

**MOUNT ST. MARY'S SCHOOL**  
**CLASS- XI A (2024-2025)**  
**SUBJECT: HISTORY**  
**(CODE NO. 027)**

**EXAMINATION SYLLABUS**

**First Term (Pre Term 1)**

Theme 1: Writing and City Life

**Half Yearly Examination**

Theme 1: Writing and City Life

Theme 2: An Empire Across Three Continents

Theme 3: Nomadic Empires

**Second Term (Preterm 2)**

Theme 4: The Three orders

**Final Term Examination**

Theme 1: Writing and City Life

Theme 2: An Empire Across Three Continents

Theme 3: Nomadic Empires

Theme 4: The Three orders

Theme 5: Changing Cultural Traditions

Theme 6: Displacing Indigenous Peoples

Theme 7: Paths to modernization

**Map Work**

Map work of the related themes.

**Mount St. Mary's School**  
**Syllabus 2024-25**  
**Class: XI**  
**Subject: Accountancy**

**Pre Term I:**

Introduction to Accounting

Basic Accounting Terms

Theory Base of Accounting

Accounting Equation

**Half Yearly:**

ALL PREVIOUS TOPICS AND

Rules of Debit & Credit

Vouchers

Journal & Ledger

Special Purpose Books- Cash Book

Special Purpose Books- Subsidiary Books

Bank Reconciliation Statement

Trial Balance

Depreciation

Provisions & Reserves

**Pre Term II:**

Rectification of Errors

Financial Statements of Sole Proprietorship

Adjustments in Preparation of Financial Statements

**Final Term:**

ALL PREVIOUS TOPICS AND

Accounts of Incomplete Records

Project Work-

Some portion of Class XII will be covered in Class XI i.e. from Accounting Ratios and Cash Flow Statements

**BUSINESS STUDIES  
SYLLABUS 2024-25  
CLASS XI**

**Pre Term I:**

1. Nature and Significance of Business
2. Forms of Business Organisation

**Half Yearly:**

- Chapters 1 and 2
3. Public, Private and Global Enterprises
  4. Business Services
  5. Emerging Modes of Business
  6. Social Responsibilities of Business

**Pre Term II:**

- Chapter 5
7. Sources of Business Finance
  8. Small Business

**Final Term:**

- Chapter 1 to 8
9. Internal Trade
  10. International Business
  11. Planning (Class XII)

**Class-11 -Informatics Practices (065)**

**Syllabus- 2024-25**

**Preterm-1**(First Term) Introduction to Computer System

**Half Yearly Exam** Introduction to Computer System Introduction to Python Lists and Dictionaries  
Emerging Trends Preterm-2 (Second Term) Database Concepts and SQL

**Final Exam** Full Course

**MOUNT ST. MARY’S SCHOOL  
SYLLABUS FOR ECONOMICS  
SESSION 2024-2025**

CLASS	EXAMINATION	PORTION TO BE COVERED	ART INTEGRATION PROJECT
CLASS XI	PRE-TERM 1	<ol style="list-style-type: none"> <li>1. Introduction to Statistics</li> <li>2. Introduction to Microeconomics – Production Possibility Curve</li> </ol>	
	HALF YEARLY	<ol style="list-style-type: none"> <li>1. Introduction to Statistics</li> <li>2. Collection of data</li> <li>3. Organisation of data</li> <li>4. Presentation of data (Tabular, Bar diagram, Pie Diagram, Histogram, Frequency Polygon, Ogives, Arithmetic line graphs)</li> <li>5. Introduction to Microeconomics</li> <li>6. Consumer Behaviour (utility theory)</li> <li>7. The Theory of Demand and elasticity of demand</li> <li>8. Production function</li> </ol>	<ul style="list-style-type: none"> <li>• Pictorial presentation of data in notebooks</li> <li>• Collage – saying a story about Sustainable development and scarcity of resources</li> </ul>
	PRE-TERM 2	<ol style="list-style-type: none"> <li>1. Measures of central tendency (Mean, Median and Mode)</li> <li>2. Theory of Cost</li> </ol>	
	FINAL	<ol style="list-style-type: none"> <li>1. Collection of data</li> <li>2. Organisation of data</li> <li>3. Presentation of data – Tabular, bar diagrams, Pie diagram, histogram, frequency polygon, Ogives, Arithmetic line graph</li> <li>4. Measures of central tendency – Mean, Median, Mode</li> <li>5. Correlation – Spearman’s rank correlation method</li> <li>6. Index numbers</li> <li>7. Consumer Equilibrium – Utility Analysis</li> <li>8. The Theory of Demand and elasticity of demand</li> <li>9. Theory of Production – short run production function</li> <li>10. Theory of cost</li> <li>11. Theory of Revenue</li> <li>12. Producer’s Equilibrium</li> <li>13. Theory of Supply and elasticity of supply</li> <li>14. Forms of Market – Perfect competition</li> <li>15. Price determination under Perfect Competition and the tools of demand and supply</li> </ol>	CBSE prescribed project work

