ST. MARK'S SR. SEC. PUBLIC SCHOOL, JANAKPURI
CLASS XI
SYLLABUS (2024-2025)

ENGLISH

MID-TERM EXAMINATION

Reading Skills – Long reading comprehension and Note making.
Hornbill – The Portrait of a Lady; We're not Afraid to Die…If We Can All Be Together; Discovering Tut – The Saga Continues.
Poems – A Photograph; The Laburnum Top.
Snapshots – The Summer of the Beautiful White Horse; The Address
Grammar –Rearranging of words or phrases into meaningful sentences; Transformation of sentences; Gap Filling (Tenses and Clauses)
Writing Skills –Classified Advertisements, Poster, Speech, Debate

FINAL-TERM EXAMINATION

Reading Skills – Long reading comprehension and Note making.
Hornbill – The Adventure, Silk Road.
Poems -The Voice of the Rain; Childhood; Father to Son.
Snapshots – Mother's Day; Birth ; The Tale of Melon City
Grammar- Rearranging of words and phrases into meaningful sentences; Transformation of sentences; Gap Filling (Tenses and Clauses)
Writing Skills − Classified Advertisements, Poster, Speech, Debate (+ Entire Syllabus of Mid Term Examination and Project work)

CHEMISTRY

MID-TERM EXAMINATION

Unit I: Some Basic Concepts of Chemistry
General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.

Unit II: Structure of Atom
Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals.

Unit III: Classification of Elements and Periodicity in Properties

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.

Unit IV: Chemical Bonding and Molecular Structure

Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules(qualitative idea only), Hydrogen bond.

FINAL-TERM EXAMINATION

1. Some Basic Concepts of Chemistry
2. Structure of Atom
3. Classification of Elements and Periodicity in Properties
4. Chemical Bonding and Molecular Structure
5. Chemical Thermodynamics
6. Equilibrium
7. Redox Reactions
8. Organic Chemistry: Some basic Principles and Techniques
9. Hydrocarbons

**ALL CHAPTERS TO BE INCLUDED IN
FINAL TERM EXAM.**

BIOLOGY

MID-TERM EXAMINATION

Unit-I Diversity of Living Organisms

Chapter-1: The Living World

Chapter-2: Biological Classification

Chapter-3: Plant Kingdom

Chapter-4: Animal Kingdom

Unit-II Structural Organization in Animals and Plants

Chapter-5: Morphology of Flowering Plants

Chapter-6: Anatomy of flowering Plants (to be assessed through practicals only)

Chapter-7: Structural Organisation in Animals

Unit-III Cell: Structure and Function

Chapter-8: Cell-The Unit of Life

Chapter-10: Cell Cycle and Cell Division

FINAL-TERM EXAMINATION

Unit-III Cell: Structure and Function
   Chapter-9: Biomolecules

Unit-IV Plant Physiology
   Chapter-11: Photosynthesis in Higher Plants
   Chapter-12: Respiration in Plants
   Chapter-13: Plant - Growth and Development

Unit-V Human Physiology
   Chapter-14: Breathing and Exchange of Gases
   Chapter-15: Body Fluids and Circulation
   Chapter-16: Excretory Products and their Elimination
   Chapter-17: Locomotion and Movement
   Chapter-18: Neural Control and Coordination
   Chapter-19: Chemical Coordination and Integration
AND ENTIRE MID TERM SYLLABUS

POLITICAL SCIENCE

MID-TERM EXAMINATION

PART A : INDIAN CONSTITUTION AT WORK

1. Constitution: Why and How?
2. Rights in the Indian Constitution
3. Election and Representation
4. Executive
5. Legislature

6. Judiciary
7. Federalism
8. Local Governments
9. Constitution as a Living Document
10. The Philosophy of the Constitution
Class discussion on additional reference material provided in the curriculum 2024-25 + Project Work.

FINAL-TERM EXAMINATION

PART B : POLITICAL THEORY

1. Political Theory : An Introduction
2. Freedom
3. Equality
4. Social Justice
5. Rights
6. Citizenship
7. Nationalism
8. Secularism
+ The entire syllabus of Mid-Term examination.
Class discussion on additional reference material provided in the curriculum 2024-25 + Project Work.

