SUBJECT – ENGLISH CORE

Month	Section	Content	Objectives/Aims
April & May		Bridge course	To prepare students for advanced studies
July	READING	Note Making and Summary	To develop the skill of making notes and summarizing the given passage along with vocabulary enhancement
	WRITING	Classified Ad	To convey needs and requirements in concise and precise way
		Speech/Debate	To develop skill of putting forth arguments both in favour and against the topic
	GRAMMAR	Error Correction	To develop the ability to write flawless language
	LITERATURE	The Portrait of a Lady	To point out relevance of strong relationship with elders
		The Summer of Beautiful White Horse	To know that essential goodness in a human being remains intact
		Photograph	To understand the transient nature of human life.
		Poem- Tale of a Melon City	To point out that misuse of power and lack of wisdom result in catastrophic situation.
	READING	Passages for Note Making	To develop the skill of making notes and summarizing
August	WRITING	Posters	To present topics of educational and social relevance aesthetically.
	GRAMMAR	Reordering of Sentences	To develop confidence and proficiency in the use of language skills
	LITERATURE	We're Not Afraid to Die…	To appreciate the importance of courage and determination in adverse circumstances
		Laburnum Top	To enable them to critically appreciate a poem
		Voice of the Rain	To appreciate the bounties of nature in the form of rain.
		Story -The Address	To explain the impact of war.
	READING	Passages for Comprehension & Note Making (revision)	Same as above
September	WRITING	Article Writing	To polish writing skills and critical thinking on a given topic.
	WRITING	Commercial ads	To develop the skill of brand promotion in a lucrative way.
	GRAMMAR	Editing Tasks	To develop the ability to identify the mistakes and correct them
	LITERATURE	Discovering Tut…	To point out the contribution of technology in studying past.
	READING	Passages for Note Making (practice)	Same as above
	WRITING	Business and Official Letters	To learn writing letters to civic authorities to address relevant issues
October	GRAMMAR	Error Correction	to use different grammatical structures in appropriate contexts.
	LITERATURE	Poem- childhood	To know the constraints of adult life.

	READING	Passages for Comprehension (practice)	Same as above
	WRITING	Speech Writing	To present ideas on a given issue in a convincing way.
November	WRITING	Posters	To present topics of educational and social relevance aesthetically.
	GRAMMAR	Revision	To develop confidence and proficiency in the use of language skills
	LITERATURE	Mother's Day	to focus on the dignity of mother.
	LITERATURE	P-Father to Son	To point out changing relationship between parents and children.
	READING	Revision & Practice	To develop confidence and proficiency in the use of language skills
	WRITING	REPORT WRITING	To acquaint students to write fact-based description.
December	GRAMMAR	Revision & Practice	To develop confidence and proficiency in the use of language skills
	LITERATURE	Story-6 Birth	To Know that persistent efforts bring result.
January & February		Revision	To develop confidence and proficiency in the use of language skills

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
READING SECTION: Note Making & Summary WRITING SECTION: Classified Ads, Speech GRAMMAR SECTION: Error Correction LITERATURE SECTION: L-1 The Portrait of a Lady, S-1, The Summer of a Beautiful White Horse P 1- A Photograph & P- The Tale of Melon City	READING SECTION: Comprehension Passage and Note Making & Summary Writing WRITING SECTION: Classified Ads, Posters, Speech, Debate GRAMMAR SECTION: Editing, Gap Filling & Jumbled Words LITERATURE SECTION L - The Portrait of a Lady, L- We're Not Afraid to Die..., L- Discovering Tut, S- The Summer of a Beautiful White Horse, S - The Address	READING SECTION: Comprehension Passage WRITING SECTION: Posters, Debate GRAMMAR SECTION: Editing & Jumbled Words LITERATURE SECTION: L- The Adventure, P- Childhood S - Mother's Day	READING SECTION: Comprehension Passage and Note Making & Summary Writing WRITING SECTION: Classified Ads, Posters, Speech, Debate GRAMMAR SECTION: Editing, Gap Filling & Jumbled Words LITERATURE SECTION: L - The Portrait of a Lady, L- We're Not Afraid to Die..., L- Discovering Tut, L- The Adventure, L- Silk Road, S- The Summer of a Beautiful White	READING SECTION: Comprehension Passage and Note Making & Summary Writing WRITING SECTION: Classified Ads, Posters, Speech, Debate GRAMMAR SECTION: Editing, Gap Filling & Jumbled Words LITERATURE SECTION: L - The Portrait of a Lady, L- We're Not Afraid to Die..., L- Discovering Tut, L- The Adventure, L- Silk Road, S-The Summer of a Beautiful White Horse, S - The Address, S- Mother's

	P-A Photograph, P - The Laburnum Top, P- The Voice of the Rain, P- Tale of Melon City		Horse, S - The Address, S- Mother's Day, S- Birth P-A Photograph, P -The Laburnum Top, P- The Voice of the Rain, P- Childhood, P- Father to Son, P- Tale of Melon City	Day, S- Birth P-A Photograph, P -The Laburnum Top, P- The Voice of the Rain, P- Childhood, P- Father to Son, P- Tale of Melon City
	Assessment of Speaking & Listening			Assessment of Speaking and Listening

