent variable • Co-domain as a set of all valu of dependent variable • Range of a function as set of possible resulting values of dependent variable
4.3	Types of functions	Define various types of functions	Following types of functions w definitions and characteristics
		Identify domain, co-domain and range of the function	Constant function, Identity function, Polynomial function Rational function, Logarithm function, Exponential functio Modulus function, Greatest integer function, Signum func Algebraic function
4.4	Graphical representation of functions	• Representation of function graphically	• Graph of some polynomial functions, Logarithm function, Exponential Function, Modulu function, Greatest integer func Signum function

		domain and range of the function	function, Polynomial function, Rational function, Logarithm function, Exponential function, Modulus function, Greatest integer function, Signum function
6.4	Data Interpretation		
	Measure of Dispersion	• Understand meaning of dispersion in a data set • Differentiate between range, quartile deviation, mean deviation and standard deviation • Calculate range, quartile deviation, mean deviation and standard deviation for ungrouped and grouped data set • Choose appropriate measure of dispersion to calculate spread of data	• Mean deviation around mean a median • Standard deviation and varianc • Examples of different kinds of d helping students to choose and compare different measures of dispersion
	Skewness and Kurtosis	• Define Skewness and Kurtosis using graphical representation of a data set • Interpret Skewness and Kurtosis of a frequency distribution by plotting the graph • Calculate coefficient of Skewness and interpret the results	• Examples of symmetrical and asymmetrical data • Visualization of graphical representation of data using Exc Spreadsheet or any other comp assisted tool
6.5	Percentile rank and Quartile rank	• Define Percentile rank and Quartile rank • Calculate and interpret Percentile and Quartile rank of scores in a given data set	• Emphasis on visualizing, analys and interpreting percentile and quartile rank scores
6.6	Correlation	• Define correlation in values of two data sets • Calculate Product moment correlation for ungrouped and grouped data • Calculate Karl Pearson's coefficient of correlation • Calculate Spearman's rank correlation • Interpret the coefficient of correlation	• Emphasis on application, analy and interpreting the results of coefficient of correlation using practical examples

Month: OCTOBER No. of working days: 17

Sl. No.	Contents	Learning Outcomes: Students will be able to	Notes / Explanation
Permutations and Combinations			
2.15	Factorial	• Define factorial of a number • Calculate factorial of a number	• Definition of factorial: $n! = n(n-1)(n-2)\ldots 3.2.1$ Usage of factorial in counting principles
2.16	Fundamental Principle of Counting	• Appreciate how to count without counting	• Fundamental Principle of Additio • Fundamental Principle of Multiplication
2.17	Permutations	• Define permutation • Apply the concept of permutation to solve simple problems	• Permutation as arrangement of objects in a definite order taken some or all at a time • Theorems under different conditi resulting in $^{n}P_r$= ——— or o ——— arrangements
2.20	Combinations	• Define combination • Differentiate between permutation and combination • Apply the formula of combination to solve the related problems	-The number of combinations n different objects taken r at a time is given by $^{n}C_r$= ——— Some results on combinations • $^{n}C_0 = 1 = {}^{n}C_n$ • • $^{n}C_r = {}^{n}C_{n-r}$ • $^{n}C_r + {}^{n}C_{r-1} = {}^{n+1}C_r$
UNIT – 4 CALCULUS			
4.5	Concepts of limits and continuity of a function	• Define limit of a function • Solve problems based on the algebra of limits • Define continuity of a function	• Left hand limit, Right hand limit Limit of a function, Continuity o function
4.6	Instantaneous rate of change	• Define instantaneous rate of change	• The ratio — ——— as instantaneous rate of change, change in at any instant
4.7	Differentiation as a process of finding derivative	• Find the derivative of the functions	• Derivatives of functions (non-trigonometric only)
4.8	Derivatives of algebraic functions using Chain Rule	• Find the derivative of function of a function	differential coefficient of w.r.t x

Month: NOVEMBER No. of working days: 24

	Chain Rule		
UNIT – 5 PROBABILITY			
5.1	Introduction	• Appreciate the use of probability in daily life situations	• Probability as quantitative measure of uncertainty • Use of probability in determinin the insurance premium, weath forecasts etc.
5.2	Random experiment and sample space	• Define random experiment and sample space with suitable examples	• Sample space as set of all possible outcomes
5.3	Event	Define an event Recognize and differentiate different types of events and find their probabilities	Types of Event: Impossible and sure event, Independent and dependent event, mutually exclusive and exhaustive event
5.4	Conditional Probability	Define the concept of conditional probability Apply reasoning skills to solve problems based on conditional probability	Conditional Probability of event E given that F has occurred is:
5.5	Total Probability	Interpret mathematical information and identify situations when to apply total probability Solve problems based on application of total probability	Total Probability: sample space S, then probabilit an event A associated with S is:
5.6	Bayes' Theorem	State Bayes' theorem Solve practical problems based on Bayes' Theorem	• Bayes' Theorem: events which constitute a partiti of a sample space and be an event with non zero probability, then:

UNIT – 7 FINANCIAL MATHEMATICS			
7.1	Interest and Interest Rates	• Define the concept of Interest Rates • Compare the difference between Nominal Interest Rate, Effective Rate and Real Interest Rate • Solve Practical applications of interest rate	• Impact of high interest rates ar low interest rates on the busine
7.2	Accumulation with simple and compound interest	• Interpret the concept of simple and compound interest • Calculate Simple Interest and Compound Interest	• Meaning and significance of simple and compound interest • Compound interest rates applications on various financia products
7.3	Simple and compound interest rates with equivalency	• Explain the meaning, nature and concept of equivalency • Analyze various examples for	• Concept of Equivalency • Annual Equivalency Rate
7.8	Tax, calculation of tax, simple applications of tax calculation in Goods and service tax, Income Tax	Explain fundamentals of taxation Differentiate between Direct and indirect tax Define and explain GST Calculate GST Explain rules under State Goods and Services Tax (SGST) Central Goods and Services Tax (CGST) and Union Territory Goods and Services Tax (UTGST)	Computation of income tax Add Income from Salary, house property, business or profession, capital gain, other sources, etc. Less deductions PF, PPF, LIC, Housing loan, FD NSC etc. Assess the Individuals under Income Tax Act Formula for GST Different Tax heads under GST
7.9	Bills, tariff rates, fixed charge, surcharge, service charge	Describe the meaning of bills and its various types Analyze the meaning and rules determining tariff rates Explain the concept of fixed charge	Tariff rates- its basis of determination Concept of fixed charge service charge and their applications in various sectors of Indian econor

Month: DECEMBER No. of working days: 26

UNIT – 8 COORDINATE GEOMETRY			
8.1	Straight line	• Find the slope and equation of line in various form • Find angle between the two lines • Find the perpendicular from a given point on a line • Find the distance between two parallel lines	• Gradient of a line • Equation of line: Parallel to axes, point-slope form, two-points form, slope intercept form, intercept form • Application of the straight line in demand curve related to economics problems
8.2	Circle	• Define a circle • Find different form of equations of a circle • Solve problems based on applications of circle	• Circle as a locus of a point in a plane • Equation of a circle in standard form, central form, diameter form and general form
8.3	Parabola	• Define parabola and related terms • Define eccentricity of a parabola • Derive the equation of parabola	• Parabola as a locus of a point in a plane. • Equation of a parabola in standard form: • Focus, Directrix, Axis, Latus rectum, Eccentricity

REVISION TILL FEBRUARY 2023 —----------

Subject- Physical Education

Objectives-

To develop a comprehensive outlook of an individual with a strong civic position, moral qualities, sense of responsibility, an independent, initiative, tolerant person who is able to successfully socialize and to use different forms of physical education and sports in daily life to protect his or her own health and promote effective professional activities.

TERM I (THEORY)

(35 MARKS)

July to August

S No.	Chapter	Methodology	Learning Outcome
1	Changing Trends and Career in Physical Education	• Lecture method • Chalk & Board • Instructional method • Discussion method	Career options in Physical Education.
2	Olympic Value Education	• Lecture method • Discussion method	Importance of the Olympic socialisation of the world.
3	Physical Fitness, Wellness and Lifestyle	• Lecture method • Discussion method	Importance of Physical fitn a Healthy and productive li

September to October

S No.	Chapter	Methodology	Learning Outcomes
4	Test, Measurement and Evaluation	• Lecture method • Discussion method	Conducting tests for the measurement of different components of Physical fit
5	Fundamentals of Anatomy, Physiology and Kinesiology in Sports	• Lecture method • Demonstration method	Effects of Motor activities o different systems of the bo

Term I (Practical)

Project File (About one sport/game of choice)	05 Marks
Demonstration of Fitness Activity	05 Marks
Viva Voce (From Project file: Fitness)	05 Marks

TERM II (THEORY)

(35 MARKS)

November to January

S No.	Chapter	Methodology	Learning Outcomes
1	Physical education and sports for CWSN	• Lecture method • Discussion method	To understand the concept of disability and disorder.
2	Yoga	• Lecture method • Discussion method • Demonstration method	Asanas as a Preventive measure for different diseases.
3	Physical Activity and Leadership Training	• Lecture method • Discussion method	Importance of different types of Adventure sports.
4	Psychology in sports	• Lecture method • Discussion method	Role of psychology in sports performance.
5	Training and Doping in Sports	• Lecture method • Discussion method	Classification of Doping and Side effects of prohibited substances.