BUSINESS STUDIES

MID-TERM EXAMINATION

PART-A FOUNDATIONS OF BUSINESS

Chapter 1- Nature and Purpose of Business
Chapter 2- Forms of Business Organizations
Chapter 7- Formation of a Company **(**Part of chapter-2 as per latest CBSE Curriculum)
Chapter 3- Public, Private and Global Enterprises
Chapter 4- Business Services
Chapter 5- Emerging Modes of Business
Project work

FINAL-TERM EXAMINATION

PART-A FOUNDATIONS OF BUSINESS

Chapter 1- Nature and Purpose of Business
Chapter 2- Forms of Business Organizations (includes Chapter-7 Formation of a Company, as per latest CBSE Curriculum)
Chapter 3- Public, Private and Global Enterprises
Chapter 4- Business Services
Chapter 5- Emerging Modes of Business
Chapter 6- Social Responsibility of Business and Business Ethics

PART-B CORPORATE ORGANISATION, FINANCE AND TRADE

Chapter 8- Sources of Business Finance
Chapter 9- Small Business and Entrepreneurship
Chapter 10- Internal Trade
Chapter 11- International Business and Project work

ACCOUNTANCY

MID-TERM EXAMINATION

Unit 1: Theoretical Framework Introduction to Accounting Theory Base of Accounting
Unit 2: Accounting Process (Recording of Business Transactions- Voucher, Journal, Special Purpose books - Cash Book and other books, GST, Ledger, Bank Reconciliation Statement)
Project Work

FINAL-TERM EXAMINATION

Unit 2: Accounting Process Depreciation, Provisions and Reserves Trial Balance and Rectification of Errors
Unit 3: Financial Statements of Sole Proprietorship (without adjustments and with adjustments) Incomplete Records

**(PROJECT WORK AND THE ENTIRE
MID-TERM SYLLABUS)**

ECONOMICS

MID-TERM EXAMINATION

Statistics for Economics

Unit 1: Introduction: What is Economics?

Meaning, scope, functions and importance of statistics in Economics

Unit 2: Collection and Organization of Data
Collection of data - sources of data - primary and secondary; how basic data is collected with concepts of Sampling; methods of collecting data; some important sources of secondary data: Census of India and National Sample Survey Organization.
Organization of Data: Meaning and types of variables; Frequency Distribution.

Unit 3: Statistical Tools and Interpretation: Measures of Central Tendency-
Arithmetic mean, median and mode

Introductory Microeconomics
Unit 4: Introduction: Meaning of microeconomics and macroeconomics; positive and normative economics
What is an economy? Central problems of an economy: what, how and for whom to produce; concepts of production possibility frontier and opportunity cost.

Unit 5: Consumer's Equilibrium and Demand: Consumer's equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis.

Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) conditions of consumer's equilibrium.

Demand, market demand, determinants of demand, demand schedule, demand curve and its slope, movement along and shifts in the demand curve; price elasticity of demand - factors affecting price elasticity of demand; measurement of price elasticity of demand – percentage change method and total expenditure method.

FINAL-TERM EXAMINATION

Statistics for Economics

Unit 2: Presentation of Data: Tabular Presentation and Diagrammatic Presentation of Data: (i)Geometric forms (bar diagrams and pie diagrams), (ii) Frequency diagrams (histogram, polygon and Ogive) and (iii) Arithmetic line graphs (time series graph).

Correlation – meaning and properties, scatter diagram; measures of correlation – Karl Pearson's method (two variables ungrouped data) Spearman's rank correlation.

Introduction to Index Numbers – meaning, types – wholesale price index, consumer price index and index of industrial production, uses of index numbers: Inflation and index numbers.

Introductory Microeconomics

Unit 6: Producer Behaviour and Supply
Meaning of Production Function – Short-Run and Long-RunTotal Product, Average Product and Marginal Product.
Returns to a Factor
Cost: Short run costs - total cost, total fixed cost, total variable cost; Average cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationships. Revenue - total, average and marginal revenue - meaning and their relationship. Producer's equilibrium-meaning and its conditions in terms of marginal revenue-marginal cost. Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - percentage-change method.