SUBJECT – PHYSICS

Month	Name of the Chapter	Learning Objective/ Learning Outcomes	Practical / Activities
April	Ch-2 Units and Measurements Ch-3 Motion in a straight line	To learn the proper way to express the results of calculations and measurements including the appropriate dimensions. To study the motion of objects, calculation of the distance.	Ex.1. Diameter of small spherical body by Vernier Calipers. Act.1. To make paper scale of given L.C. 0.2 cm.
May	Ch-4 Motion in a plane	To analyze the tracks of elementary particles in two dimensions.	Ex.2. Diameter of small cylindrical body by Vernier Calipers.
July	Ch-5 Laws of Motion Ch-6 Work, Energy & Power	To study Newton's laws of classical mechanics which form the basis of our understanding of motion and its causes. To discuss energy in a more comprehensive way and generalize the law of conservation of energy which is one of the most useful laws of Physics.	Ex.3. Diameter of a wire by using screw gauge. Act.2. To make paper scale of given L.C. 0.5 cm.
August	Ch-7 Systems of Particles and Rotation Ch-8 Gravitation	To show that Newtons laws can be used to describe the motion of the center of mass of a complex system. To consider the general motion of a rigid body and to describe the rotation with appropriate variables and relating them to one another. To study the gravitational force and the law that describes the force, controls the structure, the development, and the eventual fate of the universe.	Ex.4. Thickness of a given sheet using screw gauge. Ex. 5. Mass of two different objects using beam balance.
September	Revision, Half Yearly examinations		
October	Ch-9 Mechanical properties of solids Ch-10 Mechanical properties of fluids	To study the properties of solids. To study the properties of fluids and the laws that govern them.	Ex.6.Weight of a given body using parallelogram law of vectors. Act.3. Variation of range of jet of water with angle of projection.
November	Ch-11 Thermal properties of matter Ch-12 Thermodynamics	To study the properties of matter due to transfer of heat. To discuss internal energy and another method for changing the energy of system.	Ex.7.Force constant of a helical spring. Ex.8.To plot L-T, L-T^2graph using simple pendulum. Act.4. To plot cooling curve of molten wax.
December	Ch-13 Kinetic Theory of Gases	To take a microscopic approach and seek to account for the macroscopic	Ex.9.Coefficient of viscosity of a viscous liquid.

	Ch-14 Oscillations	properties of a gas in terms of the properties of its molecules. To understand the concepts of SHM and its applications.	Ex.10. To study the relationship between a hot body and time by plotting a cooling curve. Act.5. Effect of heating on a bi-metallic strip.
January	Ch- 15 Waves	To study waves and the principles applicable on it.	Act.6. Factors affecting the rate of loss of heat of a liquid. Revision
February	Revision		

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Ch: 2, 3 & 4	Ch: 2 to 6	Ch: 9 & 10	Ch: 2 to 10	Ch: 2 to 15

SUBJECT – CHEMISTRY

Month	Name of the Chapter	Learning Objective/ Learning Outcomes	Practical / Activities
April	Ch-1 Some basic concept of chemistry	To understand mole concepts of chemistry.	Salt Analysis (gr 0)
May	Chapter 3. Periodic classification of element.	Periodicity. Filling of electrons in atomic orbitals.	Salt Analysis (gr 1)
July	Ch-2 Structure of Atom	Different models of atoms and shapes of orbital.	Salt analysis (Gp-2)
August	Ch-4 Chemical Bonding Ch-6 Thermodynamics	To learn theories of bonding, Laws of thermodynamics, Entropy	Titration and core experiments
September	Revision Half Yearly examinations		
October	Ch-7 Equilibrium Ch-8 Redox Reactions	To learn types of equilibrium, Acid and base concepts, Common ion effect. To learn balancing of Redox reactions, EMF of cell.	Salt analysis (Gp-3)
November	Ch-12 Organic Chemistry- Gen. Principles and properties	IUPAC naming and effects. Qualitative and quantitative analysis.	Salt analysis (Gp-4)
December	Ch-13 Hydrocarbons	To learn prop. of alkanes, alkene, alkynes.	Salt analysis (Gp-5,6)
January	Ch-13 Hydrocarbons	To learn prop. of aromatic hydrocarbon.	Revision
February	Revision		

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Ch: 1, 2	Ch: 1, 2, 3, 4, 6	Ch: 7, 8	Ch: 3, 4, 6, 8, 12	Complete Syllabus

SUBJECT – BIOLOGY

Month	Name of Chapter	Objective/Aim	Lab Activity
April	Ch-1 The living world	To make students understand and differentiate between Living and Non-living organism, classify different Living organism on the basis of hierarchy, familiarize with different Taxonomical Aids like Herbarium, botanical garden, Zoological Museum and facilitate.	1. To observe a video on various taxonomical aids 2. Group discussion on how these aids are helpful for biology students. 3.Classifying organisms on the basis of hierarchy.
	Ch-2 Biological Classification	Understand and describe about two, three, four, five kingdom classification. Understand and explain systematics under four heads- identification, classification Nomenclature, Taxonomy. Explain and comprehend the characteristic features of different kingdom.	1.To study different parts of microscope and its working 2.To observe different slides of the kingdom Monera and Protista and comment on it 3.To observe different specimens and slides of kingdom Fungi and comment on it
May	Ch-3 Plant Kingdom	Classify and describe plant kingdom under different divisions – thalophyta, brophyta, pteridophyta, gymnosperm and angiosperm.	1. To observe the different specimens of plant kingdom and comment on it 2.Spotting- To identify the given organism, classify, draw and write its significant characteristics
	Ch-4 Animal kingdom	Students will be able to learn, understand the concept and classify Animal kingdom under different phylum porifera, cnidaria, ctenophore, platyhelminthes, aschelminthes, annelid, mollusca, arthropoda, echinodermata, chordata.	1. To observe the different specimens of the animal kingdom and comment on it . 2.Spotting- To identify the given organism, classify, draw and write its significant characteristics
	Ch-5 Morphology of flowering plants	Enable the students to know and understand the morphology & modifications Root, Stem, leaf, Inflorescence, Flower, Parts of a flower, Fruit, Seed, Structure of dicot & monocotyledonous seed. Students will be able to understand & describe flower parts, write floral formula with floral diagrams.	Study and describe locally available common flowering plants, from family Solanaceae (Poaceae, Asteraceae or Brassicaceae can be substituted in case of particular geographical location) including dissection and display of floral whorls, anther and ovary to show number of chambers (floral formulae and floral diagrams), type of root (tap