*Topics included in Term II from Term I –

- Components of Physical Fitness
- Functions of Respiratory and Circulatory System
- Measurement of Health-Related Fitness

TERM II (Practical)

Project File (Yoga and General Motor fitness test)	05 Marks
Demonstration of Fitness Activity/Yoga	05 Marks

Viva Voce (From Project file: General Motor fitness; Yoga)	05 Marks

Subject: Hind. Music Vocal

Learning Objectives:-

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

TERM-I

CONTEN	METHODOLOGY	LEARNING OUTCOME
May:- 26 Periods Short & Long Definitions and Introduction of Raga Bhairvi PRACTICAL:- Aalap and Taan in Raag Bhairvi	Lecture Method and Writing of Raag Bhairvi Notations with Aalap and Taan in Raag Bhairvi	Students will learn short definitions. Developing singing skills.
July:- 25 Periods; Brief study of Musical elements in natya shastra PRACTICAL:- Raag Bhairvi (Drut Khayal)	Lecture Method. Writing of the complete description and their importance.	Students will learn the way of writing Drut Khayal notations.

August:- 22 Periods; Definition of Khayal and Ek Taal PRACTICAL:- Raag Bihag with Aalap and Taan.	Lecture Method. Writing of Taan and Aalap	Developing rhythmic sense
September:- 14 Periods; Raag parichey of Bihag and short notes. PRACTICAL:- Practice of dugun and chaugun with hand beats. Also, making of the Practical File.	Lecture Method.	Developing the sense of Sur and Taal

TERM-II

CONTENT	METHODOLOGY	LEARNING OUTCOME
October:- 21 Periods; Brief study of Margi – Desi sangeet PRACTICAL:- Raag Bhimplasi Drut Khayal with simple elaboration	Learning of short notes and Taal with hand beats.	Students will know how to learn Layakari. Developing the sense of Taal beats.
November:- 20 Periods; Brief study of Drupad and Tarana as well as	Lecture and Demo Method	Students will learn the basic knowledge ab classical music by Taanpura

knowledge and structure of Taanpura PRACTICAL:- One Drupad with dugun in any one of the prescribed Raag.		
December:- 25 Periods; Life Sketch and contribution of Tansen, Bhatkhande and Paluskar. PRACTICAL:- One Devotional Song and reciting of chautal with tha, dugun and chaugun	Lecture and Demo Method	Students will collect their photographs ar learn how to improve classical music
January:- 16 Periods; Practice of writing the composition of the prescribed Raag PRACTICAL:- Ability to recognise the prescribed Raag from the phrases of Swaras	More practice for perfection	Students will be prepared for the theory a practical examination
February:- 15 Periods; Preparation for practical and theory examination	More practice for perfection	Garnished the Vocal Music Subject

SUBJECT Painting (049)

Syllabus

Learning objectives

The objective is to familiarise the students with the various styles of modes of art expressions from different parts of India. This would enrich their vision and enable them to appreciate and develop an aesthetic sensibility to enjoy the beauty of nature and life. The students will also have an opportunity to observe and study the evolution of its mutations and synthesis with other style and rise altogether new style.

Term I

July

Theory	Practical
Introduction of Arts Limbs, Elements and Principles of Arts	Basic Sketching, Lines, Shapes and Forms

August

Theory	Practical
Pre-Historic Period and Indus Valley Civilisation	Object, Vegetables, Fruits

September

Theory	Practical
Buddhist Jain Hindu Art	Flowers

Term II

October

Theory	Practical
Ajanta Art	Trees and Landscapes

November

Theory	Practical
Indian Temples and Bronze	Birds or Animals

December

Theory	Practical
Indo-Islamic Architecture	Human Figures and Transport

January

Theory	Practical
Revision	Completion Of Portfolio

POLITICAL SCIENCE
CURRICULUM 2022-23

LEARNING OBJECTIVES

- Understand the contemporary world.
- Understand the key political events and processes in the post-cold war era.
- Analyze various global institutions, processes and events shaping their lives.
- Understand and analyze constitutional institutions, figures and their working in the post- independence period; political events, trends, other facts and figures and contribution of eminent personalities from the post-independence to contemporary India.
- Develop their capacity to link political policies and processes with contemporary realities.
- Encourage the students to understand and analyse the challenges for contemporary India.