Unit 7: Forms of Market and Price Determination under Perfect Competition with simple applications.
Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply.
Simple Applications of Demand and Supply: Price ceiling, price floor.
(ENTIRE SYLLABUS OF MID-TERM WILL ALSO BE INCLUDED IN THE FINAL-TERM)
Project Work: Case Study along with a questionnaire and its analysis.

MATHEMATICS

MID-TERM EXAMINATION

1.   SETS

Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement.

2.   RELATIONS AND FUNCTIONS

Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto R x R x R).Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions.

3.   TRIGONOMETRIC FUNCTIONS

Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle.

Truth of the identity $\sin^2 x + \cos^2 x = 1$, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing sin (x±y) and cos (x±y) in terms of sinx,

siny, cosx & cosy and their simple applications. Deducing identities like the following:

$$\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}, \cot(x \pm y) = \frac{\cot x \cot y \mp 1}{\cot y \pm \cot x}$$

$$\sin\alpha \pm \sin\beta = 2\sin\frac{1}{2}(\alpha \pm \beta)\cos\frac{1}{2}(\alpha \mp \beta)$$

$$\cos\alpha + \cos\beta = 2\cos\frac{1}{2}(\alpha + \beta)\cos\frac{1}{2}(\alpha - \beta)$$

$$\cos\alpha - \cos\beta = -2\sin\frac{1}{2}(\alpha + \beta)\sin\frac{1}{2}(\alpha - \beta)$$

Identities related to sin2x, cos2x, tan2 x, sin3x, cos3x and tan3x.

4.   COMPLEX NUMBERS AND QUADRATIC EQUATIONS

Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane

5.   LINEAR INEQUALITIES

Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.

6.   STRAIGHT LINES

Brief recall of two dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form, Distance of a point from a line.

7.   INTRODUCTION TO THREE DIMENSIONAL GEOMETRY

Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.

FINAL-TERM EXAMINATION

8.   PERMUTATIONS AND COMBINATIONS

Fundamental principle of counting. Factorial n. (n!) Permutations and combinations, derivation of Formulae for ^nP_r and ^nC_r and their connections, simple applications.

9.   BINOMIAL THEOREM

Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.

10. STATISTICS

Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.

11. CONIC SECTIONS

Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

12. PROBABILITY

Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.

13. LIMITS AND DERIVATIVES

Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions, trigonometric, exponential and logarithmic functions. Definition of derivative relate it to scope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

14. SEQUENCES AND SERIES

Sequence and Series. Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.

Note: All Chapters of Mid-Term to be included in the Final-Term.

Internal Assessment : Periodic Test- (10 marks) and Mathematics Activities- (10 marks) (Total- 20 marks)

PHYSICS

MID-TERM EXAMINATION

Unit I: Physical World and Measurement

Chapter–2: Units and Measurements

Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. significant figures. Dimensions of physical quantities, dimensional analysis and its applications.

Unit II: Kinematics

Chapter- 3: Motion in a Straight Line

Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, uniform and non- uniform motion, and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment).

Chapter- 4: Motion in a Plane

Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors.Motion in a plane, cases of uniform velocity and uniform acceleration- projectile motion, uniform circular motion.

Unit III: Laws of Motion

Chapter- 5: Laws of Motion

Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.Law of conservation of linear momentum and its applications.Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication.Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).

Unit IV: Work, Energy and Power

Chapter- 6: Work, Energy and Power

Work done by a constant force and a variable force; kinetic energy, work- energy theorem, power.Notion of potential energy, potential energy of a spring, conservative forces: non-conservative forces, motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.

Unit V: Motion of System of Particles and Rigid Body

Chapter- 7: System of Particles and Rotational Motion
Centre of mass of a two-particle system, momentum conservation and Centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod.Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications.Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions.Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).

FINAL-TERM EXAMINATION

ALL THE UNITS COVERED IN MID TERM EXAMINATION and

Unit VI: Gravitation

Chapter- 8: Gravitation

Kepler's laws of planetary motion, universal law of gravitation.Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape speed,orbital velocity of a satellite.