			and adventitious); type of stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound).
July	Ch-6 Anatomy of flowering plants	To provide students with knowledge of the tissues, meristematic and permanent tissues, monocotyledonous and dicotyledonous plants, secondary growth in plants monocotyledonous and dicotyledonous plants, secondary growth in plants.	Preparation and study of T.S. of dicot and monocot roots and stems (primary).
	Ch-7 Structural organization in animals	Students will be able to understand Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.	To observe the structure of frog through specimen.
August	Ch-8 Cell: Structure and Function	To make them comprehend and to connect with the earlier understanding s about the cell and its organelle, Cell theory and its different Discoveries and inventions of Cell, differentiate between prokaryotic and eukaryotic; unicellular and multicellular.	To observe the structure of cell Study of distribution of stomata on the upper and lower surfaces of leaves. Comparative study of the rates of transpiration in the upper and lower surfaces of leaves.
	Ch-9 Biomolecules	To make them understand about the Primary and Secondary metabolites. To make them understand about the structure and function of different Bio macromolecules and enzymes	1. To prove heat destroys the activity of enzymes and not the catalyst. 2. To prove that change of pH inhibits the enzyme activity. 3. To test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.
September	HALF YEARLY EXAMINATION		
October	Ch-10 Cell Cycle and Cell Division	To explain the importance of cell division To make them understand about the various stages of Mitosis in cell and relate with various examples of cell division Differentiate between amitosis and mitosis. To make them understand the various phases of meiotic cell division of Meiosis I & II and relate it with the gamete formation in gonads.	1.To observe the different stages of meiosis through permanent slides 2. To prepare the onion root tip slide and to observe different stages of mitosis.

	Ch-13 Photosynthesis in Higher Plants	To make them understand update with the Early Experiments To explain and make them understand the structure of chloroplast where Light reaction takes place, mechanism of Light reaction, aware and understand about Electron Transport System	1.To observe the effect of light in photosynthesis 2.To observe the stomata in the lower and upper epidermis of leaf and find the stomatal index 3.To detect the formation of starch in different leaves 4.To prove the presence of chlorophyll by paper chromatography
November	Ch- 14 Respiration in plants	To make them differentiate between Fermentation/Anaerobic and Aerobic respiration.	1.To compare the rate of respiration in germinating seeds (carbohydrate, proteins and fats) 2. To prove anaerobic respiration takes place in yeast. (Alcohol fermentation) 3. To prove CO_2 is given out during respiration (aerobic)
	Ch-15 Plant - Growth and Development	To make the student understand about growth and Development, Differentiation, Dedifferentiation and Re-differentiation, Plant growth regulators and their function, differentiate between Photoperiodism and Vernalisation	1. To observe phototrophism in plants 2. To observe chemotrophism –growth of pollen tube in stigma.
	Ch-17 Breathing and Exchange of Gases	To make them understand and differentiate the concept of breathing and respiration. To educate them with the Disorders of respiratory system.	To prove lime water turns milky during exhalation.
December	Ch-18 Body Fluids and circulation.	Students will know and understand all the components of human circulatory system, Mechanism of coagulation of blood, Concept of human blood group, describe circulatory pathways, describe cardiac cycle, understand electrocardiograph	
	Ch-19 Excretory products and their elimination	Students will be able to: Explain the purpose of the kidneys, bladder, and urethra. Describe the excretory system. Demonstrate an understanding of the path of the excretory system	To test the presence of urea, sugar, albumin, bile salts in urine.
	Ch-20 Locomotion and Movement	To understand different types of bones associated with various movement, mechanism of muscle contraction Skeletal	1. Study of different types of bones and cartilage of human body by models.

		System, working of various joints, cause of different Muscular Disorders	2. To identify different bones of skull vertebral column, sternum, girdles, Forelimb and Hind limb from the human skeleton and comment on it. 3. Role play of synovial joints with various day to day life activities
January	Ch-21 Neural control and Coordination	To familiarize with different parts of Neural System, study different parts of brain and their function. To explore about Reflex Action and Arc, conduction of nerve impulse with diagram. Appreciate the importance of different Endocrine glands and the hormones they secrete.	To observe sudden withdrawal of body on coming in contact with hot, cold or pointed objects, jerking of knee when hit below knee cap, Watering of mouth by seeing delicious food.
	Ch-22 Chemical Coordination and Integration	To apply the learning to determine the effect of hypo and hyper secretion of hormones from different glands.	A case study on any disease caused due to hypo or hyper hormonal imbalance in your family/neighbor.