Internal/ External Assessment

1. Prepare a file.

MONTH AND NO.OF WORKING DAYS (MAY 16 DAYS)

SR. NO.	CHAPTERS	METHODOLOGY	LEARNING OBJECTIVES
1.	CONSTITUTION: WHY AND HOW?	Explanation method; Interactive Method	How constitution govern the allocation of power in society. What was the ways in which the constitution of India was made.
2.	ELECTION AND REPRESENTATIO N	Explanation method; Interactive Method	What are the different modes of election? What is the importance of the provision for free and fair elections.

MONTH AND NO. OF WORKING DAYS (JULY 24 DAYS)

SR. NO.	CHAPTERS	METHODOLOGY	LEARNING OBJECTIVES
3.	LOCAL GOVERNMENT	Explanation method; Interactive Method	What are the provisions made by the 73rd and 74th amendment? What are the functions and responsibilities of the local government bodies?
4.	DEVELOPMENT	Explanation method; Interactive Method	Discuss the achievements and problems of existing models of development. Discuss some of the alternative models of development which have been put forward.

MONTH AND NO.OF WORKING DAYS (AUGUST 23 DAYS)

SR. NO.	CHAPTERS	METHODOLOGY	LEARNING OBJECTIVES
5.	POLITICAL THEORY: AN INTRODUCTION	Explanation method; Interactive Method	What is Politics? What do we study in Political Theory?
6.	RIGHTS	Explanation method; Interactive Method	What is the meaning of Rights? What purpose do rights serve and, why are they so important?

SEPTEMBER REVISION OF TERM I

MONTH AND NO. OF WORKING DAYS (OCTOBER 17 DAYS)

SR. NO.	CHAPTERS	METHODOLOGY	LEARNING OBJECTIVES

1.	LEGISLATURE	Explanation method; Interactive Method; Map Work	What is the importance of legislature? What are the functions and powers of the Parliament of India?
2.	EXECUTIVE	Explanation method; Interactive Method	Make a distinction between the parliamentary and presidential executive.

MONTH AND NO.OF WORKING DAYS (NOVEMBER 24 DAYS)

SR. NO.	CHAPTERS	METHODOLOGY	LEARNING OBJECTIVES
3.	JUDICIARY	Explanation method; Interactive Method	What is the meaning of independence of judiciary? What is the relationship between Judiciary and the Parliament of India?
4.	LIBERTY	Explanation method; Interactive Method	Explain the difference between the negative and positive dimensions of freedom. Explain what is meant by the term harm principle.

MONTH AND NO. OF WORKING DAYS (DECEMBER 26 DAYS)

SR. NO.	CHAPTERS	METHODOLOGY	LEARNING OBJECTIVES
5.	EQUALITY	Explanation method; Interactive Method	What is Equality? How may we pursue equality and minimize inequality in different spheres of life? How do we distinguish between different dimensions of equality- political, economic and social?
6.	SOCIAL JUSTICE	Explanation method; Interactive Method	Explain what is meant by distributive justice. Discuss John Rawls argument that a fair and just society would be in the interest of all members and could be defended on rational grounds.

JANUARY AND FEBRUARY FOR REVISION OF TERM II

हिंदी पाठ्यक्रम 2022-23
कक्षा - ग्यारहवीं

<u>हिंदी शिक्षण के सामान्य उद्देश्य –</u>

- शुद्ध बोलने और लिखने के लिए प्रेरित करना
- सरल और प्रभावपूर्ण भाषा में अपने विचार, भाव और अनुभूति को व्यक्त करना
- विद्यार्थियों के ज्ञान, विवेक एवं चरित्र का विकास करना
- पठन-पाठन के प्रति रुचि उत्पन्न करना
- सत साहित्य की रचना के योग्य बनाना
- जीवन की विभिन्न परिस्थितियों का अध्ययन करा उन्हें भावी जीवन के लिए तैयार करना
- ज्ञानार्जन के प्रति गहरी रुचि उत्पन्न करने का प्रयास करना
- पुस्तकों में निहित ज्ञान भंडार का अवलोकन कर स्वाध्याय के प्रति रूचि उत्पन्न करना
- विद्यार्थियों में उत्तम गुणों का विकास करना