Unit VII: Properties of Bulk Matter

Chapter- 9: Mechanical Properties of Solids

Elasticity, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus,

shear modulus of rigidity (qualitative idea only), Poisson's ratio; elastic energy.

Chapter- 10: Mechanical Properties of Fluids

Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure.Viscosity, Stokes' law, terminal velocity, streamline and

turbulent flow, critical velocity, Bernoulli's theorem and its simple applications.Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.

Chapter- 11: Thermal Properties of Matter

Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity.Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law .

Unit VIII: Thermodynamics

Chapter- 12: Thermodynamics
Thermal equilibrium and definition of temperature, zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics,Second law of thermodynamics: gaseous state of matter, change of condition of gaseous state -isothermal, adiabatic, reversible, irreversible, and cyclic processes.

Unit IX:Behavior of Perfect Gases and Kinetic Theory of Gases

Chapter- 13: Kinetic Theory

Equation of state of a perfect gas, work done in compressing a gas.Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.

Unit X: Oscillations and Waves

Chapter- 14: Oscillations

Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their applications.Simple harmonic motion (S.H.M) and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M.Kinetic and potential energies; simple pendulum derivation of expression for its time period.

Chapter- 15: Waves

Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode

PSYCHOLOGY

MID-TERM EXAMINATION

Chapter 1- What is Psychology?

Chapter 2- Methods of Enquiry in Psychology

Chapter 4- Human Development

[Practical- Project + Practical file]

FINAL-TERM EXAMINATION

Chapter 1- What is Psychology?

Chapter 2- Methods of Enquiry in Psychology

Chapter 4- Human Development

Chapter 5- Sensory, Attentional and Perceptual Processes

Chapter 6- Learning

Chapter 7- Human Memory

Chapter 8- Thinking

Chapter 9- Motivation and Emotion

[Practical- Project + Practical file]

PHYSICAL EDUCATION

MID-TERM EXAMINATION

Chapter- 1 Changing trends and career in Physical Education

Chapter- 2 Olympic Value Education

Chapter- 3 Yoga

Chapter- 4 Physical Education and Sports for CWSN

Chapter- 5 Physical fitness, Wellness

FINAL-TERM EXAMINATION

Chapter- 6 Test, Measurements and Evaluation

Chapter- 7 Fundamentals of Anatomy and Physiology in Sports

Chapter- 8 Fundamentals of Kinesiology and Biomechanics in Sports

Chapter- 9 Psychology in Sports

Chapter- 10 Training and Doping in Sports

+MID-TERM SYLLABUS
PRACTICAL EXAM- (30 MARKS)

COMPUTER SCIENCE

MID-TERM EXAMINATION

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
- Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, DeMorgan'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)

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

FINAL-TERM EXAMINATION

Unit II: Computational Thinking and Programming – 1 (Contd)

- 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 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
- 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
● Introduction to Python modules: Importing module using 'import <module>' 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)

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
● Indian Information Technology
  Act (IT Act)
● Technology & Society: Gender and disability issues while teaching and using computers. Syllabus covered in Mid Term as well**.**

INFORMATICS PRACTICES

MID-TERM EXAMINATION

Unit 1: 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.
● Software: purpose and types – system and application software, generic and specific purpose software.

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 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.
● 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()

FINAL-TERM EXAMINATION

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 usingMySQL,
- 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.

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, Smartcities,
- Cloud Computing and Cloud Services (SaaS, IaaS, PaaS);
- Grid Computing, Block chain technology.

+ Syllabus covered in Mid-Term.

SOCIOLOGY

MID TERM EXAMINATION
Book –**Introducing Sociology**
Chapter-1 Sociology, Society and its relationship with other Social Science disciplines
Chapter-2 Terms, concepts and their use in Sociology
Chapter-3 Understanding Social Institutions
Chapter-4 Culture and Socialization

FINAL TERM EXAMINATION
Book –**Understanding Society**
Chapter-2 Social Change and Social order in Rural and Urban Society
Chapter-4 Introducing Western Sociologists
Chapter-5 Indian Sociologists
PROJECT WORK
And the entire syllabus of Mid Term Examination