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Ch: 2, 3, 4, 5	Ch: 1 to 9	Ch: 10, 14, 15, 17	Ch: 13, 18, 19, 20	Complete Syllabus

SUBJECT – MATHEMATICS

Month	Ch. No.	Chapters Name	Learning Objectives/Outcomes	Activities
April	3	Trigonometric Function	To know trigonometric functions using unit circle, identities, formulas, and their application.	
	10	Straight Lines	To use algebra advantageously in study of straight line, their slopes and their properties.	
May	1	Sets	To know about sets, sub- sets, and their representation, Venn diagrams, operations on sets, practical problems on Union and Intersection.	To verify operations on sets using venn diagrams.
July	2	Relations And Functions	To know ordered pair, Cartesian product, relations, functions, domain, co-domain, range, and graphs of different functions.	To find the no. of relations from set A to B.
	5	Complex Numbers & Quadratic Equations	To make clear about complex numbers and real numbers, operations on complex numbers and multiplicative Inverse, conjugate, modulus, and their properties.	To differentiate between function and relation.
August	6	Linear Inequalities	To make clear about the symbols less than, more than use in inequality, meaning of at least and at most, solution of inequality algebraically and graphically, word problems.	To find out the solution of linear inequations graphically
	7	Permutations & Combinations	To understand the concept of fundamental principle of counting, factorial notation, permutations and combination and their properties with daily life examples	
September	8	Binomial Theorem	Binomial expansion for a given positive integral power	To construct a pascal triangle and to write binomial expansion for a given positive integer power
	Revision For Half Yearly Exams			
October	9	Sequences And Series	To Know about the sequence, Arithmetic and geometric progressions.	
November	11	Conic Section	To learn about the intersection of a plane with a double napped cone right circular cone results in different types of the curve.	To construct an ellipse
	12	Three Dimensional Geo.	To extend the knowledge of two-dimensional geometry to three-dimensional geometry.	
December	13	Limits & Derivatives	To find out the limits and derivatives of different functions	
January	15	Statistics	To learn about the important measures of dispersion and their methods of calculation for ungrouped and grouped data.	

	16	Probability	To know about the basic terms, for random experiments with different cases to interpret the probability.	To find the sample space of (i) dices (ii) coins.
February	Revision			

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Ch: 3, 10	Ch: 1, 2, 3, 5, 6, 7, 8, 10	Ch: 9, 11	Ch: 12, 13	Complete Syllabus

SUBJECT – COMPUTER SCIENCE WITH PYTHON

Month	Chapter Name	Objective / Aim	Lab Activity
April	Ch – 1 Computer System Organization	Description of a computer system and mobile system, CPU, memory, hard disk, I/O, Types of software, OS, utility, libraries, Language of Bits: bit, byte, MB, GB, TB, and PB. Execution of a program, Interpreters, Compiler and an interpreter, how an operating system runs a program, idea of loading, operating system as a resource manager, Concept of cloud computers, cloud storage (public/private), and brief introduction to parallel computing.	Introduction to Python environment • Interactive Mode • Script Mode • Operators & Operands
May	Ch – 2 Data Representation & Boolean Logic	Information representation: numbers in base 2, 8, 16, unsigned integers, binary addition, Strings: ASCII, UTF8, UTF32, ISCII (Indian script code), Boolean logic: OR, AND, NAND, NOR, XOR, NOT, truth tables, De Morgan's laws	Basic Programs of Python: • Add 2 numbers. • Make a simple calculator. • Calculate total & percentage of a student.
July	Ch – 3 Computational Thinking & Getting Started with Python Ch –4 Python Programming Fundamentals	Introduction to problem solving, Steps for problem solving, Algorithms, Flowcharts, Pseudocode, computational thinking & its components, Familiarization with the basics of Python, features, advantages, disadvantages, how to install python, Python IDLE, Exiting Python. Variables, Multiple assignments, Keywords, expressions, Operators & its types, User Defined Functions, Indentation, Tokens, Comments process of writing a program, running it, and print statements; simple datatypes: integer, float, string	Basic Programs of Python: • Swap the values of two variables. • Conversion of Celsius to Fahrenheit & vice -versa. • Conversion of units of measurement. Basic Programs of Python: • To calculate the area & perimeter of various shapes. • Conversion from amount-in-dollars and dollar-to-rupee.
August	Ch – 5 Conditional & Looping Constructs Ch – 6 Strings in Python	Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, and divisibility. Notion of iterative computation and control flow: for, while, Nested loop, jump Statements- break, continue & pass. Strings: compare, concatenation, substring; various string operations & functions.	Basic Programs of Python: • Print numbers from 1 to 100. • Print the table of a given number. • Check for Palindrome, Armstrong number. • Print Fibonacci Series Basic Programs of Python: • Reverse a string. • Check whether a string is palindrome or not. • Count the occurrence of a character in a string.

September	Half Yearly Examinations		
October	Ch – 7 Lists in Python Ch – 8 Tuples and Dictionary	Lists: finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary. Introduce the notion of accessing elements in a collection using numbers and names. Tuples and dictionary: finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary. Introduce the notion of accessing elements in a collection using numbers and names.	Basic Programs of Python: • Enter elements in a list and find the sum. • Find the minimum & maximum element in a list/tuple. • Input a list of numbers and swap elements at the even location with the elements at the odd location. • Input a list/tuple of elements, search for a given element in the list/tuple. • Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have scored marks above 75.
November	Ch – 9 Introduction to Python Modules Ch – 10 Society, Law & Ethics	Importing module using import statement/ from statement, importing math module, random module, statistics module. Digital Footprints, Digital society & Netizen, Data Protection, Intellectual Property Rights, its violation, Cyber crime	Basic Programs of Python: • Create a module Area and define functions to find the area of circle, square, rectangle etc. Import the module and calculate the area of a shape.
December	Ch – 11 Cyber Safety	Cyber safety: safely browsing the web, identity protection, confidentiality, social networks, cyber trolls and bullying, Appropriate usage of social networks: spread of rumors, and common social networking sites (Twitter, LinkedIn, and Facebook) and specific usage rules, safely accessing web sites: adware, malware, viruses, Trojans, safely communicating data: secure connections, eavesdropping, phishing and identity verification, IT Act, 2000, E-Waste management.	• Revision of all the programming concepts.
PROJECT: The aim of the class project is to create something that is tangible and useful using Python file handling/Python-SQL connectivity. This should be done in groups of two to three students. The aim here is to find a real-world problem that is worthwhile solving. Students will choose a topic and prepare synopsis on the topic.			