<u>सी बी एस ई द्वारा निर्धारित पाठ्य पुस्तकें -</u>

आरोह भाग - 1
वितान भाग - 1
अभिव्यक्ति और माध्यम

} एन सी ई आर टी

पाठ्यक्रम (मई - सितंबर) 2022 -23

	माह	विषय	शिक्षण प्रक्रिया	शिक्षण अधिगम उद्देश्य (Learning Outcomes)
1.	<u>मई</u>	आरोह भाग – 1 <u>गद्य खंड</u> नमक का दरोगा	लेखक और पाठ परिचय देते हुए पाठ का वाचन करवाया जाएगा। यथा स्थान कठिन शब्दों के अर्थ, आशय स्पष्टीकरण किए जाएंगे।	• सत्य, सदवृत्ति, अच्छाई आदि जीवन मूल्यों के महत्व से परिचित होंगे। • तत्कालीन सामाजिक परिस्थितियों की वर्तमान में प्रासंगिकता समझ पाएंगे।
	माह	**विषय**	**शिक्षण प्रक्रिया**	**शिक्षण अधिगम उद्देश्य (Learning Outcomes)**
2.	<u>जुलाई</u> <u>कार्य दिवस</u> <u>24 दिन</u>	आरोह भाग – 1 <u>गद्य खंड</u> मियां नसीरुद्दीन	लेखक और पाठक का परिचय देते हुए छात्रों के सहयोग से पाठ का वाचन, कठिन शब्दों के अर्थ, आशय स्पष्टीकरण किए जाएंगे।	मियां नसीरुद्दीन के व्यक्तित्व, रूचियों और स्वभाव से परिचित होंगे। प्रत्येक व्यवसाय का महत्व समझेंगे।

		काव्य खंड कबीर अनुपूरक पुस्तक वितान - 1 लता मंगेशकर अभिव्यक्ति और माध्यम जनसंचार माध्यम	कवि और पद परिचय देते हुए पदों का भाव-सौंदर्य, काव्य-सौंदर्य करवाया जाएगा। लता मंगेशकर के विषय में छात्रों से पूर्व जानकारी हासिल करते हुए, लता की गायकी की विशेषताएं करवाई जाएंगी। संचार, जनसंचार का अर्थ स्पष्ट करते हुए, इनके विभिन्न प्रकार और उनके इतिहास की जानकारी दी जाएगी।	धार्मिक सौहार्द इता की भावना की समझ विकसित होगी। अर्थबोध क्षमता का विकास होगा। गायन के क्षेत्र में लगता मंगेशकर की विशिष्टताओं से परिचित होंगे। जन संचार के विभिन्न माध्यमों के विषय में जानकारी प्राप्त होगी। जीवन में इनके महत्व से परिचित होंगे।
3.	अगस्त कार्य दिवस 23 दिन	प्रथम आवधिक परीक्षा आरोह -1 गद्य खंड गलता लोहा आरोह भाग – 1 काव्य खंड मीराबाई	3.8.22 - 12.8.22 (10 दिन) लेखक और पाठ का परिचय देते हुए भारतीय समाज में विद्यमान जातिगत भेदभाव की चर्चा करते हुए पाठ का वाचन, शब्दार्थ, आशय स्पष्टीकरण करवाए जाएंगे। मीरा और उनके द्वारा रचित पदों का परिचय देते हुए, भाव-सौंदर्य काव्य-सौंदर्य करवाया जाएगा।	जातिगत भेदभाव जैसी सामाजिक कुरीतियों को समझ उन्हें दूर करने के लिए प्रेरित होंगे। ग्रामीण जीवन की कठिनाइयों से अवगत होंगे। शिक्षा की महत्ता समझ सकेंगे। मीरा की श्री कृष्ण के प्रति भक्ति भावना से परिचित होंगे। श्रीकृष्ण को प्राप्त करने के लिए उनके द्वारा सहन किए गए कष्टों को समझेंगे। एकाग्रता का महत्व जानेंगे।
	माह	**विषय**	**शिक्षण प्रक्रिया**	**शिक्षण अधिगम उद्देश्य (Learning Outcomes)**
4.	सितंबर कार्य दिवस 25 दिन	आरोह भाग – 1 काव्य खंड वे आंखें अभिव्यक्ति और माध्यम कोश -एक परिचय	किसान जीवन की कठिनाइयों का उल्लेख करते हुए कविता वाचन, शब्दार्थ, भाव-सौंदर्य, काव्य-सौंदर्य करवाया जाएगा। शब्दकोश के विषय में छात्रों से जानकारी हासिल करते हुए पाठ को जोड़ा जाएगा। शब्दकोश में वनों का क्रम इत्यादि पढ़ाया जाएगा।	ग्रामीण समाज में स्त्रियों और किसानों की स्थिति से परिचित होंगे। कविता रसास्वादन कर सकेंगे। हिंदी भाषा के शब्दकोश के प्रयोग की जानकारी हासिल होगी।