**Class 11 Syllabus - 2024-25**  
**English**

**Pre-Term 1**

Portrait of a Lady

A Photograph

General Grammar

Comprehension

Poster

**Half Yearly Examination**

Literature

Portrait of a Lady

We are Not Afraid To Die...

Discovering Tutankhamun

Summer of the Beautiful White Horse

The Address

A Photograph

The Laburnum Top

Voice of the Rain

Writing

Poster

Classified Advertisement

Speech

Debate

Reading

Comprehension

Note making

General Grammar

**Pre-Term 2**

1. Childhood

2. Mother's Day

3. General Grammar

4. Comprehension

5. Classified Advertisement



**MOUNT ST. MARY'S SCHOOL**  
**SYLLABUS 2024-25**  
**MATHEMATICS**  
**CLASS – 11**

**PRE TERM 1**

1. SETS
2. LINEAR INEQUALITIES

**HALF YEARLY EXAMINATION**

1. SETS
2. RELATIONS AND FUNCTIONS
3. TRIGONOMETRIC FUNCTIONS
4. COMPLEX NUMBERS
5. LINEAR INEQUALITIES
6. SEQUENCES AND SERIES
7. PERMUTATIONS AND COMBINATIONS
8. INTRODUCTION TO THREE DIMENSIONAL GEOMETRY
9. BINOMIAL THEOREM

**PRE TERM 2**

1. STRAIGHT LINES
2. CONIC SECTIONS

**FINAL TERM**

1. SETS
2. RELATIONS AND FUNCTIONS
3. TRIGONOMETRIC FUNCTIONS
4. COMPLEX NUMBERS
5. LINEAR INEQUALITIES
6. PERMUTATIONS AND COMBINATIONS
7. INTRODUCTION TO THREE DIMENSIONAL GEOMETRY
8. BINOMIAL THEOREM
9. STRAIGHT LINES
10. CONIC SECTIONS
11. PROBABILITY
12. STATISTICS
13. LIMITS AND DERIVATIVES
14. CONTINUITY - CLASS XII
15. MATRICES - CLASS XII

**NOTE:**

- ACTIVITIES AND ASSIGNMENTS BASED ON AIL(ART INTEGRATED LEARNING) WILL BE CARRIED OUT EVERY MONTH.
- FIVE PRACTICALS IN EACH TERM WILL BE DONE.

**PHYSICAL EDUCATION**  
**SYLLABUS (2024-2025)**  
**CLASS XI**

**FIRST TERM**

**PRE-TERM I:**

Unit 1: Changing trends & career in Physical education

Unit 2: Olympic Value Education

### HALF-YEARLY/TERM-1:

Unit 1: Changing trends & career in Physical education

Unit 2: Olympic value Education

Unit 3: Physical Fitness, wellness and Lifestyle

Unit 4: Physical education & sports for CWSN (Children with special needs-Divyang)

Unit 5: Yoga

Unit 6: Physical Activity and Leadership Training

### SECOND TERM

### PRE-TERM II:

Unit 7: Test, measurement and Evaluation

Unit 8: Fundamentals of Anatomy, Physiology & Kinesiology in sports

### FINAL EXAMINATION/TERM-2:

Unit 1: Changing trends & career in Physical education

Unit 2: Olympic value Education

Unit 3: Physical Fitness, Wellness & Lifestyle

Unit 4: Physical education & sports for CWSN (Children with special needs-Divyang)

Unit 5: Yoga

Unit 6: Physical Activity & Leadership Training

Unit 7: Test, measurement and Evaluation

Unit 8: Fundamentals of Anatomy, Physiology & Kinesiology in sports

Unit 9: Psychology and sports

Unit 10: Training and Doping in sports

## SYLLABUS PSYCHOLOGY (037) CLASS XI

2024-25

### HALF YEARLY (70 MARKS)

- CHAPTER-1 WHAT IS PSYCHOLOGY?
- CHAPTER-2 METHODS OF ENQUIRY IN PSYCHOLOGY
- CHAPTER-4 HUMAN DEVELOPMENT
- CHAPTER-5 SENSORY, ATTENTIONAL AND PERCEPTUAL PROCESSES