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Ch – 1, 2 & 3	Ch – 1 to 5	Ch – 6, 7, 8	Ch – 4 to 9	Complete Syllabus

SUBJECT – INFORMATICS PRACTICES

Month	Unit Name	Chapter Name	Objective / Aim	Lab Activity
April	Unit 1: Introduction to Computer System	Introduction to Computer System	Introduction to computers 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.	Identify the components of the Computer System.
May	Unit 2: Introduction to Python	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 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	1.To find average and grade for given marks. 2. To find sale price of an item with given cost and discount (%). 3. To calculate perimeter/circumference and area of shapes such as triangle, rectangle, square and circle. 4. To calculate Simple and Compound interest. 5. To calculate profit-loss for given Cost and Sell Price. 6. To calculate EMI for Amount, Period and Interest. 7. To calculate tax - GST / Income Tax.
July		List	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()	8. To find the largest and smallest numbers in a list. 9. To find the third largest/smallest number in a list. 10. To find the sum of squares of the first 100 natural numbers. 11. To print the first ‘n’ multiples of given number. 12. To count the number of vowels in user entered string. 13. To print the words starting with a alphabet in a user entered string. 14. To

				print the number of occurrences of a given alphabet in each string.
August		Dictionary	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()	15. Create a dictionary to store names of states and their capitals. 16. Create a dictionary of students to store names and marks obtained in 5 subjects. 17. To print the highest and lowest values in the dictionary.
September	Half Yearly Examinations			
October	Unit 3: 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, 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 arithmetic, logical, relational operators and NULL values in queries, Distinct clause Data Manipulation Commands: INSERT, UPDATE, DELETE.	19. To create student table with the student id, class, section, gender, name, dob, and marks as attributes where the student id is the primary key. 20. To insert the details of at least 10 students in the above table. 21. To display the entire content of table. 22. To display Rno, Name and Marks of those students who are scoring marks more than 50. 23. To find the average of marks from the student table. 24. To find the number of students, who are from section 'A'. 25. To display the information all the students, whose name starts with 'AN' (Examples: ANAND, ANGAD,..) 26. To display Rno, Name, DOB of those students who are born between '2005- 01-01' and '2005-12-31'. 27. To display Rno, Name, DOB, Marks, Email of those male students in ascending order of their names. 28. To display Rno, Gender, Name, DOB,

				Marks, Email in descending order of their marks. 29. To display the unique section available in the table.
November	Unit 4: 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.	● Identify the Emerging trends in the fields of Information Technology.
December	Revision			
January	Revision			

Exam Syllabus

Unit Test I	**Half Yearly**	**Unit Test II**	**Qualifying**	**Annual**
Unit 1: Introduction to Computer System Unit 2: Introduction to Python	Unit 1: Introduction to Computer System Unit 2: Introduction to Python List, Dictionary	Unit 3: Database Concepts and The Structured Query Language	Unit 2: Introduction to Python List, Dictionary Unit 3: Database Concepts and The Structured Query Language	Complete Syllabus

SUBJECT – ARTIFICIAL INTELLIGENCE

Month	Unit Name	Chapter Name	Sub-Unit	Learning Outcomes
July	PART-A: Employability Skills	Unit 1: Communication Skills-III		Students will be able to Understand meaning and importance of stress management & Apply stress management techniques.
		Unit 2: Self-Management Skills-III		Students will be able to demonstrate impressive appearance and grooming, teamwork skills and apply time management strategies and techniques.
	PART-B – Subject Specific Skills	Unit 1: Introduction To AI	• What is AI? • What is Machine Learning • What is data? • Terminology and Related. Concepts • What machine learning can and cannot do. • Jobs in AI	Students will be able to: • Understand what is AI? • Difference between conventional programming and machine learning. • Structured and Unstructured data. • What are the AI products/ applications in society and how are they different from non-AI products/ applications? • Different types of machine learning approach. • Understand what the jobs that are growing with AI are.
August	PART-A: Employability Skills	Unit 3: ICT Skills-III		Students will be able to create a document, edit the data, change the style of data, adding bullets, word wrap, autocorrect option and printing any document in Word processor.
	PART-B: Subject Specific Skills	Unit 2: AI Applications and Methodologies		Students will be able to understand: • Key Fields of Application in AI. • Characteristics and types of AI. • Cognitive Computing (Perception, Learning, Reasoning). • AI and Society. • The Future with AI, and AI in Action. • Non-technical explanation of deep learning.
		Unit 3: Math for AI		Students will be able to: • Appreciate the role of mathematics in AI and ML. • Linear Algebra, Statistics, Basics of Graphs and Set theory • Visual representation of data, bar graph, histogram, frequency bins, scatter plots, etc. • With co-ordinates and graphs introduction to dimensionality of data.
		Unit 4: AI Values (Ethical decision making)		Students will be able to understand: • AI: Issues, Concerns and Ethical Considerations • Issues and Concerns around AI • AI and Ethical Concerns • AI and Bias • AI: Ethics, Bias, and Trust • Employment and AI
September	Revision and Half Yearly Examination			
October	PART-A: Employability Skills	Unit 4: Entrepreneurial Skills-III		Students will be able to establish a foundation of confidence in the skills necessary to cause others to act.