		अपठित गद्यांश, पद्यांश प्रथम सत्रीय परीक्षा	अपठित गद्यांश-पद्यांश उपलब्ध करवा प्रश्नाभ्यास करवाया जाएगा। 17.9.22 - 1.10.22 (15 दिन)	अर्थग्रहण, भावग्रहण क्षमता का विकास होगा।
पाठ्यक्रम (अक्टूबर - मार्च) 2022 -23				
5.	अक्टूबर कार्य दिवस 17 दिन	आरोह भाग – 1 गद्य खंड स्पीति में बारिश काव्य खंड घर की याद वितान - 1 राजस्थान की रजत बूंदें	लेखक व पाठ परिचय देते हुए, छात्रों से उनके पर्यटन के अनुभव की जानकारी प्राप्त करते हुए पाठ का पाठन, शब्दार्थ और आशय स्पष्टीकरण करवाए जाएंगे। स्वतंत्रा संग्राम से कविता को जोड़ते हुए कविता का वाचन, भाव-सौंदर्य, काव्य-सौंदर्य करवाया जाएगा। राजस्थान की भौगोलिक स्थिति से पाठ की शुरुआत करते हुए, वहां पानी की कमी और वर्षा के जल के संरक्षण की जानकारी देते हुए पाठ को पढ़ाया जाएगा।	स्पीति प्रदेश की प्राकृतिक सुंदरता से परिचित होंगे। पर्यटन के महत्व को समझेंगे पर्वतीय प्रदेशों की कठिनाइयों से भी परिचित होंगे। कविता का रसास्वादन कर सकेंगे। घर और अपनों के महत्व को समझेंगे। पानी के महत्व को समझते हुए उसके संरक्षण के लिए प्रेरित होंगे। जल के दुरुपयोग को बंद करने के लिए स्वयं भी प्रेरित होंगे और दूसरों को भी प्रेरित करेंगे।
	माह	**विषय**	**शिक्षण प्रक्रिया**	**शिक्षण अधिगम उद्देश्य (Learning Outcomes)**
6.	नंबर कार्य दिवस 24 दिन	आरोह - 1 गद्य खंड जामुन का पेड़ (एकांकी) भारत माता आरोह - 1 काव्य खंड	छात्रों को एकांकी का परिचय देते हुए विभिन्न छात्रों के बीच चरित्र विभाजन करते हुए कक्षा में एकांकी का मंचन करवाया जाएगा। नेहरू जी के विषय में छात्रों से जानकारी हासिल करते हुए पाठ को जोड़ा जाएगा। पाठ का वाचन शब्दार्थ और आशय स्पष्टीकरण करवाए जाएंगे। गजल विद्या का परिचय देते हुए छात्रों को शेरों के अर्थ और भाव-सौंदर्य करवाए जाएंगे।	छात्र एकांकी कला से परिचित होंगे। सरकारी लचर शासन प्रणाली से परिचित होंगे। किसानों की समस्याओं से परिचित होंगे। नेहरू जी के विचारों को समझेंगे। शेरों का रसास्वादन कर सकेंगे और तत्कालीन समाज और राजनीति से परिचित होंगे।

		गजल आओ मिलकर बचाएं	बढ़ते शहरीकरण के दुष्प्रभावों की चर्चा करते हुए कविता का वाचन, भाव-सौंदर्य और काव्य-सौंदर्य करवाया जाएगा।	प्रकृति संरक्षण की ओर प्रेरित होंगे। औद्योगीकरण के दुष्प्रभावों को समझेंगे।
7.	दिसंबर कार्य दिवस 26 दिन	तृतीय आवधिक परीक्षा वितान - 1 आलो आंधारि औपचारिक पत्र	1.12.22 - 9.12.22 घरेलू सहायिकाओं के जीवन की कठिनाइयों पर चर्चा करते हुए पाठ का वाचन और आशय स्पष्टीकरण करवाए जाएंगे। छात्रों के पूर्व ज्ञान से जोड़ते हुए औपचारिक पत्र का प्रारूप स्पष्ट किया जाएगा। अभ्यास के लिए पत्र लिखने को दिया जाएगा।	घरेलू सहायिकाओं के संघर्षपूर्ण जीवन से परिचित होंगे। यथासंभव उनकी सहायता के लिए प्रेरित होंगे। लेखन क्षमता का विकास होगा।
	माह	**विषय**	**शिक्षण प्रक्रिया**	**शिक्षण अधिगम उद्देश्य (Learning Outcomes)**
8.	जनवरी कार्य दिवस 18 दिन	कार्यालयी लेखन और प्रक्रिया रचनात्मक लेखन	सरकारी, अर्द्ध-सरकारी और गैर सरकारी कार्यालयों में लेखन प्रक्रिया के विभिन्न प्रारूप यथा कार्यसूची, कार्यवृत्त, प्रेस-विज्ञप्ति आदि का प्रारूप सहित अभ्यास करवाया जाएगा। विभिन्न विषय देकर अनुच्छेद लेखन के लिए दिया जाएगा।	कार्यालयी लेखन के विभिन्न प्रारूपों से परिचित होंगे। व्यवहारिक जीवन में इनका प्रयोग करना सीखेंगे। अभिव्यक्ति की लेखन क्षमता का विकास होगा। कल्पना शक्ति विकसित होगी।
9.	फरवरी कार्य दिवस 22 दिन	वार्षिक परीक्षा हेतु द्वितीय सत्रीय पाठ्यक्रम की पुनरावृति	27.1.23 - 6.2.23 अभ्यास परीक्षा	प्रत्यास्मरण क्षमता, लेखन क्षमता बोध और तार्किक क्षमता में अभिवृद्धि होगी।
10.	मार्च	वार्षिक परीक्षा		