### PRACTICAL (30 MARKS)

- INTERVIEW SCHEDULE
- OBSERVATION SCHEDULE
- RESEARCH PAPER
- SPAN OF ATTENTION (EXPERIMENT)

### VIVA-VOCE ON PROJECT WORK (PSYCHOLOGY SCIENTIST)

### PERIODIC TEST-2 (20 MARKS)

- CHAPTER-6 LEARNING
- CHAPTER-7 HUMAN MEMORY

### FINAL TERM (70 MARKS)

- 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 (30 MARKS)

- INTERVIEW SCHEDULE
- RESEARCH PAPER
- SPAN OF ATTENTION

**VIVA-VOCE ON PROJECT WORK (PSYCHOLOGY SCIENTIST)**



**MOUNT ST. MARY'S SCHOOL, DELHI CANTT.**  
**SYLLABUS FOR ACADEMIC SESSION (2024-2025)**

**CLASS- XI**  
**PHYSICS**

CHAPTER NO.	TOPIC
1	Units and Measurements
2	Motion in a Straight Line
3	Motion in a Plane
4	Laws of Motion
5	Work, Energy and Power
6	System of Particles and Rotational Motion
7	Gravitation
8	Mechanical Properties of Solids
9	Mechanical Properties of Fluids
10	Thermal Properties of Matter
11	Thermodynamics
12	Kinetic Theory
13	Oscillations
14	Waves

**SYLLABUS DISTRIBUTION**

**PRE-TERM – I : CHAPTER: 1,2**

**FIRST TERM(SEPTEMBER): CHAPTERS: 1,2,3,4,5,6**

**PRE- TERM-11: CHAPTER :7,8,9**

**ANNUAL TERM:ENTIRE SYLLABUS (1 TO 14)**

**Chapter–1: 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.

**Chapter–2: Motion in a Straight Line** Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, uniform and nonuniform motion, and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment). **Chapter–3: 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.

**Chapter–4: 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).

**Chapter–5: Work, Energy and Power** Work done by a constant force and a variable force; kinetic energy, workenergy 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.

**Chapter–6: 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).

**Chapter–7: 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.

**Chapter–8: 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–9: 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–10: Thermal Properties of Matter** Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity;  $C_p$ ,  $C_v$  - 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 .

**Chapter–11: 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.

**Chapter–12: 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.

**Chapter–13: 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–14: 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 and harmonics, Beats.



## **PRACTICALS**

The record, to be submitted by the students, at the time of their annual examination, has to include:

- Record of at least 8 Experiments [with 4 from each section], to be performed by the students.
- Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.
- Report of the project carried out by the students.

### **SECTION–A Experiments**

1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume.
2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.
3. To determine volume of an irregular lamina using screw gauge.
4. To determine the radius of curvature of a given spherical surface by a spherometer.
5. To determine the mass of two different objects using a beam balance.
6. To find the weight of a given body using the parallelogram law of vectors.
7. Using a simple pendulum, plot its L-T<sup>2</sup> graph and use it to find the effective length of second's pendulum.
8. To study variation of time period of a simple pendulum of a given length by taking bobs of same size but different masses and interpret the result.
9. To study the relationship between force of limiting friction and normal reaction and to find the coefficient of friction between a block and a horizontal surface.
10. To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the earth and study its relationship with the angle of inclination  $\theta$  by plotting a graph between force and  $\text{Sin}\theta$ .

### **Activities**

1. To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.
2. To determine mass of a given body using a metre scale by principle of moments.
3. To plot a graph for a given set of data, with proper choice of scales and error bars.
4. To measure the force of limiting friction for rolling of a roller on a horizontal plane.
5. To study the variation in range of a projectile with angle of projection.
6. To study the conservation of energy of a ball rolling down on an inclined plane (using a double inclined plane).
7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.

### **SECTION–B Experiments**

1. To determine Young's modulus of elasticity of the material of a given wire.
2. To find the force constant of a helical spring by plotting a graph between load and extension.
3. To study the variation in volume with pressure for a sample of air at constant temperature by plotting graphs between P and V, and between P and 1/V.
4. To determine the surface tension of water by capillary rise method.
5. To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
6. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.
7. To determine specific heat capacity of a given solid by method of mixtures.
8. To study the relation between frequency and length of a given wire under constant tension using a sonometer.