	PART-B: Subject Specific Skills	Unit 5: Introduction to story telling		Students will be able to understand: •Storytelling: communication across the ages. • The Need for Storytelling • Story telling with data • Storytelling for audience • How to Keep the audience engaged
		Unit 6: Critical and Creative thinking		Students will be able to use Design thinking framework, Right questioning (5W and 1H), Identifying the problem to solve and ideate.
November	PART-B: Subject Specific Skills	Unit 7: Data Analysis		Students will be able to represent a simple problem in terms of numbers. Gain Knowledge on – Types of structured data, statistical principals – frequency tables, mean, median, mode, range, etc. graphical Application will be used for Representing data in terms of graphs, statistical models.
		Unit 8: Regression		Making students able to relate data with regression and correlation. Everyday applications of these mathematical concepts. – Correlations, Regression, and other related terms.
December	PART-A: Employability Skills	Unit 5: Green Skills-III		Understand the basic sustainability concepts of homeostasis, carrying-capacity, and cradle-to-grave recycling, evolutionary processes.
	PART-B: Subject Specific Skills	Unit 9: Classification & Clustering		Students will be able to understand confusion matrix- True positives, true negatives, false positives and false negatives cases. Understanding Impact of the application of incorrect algorithms on society.
January	PART-B: Subject Specific Skills	Unit 10: AI Values (Bias awareness)		Student will be able to understand: • AI working for good. • Principles for ethical AI. • Types of bias (personal /cultural /societal). • How bias influences AI based decisions. • How data driven decisions can be debiased. • Hands on exercise to Detect the Bias.
February	Revision and Annual Examination			

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Part A: Unit 1: Communication Skills-III Part B: Unit 1: Introduction to Artificial Intelligence (AI)	Part A: Unit 1: Communication Skills-III Part A: Unit 2: Self-Management Skills-III Part A: Unit 3: ICT Skills-III Part B: Unit 1: Introduction to Artificial Intelligence (AI)	Part A: Unit 4: Entrepreneurial Skills-III Part B: Unit 5: Introduction to storytelling.	Part A: Unit 1: Communication Skills-III Part A: Unit 2: Self-Management Skills-III Part A: Unit 3: ICT Skills-III Part A: Unit 4: Entrepreneurial Skills-III Part B: Unit 1: Introduction to	Part A: Unit 1: Communication Skills-III Part A: Unit 2: Self-Management Skills-III Part A: Unit 3: ICT Skills-III Part A: Unit 4: Entrepreneurial Skills-III Part A: Unit 5: Green Skills-III

	Part B: Unit 2: AI Applications & Methodologies Part B: Unit 4: AI Values (Ethical Decision Making)		Artificial Intelligence (AI) Part B: Unit 2: AI Applications & Methodologies Part B: Unit 4: AI Values (Ethical Decision Making) Part B: Unit 5: Introduction To Storytelling	Part B: Unit 1: Introduction To AI Part B: Unit 2: AI Applications & Methodologies Part B: Unit 4: AI Values (Ethical Decision Making) Part B: Unit 5: Introduction To Storytelling Part B: Unit 8: Regression

SUBJECT – PSYCHOLOGY

Month	Name of Chapter	Objective/ Aim	Enrichment Activity	Project
April	Ch-1 What is Psychology?	After studying this chapter students would be able to: i. Develop the understanding of role mind and behavior. ii. Explain the different fields of Psychology, its discipline, and professions. iii. Develop the understanding of value of psychology in daily life to understand themselves and others better.		
May	Ch-2 Methods of enquiry	After studying this chapter students would be able to: i. Explain the goal and nature of psychological enquiry. ii. Explain the important methods of psychological enquiry. iii. Develop the understanding about the limitations of psychological enquiry and ethical considerations.		Students will prepare project by using different methods of psycho logical enquiry.
July	Ch-4	After studying this chapter students would be able to: i. Explain the meaning and process of development. ii. Explain and identify the stages of development and describe the major characteristics of infancy, childhood, Adolescence, adulthood, and old age		
August	Ch-5 Sensory Attentional and Perceptual Processes	After studying this chapter students would be able to: i. Develop the understanding of the nature of sensory processes. ii. Explain the types and process of attention. iii. Develop the understanding of the role of socio-cultural factors in perception.		
September	Ch-6 Learning	After studying this chapter students would be able to: i. Develop an understanding of the nature and features of learning. ii. Explain the types of learning. iii. Acquainted with the leaning principles.		
October	Ch-7 Memory	After studying this chapter students would be able to: i. Develop the understanding of the nature of memory. ii. Develop an understanding of nature and causes of forgetting. iii. Develop the skills for improving memory.	Experiment on methods of verbal Learning.	

November	Ch-8 Thinking	After studying this chapter students would be able to: - Understand the nature of thinking and Reasoning. - Understand the nature and process of creative thinking and learn the ways of enhancing it. - Understand the relationship between language and thought.	Experiment based on Memory processes.	
December	Ch-9 Motivation and Emotion	After studying this chapter students would be able to: - Understand the nature of human motivation. - Describe the nature of some important motives. - Describe the nature of emotional expression. - Students will get to know about managing emotions.		