- omputer Science
C CLASS-XI 2022-23
Code No. 083

a. Develop basic computational thinking
b. Explain and use data types
c. Appreciate the notion of algorithm
d. Develop a basic understanding of computer systems - architecture, operating system and cloud computing
e. Explain cyber ethics, cyber safety and cybercrime
f. Understand the value of technology in societies along with consideration of gender and disability issues

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

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit I: Computer Systems and Organisation ● Basic Computer Organisation: Introduction to computer system, hardware, software, input device, output device, CPU, memory (primary, cache and secondary), units of memory (Bit, Byte, KB, MB, GB, TB, PB) ● Types of software: system software (operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler & interpreter), application software ● Operating system (OS): functions of operating system, OS user interface	▪ Lecture method ▪ Diagrammatic representation ▪ Group discussion ▪ Demonstration of activities	The students will be able to... -The concept of Basic Computer Organization -Types of software -Operating system and its functions

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

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits ● Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems. ● Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32) ● Emerging trends: Cloud computing, cloud services (SaaS, IaaS, PaaS), blockchains, Artificial Intelligence (AI), Machine Learning (ML), Internet of Things (IoT)	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Know Boolean logic, Number system, Encoding Scheme etc.

MONTH & NO. OF WORKING DAYS : JULY -24 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit II: Computational Thinking and Programming – 1 ● Introduction to problem solving: Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging). representation of algorithms using flow chart and pseudo code, decomposition ● Familiarization with the basics of Python programming: Introduction to Python, features of Python, executing a simple "hello world" program, execution modes: interactive mode and script mode, Python	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Know basic features of Python programming. ●Develop small python programs like 'Hello Work'

character set, Python tokens (keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use of comments		

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

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● Knowledge of data types: number (integer, floating point, complex), boolean, sequence (string, list, tuple), none, mapping (dictionary), mutable and immutable data types ● Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators (is, is not), membership operators (in, not in) ● Expressions, statement, type conversion & input/output: precedence of operators, expression, evaluation of expression, python statement, type conversion (explicit & implicit conversion), accepting data as input from the console and displaying output ● Errors: syntax errors, logical errors, runtime errors ● Flow of control: introduction, use of indentation, sequential flow, conditional and iterative flow control	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Learn data types in python programming language ● Various operators used in python programming language ● Learn expressions, statements in python. ● Know errors in python programming ● Know flow of control in python programming

MONTH & NO. OF WORKING DAYS : SEPTEMBER -14 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● **Conditional statements**: if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number ● Iterative statements: for loop, range function, while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number etc ● **Strings:** introduction, indexing, string operations (concatenation, repetition, membership & slicing), traversing a string using loops, built-in functions: len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split()	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● know conditional statement, iterative statement in python programming ●Know use of string with its various functions

MONTH & NO. OF WORKING DAYS : OCTOBER -17 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● **Lists:** introduction, indexing, list operations (concatenation, repetition, membership & slicing), traversing a list using loops, built-in functions: len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists, suggested programs: finding the	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ●Know about list with its various useful functions ●Know about tuples with its various useful functions

maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list ● **Tuples:** introduction, indexing, tuple operations (concatenation, repetition, membership & slicing), built-in functions: len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple, suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple		

MONTH & NO. OF WORKING DAYS : NOVEMBER -24 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
● **Dictionary:** introduction, accessing items in a dictionary using keys, mutability of dictionary (adding a new item, modifying an existing item), traversing a dictionary, built-in functions: len(), dict(), keys(), values(), items(), get(), update(), del(), clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), count(), sorted(), copy(); suggested programs : count the number of times a character appears in a given string using a dictionary, create a dictionary with names of employees, their salary and access them ● Sorting techniques: Bubble and Insertion sort ● Introduction to Python	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to… ● to do programs by using dictionary with its various useful functions. ●know sorting techniques ●Know python modules and their uses

modules: Importing module using 'import ' and using from statement, Importing math module (pi, e, sqrt, ceil, floor, pow, fabs, sin, cos, tan); random module (random, randint, randrange), statistics module (mean, median,mode)		