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Ch. 1, 2	Ch. 4, 5	Ch. 1 to 6	Ch. 1 to 8	Complete Syllabus

SUBJECT – COMMERCIAL ART

Month	Theory	Practical	Learning Objectives
May	Unit 1: Pre-historic Roack Paintings and Art of Indus Valley (2500 B.C. to 1500 B.C.) 1 A. Pre-Historic Rock-Paintings Introduction (1) Period and Location (2) Study of following Pre-historic Paintings	Fundamentals of art,	The objective of including the history of prehistoric art for the students is to familiarize them with the various styles and modes of art expression. This would enrich their vision and enable them to appreciate and aesthetic sensibility to enjoy the beauty of nature and life.
July	Unit 1: B. Introduction (i) Period and Location. (2) Study of Sculptures and Terracottas: Unit 2: Buddhist, Jain and Hindu Art (3rd century B.C. to 8th century A.D.) (1) General Introduction to Art during Mauryan, Shunga, Kushana Gandhra and Mathura style & Gupta period: (2) Study of Sculptures:	Still life composition	The objective of including the history of Indus Valley and Religion's art for the students is to familiarize them with the various styles and modes of art expression. This would enrich their vision and enable them to appreciate and aesthetic sensibility to enjoy the beauty of nature and life.
August	Recapitulation of Unit 1 & Unit-2 (2) Study of Sculptures:	Calligraphy and texture	
September	(3) Introduction to Ajanta Location, period, No. of caves, Chaitya and Vihara, Paintings and Sculptures, subject matter, and technique etc. (4) Study of Painting & Sculpture:	Poster masking	The objective of including the history of Ajanta art for the students is to familiarize them with the various styles and modes of art expression. This would enrich their vision and enable them to appreciate and aesthetic sensibility to enjoy the beauty of nature and life.
October	Unit 3: Temples Sculpture, Bronzes and Artistic aspects of Indo-Islamic Architecture 36 Pds. (A) Artistic aspects of Indian Temple sculpture 6th Century A.D. to 13th Century A.D.) (1) Introduction to Temple Sculpture (6th Century A.D. to 13th Century A.D.) (2) Study of Temple-Sculptures.	Indian folk art	The objective of including the history of Indian temples art for the students is to familiarize them with the various style and modes of art expression. This would enrich their vision and enable them to appreciate and aesthetic sensibility to enjoy the beauty of nature and life.
November	B) Bronzes: (1) Introduction to Indian Bronzes (2) Method of casting (solid and hollow) (3) Study of south Indian Bronzes:	Master copies	The objective of including the history of Chola art for the students is to familiarize them with the various styles and modes of art expression. This would enrich their vision and enable them to appreciate and

			aesthetic sensibility to enjoy the beauty of nature and life.
December	(C) Artistic Aspects of the Indo-Islamic Architecture (1) Introduction (2) Study of architectures:	Revision	The objective of including the history of Indo Islamic art for the students is to familiarize them with the various style and modes of art expression. This would enrich their vision and enable them to appreciate and aesthetic sensibility to enjoy the beauty of nature and life.

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Fundamentals of Art, Pre-Historic Rock Paintings, Indus Valley Civilization and its artistic aspects	Buddhist and Jain and Hindu Art. Ajanta Caves location, technique and painting and sculpture.	Indian Temple Architecture and Sculpture, Indian Bronzes- Nataraj and Devi.	Complete Syllabus	Complete Syllabus

SUBJECT – HOME SCIENCE

Month	Name of Chapter	Objective/ Aim	Enrichment Activity	Project
April	CH-1 Introduction to Home Science Ch-2 Understanding the Self Ch-3 Food, Nutrition, Health and Fitness	-Understand different areas of home science and its scope -discuss the importance of knowing oneself and the significance of developing a positive sense of self. -list the factors that influence the development of selfhood and identity. -define the terms — food, nutrition, nutrients, health, fitness and the role of food and nutrition in maintaining health. -understand the basis for defining the Recommended Dietary Allowances (RDAs) and the difference between Dietary Requirement and RDA.	Students will write a detailed report on different domains of development related to themselves	
May	Ch-4 Management of Resources Ch-5 Fabrics Around Us	-discuss the concept of a resource. -identify various resources. -discuss the diversity in fabrics. -name and classify the fabrics commonly seen around.	Students will make handloom miniature.	Project work- Different types of fabrics (light, medium and heavy)
July	Ch-6 Media and Communication Ch-7 A. Nutrition, Health and Hygiene	-define the concept of communication. -discuss the significance of communication in everyday life -discuss the importance of health and its dimensions. -understand the interrelationship of nutrition and health.	Group activity related to different types of communication	
August	Ch-7 B. Resource Availability and Management Ch- 8 Survival, Growth and Development	-describe time and space as important resources. - analyze the need for managing time and space. -explain the concepts of survival, growth, and development. -analyze the relationship between growth and health. -make suggestions for planning balanced meals for children	Time plan	
September	Ch-9 Nutrition, Health and Wellbeing	-describe the nutritional needs of children at different stages of development.	Flow chart on Food Guide Pyramid	

October	Ch-10 Our Apparel Ch- 11 Health and Wellness	-discuss the clothing functions and the factors influencing selection of clothes. -identify general clothing needs of the children. -discuss the importance of health and fitness. -explain the health concerns and challenges of adults.	Flip book on selection of clothing	
November	Ch- 12 Financial Planning and Management	-understand the meaning and concept of financial management. -know the different types of income.	Budget making	
December	Ch- 13 Care and Maintenance of Fabrics	-understand the aspects of care and maintenance of different fabrics. -know the procedure of removing different stains.	Different stain removal activity	
January	Revision for Annual Exam			
February	Annual Exam			