MONTH & NO. OF WORKING DAYS : DECEMBER -26 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit III: Society, Law and Ethics ● Digital Footprints ● Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes ● Data protection: Intellectual Property Right (copyright, patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source softwares and licensing (Creative Commons, GPL and Apache) ● Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime ● Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying. ● Safely accessing web sites: malware, viruses, trojans, adware ● E-waste management: proper disposal of used electronic gadgets	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Know the impact of internet on society, ●Know law and ethics related to cyber world. ●Aware of Cyber Crime, Cyber Safety and Safely accessing the web sites. ●Know about information technology and Information Technology Act (IT ACT)

● Indian Information Technology Act (IT Act) ● Technology & Society: Gender and disability issues while teaching and using computers		

MONTH & NO. OF WORKING DAYS : JANUARY -15 DAYS

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

Informatics Practices

CLASS XI _ 2022-23

Code No. 065

Learning Outcomes :

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

- Identify the components of the Computer System.
- Create Python programs using different data types, lists and dictionaries.
- Explain what is 'data' and analyse using NumPy.
- Explain database concepts and Relational Database Management Systems.
- Retrieve and manipulate data in RDBMS using Structured Query Language
- Identify the Emerging trends in the fields of Information Technology.

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

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit 1: Introduction to Computer System and computing: Evolution of computing devices, components of a computer system and their interconnections, Input/Output devices. Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns. 2 Software: purpose and types – system and application software, generic and specific purpose software.	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Know about components of a computer system, input output devices, types of memories ● Know about type of software

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

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit 2: Introduction to Python Basics of Python programming, Python interpreter - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operators, precedence of	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Learn Python Basics

operators, data types, mutable and immutable data types, statements, expressions, evaluation of expressions, comments, input and output statements, data type conversion, debugging, control statements: if-else, for loop		

MONTH & NO. OF WORKING DAYS : JULY -24 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions.: len(), list(), append(), extend(), insert(), count(), find(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum() Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions: len(), dict(), keys(), values(), items(), get(), update(), clear(), del()	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Know list operations with its various useful functions

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

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit 3: Data Handling using NumPy Data and its purpose, importance of data, structured and unstructured data, data processing cycle, basic statistical methods for understanding data - mean, median, mode, standard deviation and variance. Introduction to NumPy library, NumPy arrays and their advantage, NumPy attributes, creation of NumPy arrays; from lists using np.array(), np.zeros(),	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Learn data handling using NumPy ● Learn Various mathematical and statistical operations with its various useful methods

np.ones(),np.arange() , indexing, slicing, and iteration; concatenating and splitting array; Arithmetic operations on one dimensional and two dimensional arrays. Calculating max, min, count, sum, mean, median, mode, standard deviation, variance on NumPy arrays.		

MONTH & NO. OF WORKING DAYS : SEPTEMBER -14 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit 4: Database concepts and the Structured Query Language Database Concepts: Introduction to database concepts and its need, Database Management System. Relational data model: concept of attribute, domain, tuple, relation, candidate key, primary key, alternate key, foreign key. Structured Query Language: Data Definition Language, Data Query Language and Data Manipulation Language.	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● know database concept (i.e. Database Management System) ● Know various keys constraints used in a database with their purposes.

MONTH & NO. OF WORKING DAYS : OCTOBER -17 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Introduction to MySQL: Creating a database, using database, showing tables using MySQL, Data Types : char, varchar, int, float, date Data Definition Commands: CREATE, DROP, ALTER (Add and Remove primary key, attribute). Data Query Commands: SELECT-FROM- WHERE, LIKE, BETWEEN, IN, ORDER BY, using	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● Create a database with various DDL queries ● Manage a database with various DML queries

arithmetic, logical, relational operators and NULL values in queries, Distinct clause Data Manipulation Commands: INSERT, UPDATE, DELETE.		

MONTH & NO. OF WORKING DAYS : NOVEMBER -24 DAYS

CHAPTER	METHODOLOGY	LEARNING OUTCOME
Unit 5: Introduction to the Emerging Trends Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.	● Lecture method ● Practical method ● Pictorial demonstration ● Discussion Method	The students will be able to... ● aware about various online activities, their management and their impact on our society

MONTH & NO. OF WORKING DAYS : DECEMBER -26 DAYS

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