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Ch. 1, 2, 3	Ch. 4, 5, 6	Ch. 1 to 8	Ch. 1 to 10	Complete Syllabus

SUBJECT – HINDUSTANI MUSIC VOCAL

Month	Name of the Topic	Objective/ Aim	Lab Activity/ Enrichment Activity	Project
April	Basics of raag & taal Alankar & teen taal	Explain the basic terms of Indian classical music.	Sargam practice in different laya in practical class.	
May	Raag Vihag General Introduction Aroh Avroh palta $ Swar vistar Teen taal on hand.	Introduction of raag, & taal.	Sargam geet practice in raag & Basic Knowledge of taal on hands in practical class.	
July	Raag Vihag drut Khayal with Alap - taan teen taal thah, dugun chargun laykari on hands. Brief Description - Naad, Shruti, Swar, Saptak,MargeeGaan	Explain raag with notation. Taal on hands in different layakari. Knowledge of basic terms of Indian classical music.	Practice of raag & taal in detail.	
August	Raag Vihag -notation with alap taan. Raag Bhimpalasi parichay Teen taal with thah dugun & chargun laykari and taal notation. Life sketch Tansen. Dhrupad.	Introduction of bhimpalasi raag and explain raag in detail. To show different laya on hands. To know about the contribution of indian classical musician.	Practice of raag & taal in detail.	
September	Raag Bhimpalasi drut Khayal with Alap –taan Ek Taal thah & dugun on hands & taal lipi	To give knowledge of raag bhimpalasi. Explain ektaal in different laya and practice to write it.	Practice of raag & taal in detail.	
October	Raag Bhimpalasi Notation with Alap taan EkTaal thah, dugun, chargun on hands $ taal lipi Brief Description of that, laya, raag, raag jati,khayal, Thaat, life sketch V.N Bhathkhende,	To give knowledge raag & taal. To give knowledge of basic terms of Indian music and contribution of Indian musician	Practice of raag & taal in detail.	
November	Raag Bhairvi Parichay & Drut khayal, taal char taal thah & taal lipi. Brief Description - taal,tarana,sangeet Natyeshastr, Life sketch V.N Palusker, Tanpura sachitr varna	Description of raag & taal through drut khyal and taal notation. Know about the life history & contribution of musicians. Explain the structure of tanpura.	Practice of raag & taal in detail.	
December	Raag Bhairvi Notation, char taal thah, dugun chargun with taal lipi, raag pehchaan $ Bhairvee Alap -Taan	To know about the raag & taal in detail .	Practice of raag & taal in detail.	

January	Vilambit khayal /dhrupad bandish with Notation Revision of previous ragas & taal.	Explain dhrupad singing style with bandish.	Practice of raag & taal in detail.	Music practical file.
February	Vilambit khayal/dhrupad with alap /laykaree. Annual Exam	Discuss & explain raag drut khyal , dhrupad & taal.	Practice of raag & taal in detail.	

Exam Syllabus

Unit Test I	Half Yearly	Unit Test II	Qualifying	Annual
Naad,Shruti, swar, Saptak, Margee gaan, Dhrupad, Tansen, Teen taal thah, dugun chargun parichay & taal lipi, Ektaal parichay thah laya. Raag vihag parichay, pehchaan, drut khayal, Raag Bhimpalasi Parichay.	Raag Vihag drut Khayal with Alap & taan drut khayal with alap taan teen taal thah, dugun chargun laykari on hands. Brief Description - Naad, Shruti, Swar, margee gaan,Saptak, raag pehchaan Raag Vihag-notation with alap taan, raag Bhimpalasi Parichay ektaal Parichay, taal lipi life sketch of Tansen Raag & Taal parichay Dhrupad. Raag Bhimpalasi drut Khayal with Alap -taan	Raag Bhimpalasi Notation With Alap taan EkTaal thah, dugun, chargun on hands & taal lipi . Brief Description thaat, laya, raag, raag jati, khayal. Life sketch - V.N Bhathkhende, V. N Palusker, tanpure ka sachitr varnan, Raag Bhairvi Parichay & Drut khayal, taal char taal thah & taal lipi, Brief Description - taal,tarana,sangeet Natyeshastra, Raag Bhairvi Notation, char taal thah, dugun chargun with taal lipi, raag pehchaan & Bhairvee Alap - Taan	Raag Bhimpalasi Notation With Alap taan, Brief Description thaat, laya, raag, raag jati,khayal. life sketch- V.N Bhathkhende, V. N Palusker, tanpure ka sachitr varnan, Raag Bhairvi Parichay & Drut khayal, Raag Bhairvi notation, Bhairvee Alap – Taan char taal thah, dugun chargun with taal lipi, Brief Description - taal,tarana,sangeet Natyeshastra, raag pehchaan & Vilambit khayal /dhrupad bandish with Notation.	Raag Bhimpalasi Notation With Alap taan, Brief Description thaat, laya, raag, raag jati,khayal. life sketch- V.N Bhathkhende, V. N Palusker, tanpure ka sachitr varnan, Raag Bhairvi Parichay & Drut khayal, Raag Bhairvi notation, Bhairvee Alap – Taan char taal thah, dugun chargun with taal lipi, Brief Description - taal,tarana,sangeet Natyeshastra, raag pehchaan & Vilambit khayal /dhrupad bandish with Notation.