9. To study the relation between the length of a given wire and tension for constant frequency using a sonometer.

10. To find the speed of sound in air at room temperature using a resonance tube by two resonance positions.

### **Activities**

1. To observe change of state and plot a cooling curve for molten wax.
2. To observe and explain the effect of heating on a bi-metallic strip.
3. To note the change in level of liquid in a container on heating and interpret the observations.
4. To study the effect of detergent on surface tension of water by observing capillary rise.
5. To study the factors affecting the rate of loss of heat of a liquid.
6. To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle.
7. To observe the decrease in pressure with increase in velocity of a fluid.

**MOUNT ST. MARY'S SCHOOL, DELHI CANTT.**  
**Chemistry Syllabus 2024-25**  
**As per curriculum**  
**Class 11<sup>th</sup> C**

### **TERM-1**

**UNIT 1: Some Basic Concepts of Chemistry**

**UNIT 2: Structure of Atom**

**UNIT 3: Classification of Elements and Periodicity in Properties**

**UNIT 4: Chemical Bonding and Molecular Structure**

**UNIT 5: Chemical Thermodynamics**

**PRE-TERM-1: UNIT 1: Some basic Concepts of Chemistry**

### **HALF YEARLY EXAM:**

**UNIT 1: Some Basic Concepts of Chemistry**

**UNIT 2: Structure of Atom**

**UNIT 3: Classification of Elements and Periodicity in Properties**

**UNIT 4: Chemical Bonding and Molecular Structure**

**UNIT 5: Chemical Thermodynamics**

### **TERM-II**

**UNIT 6: Equilibrium**

**UNIT 7: Redox Reactions**

**UNIT 8: Organic Chemistry: Some basic Principles and Techniques**

**UNIT 9: Hydrocarbons**

**MOUNT ST. MARY'S SCHOOL****SYLLABUS 2024-25****Classes: XI****Subject: Biology**

PRETERM 1	<b>CHAPTER 8: Cell-The Unit of Life CHAPTER 9: Biomolecules CHAPTER 10: Cell cycle and Cell Division</b>
HALFYEARLY	<b>CHAPTER 1: The living world Chapter 2: Biological Classification CHAPTER 3: Plant kingdom CHAPTER 4: Animal Classification CHAPTER 5: Morphology of Flowering Plants, CHAPTER 6: Anatomy of flowering plants CHAPTER 7: Anatomy of animals CHAPTER 8: Cell-The Unit of Life CHAPTER 9: Biomolecules CHAPTER 10: Cell cycle and Cell Division</b>
PRE- TERM2	<b>Chapter-11: Photosynthesis in Higher Plants Chapter-12: Respiration in Plants</b>
FINAL TERM	<b>ENTIRE SYLLABUS</b>

**Unit-I Diversity of Living Organisms****Chapter-1: The Living World**

Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature

**Chapter-2: Biological Classification**

Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.

**Chapter-3: Plant Kingdom**

Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations)

**Chapter-4: Animal Kingdom**

Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and at a few examples of each category). (No live animals or specimen should be displayed.)

**Unit-II Structural Organization in Plants and Animals****Chapter-5: Morphology of Flowering Plants**

Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae

**Chapter-6: Anatomy of Flowering Plants**

Anatomy and functions of tissue systems in dicots and monocots.

## **Chapter-7: Structural Organization in Animals**

Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.

### **Unit-III Cell: Structure and Function**

## **Chapter-8: Cell-The Unit of Life**

Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

## **Chapter-9: Biomolecules**

Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, and nucleic acids; Enzyme - types, properties, enzyme action.

**(Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents Concept of Metabolism, Metabolic Basis of Living, The Living State)**

## **Chapter-10: Cell Cycle and Cell Division**

Cell cycle, mitosis, meiosis and their significance

### **Unit-IV Plant Physiology**

## **Chapter-11: Photosynthesis in Higher Plants**

Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C<sub>3</sub> and C<sub>4</sub> pathways; factors affecting photosynthesis.

## **Chapter-12: Respiration in Plants**

Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

## **Chapter-13: Plant - Growth and Development**

Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; plant growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.

### **Unit-V Human Physiology**

## **Chapter-14: Breathing and Exchange of Gases**

Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders.

## **Chapter-15: Body Fluids and Circulation**

Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.

## **Chapter-16: Excretory Products and their Elimination**

Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system – structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.

## Chapter-17: Locomotion and Movement

Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

## Chapter-18: Neural Control and Coordination

Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse

## Chapter-19: Chemical Coordination and Integration

Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease. Note: Diseases related to all the human physiological systems to be taught in brief.

### Computer Science CLASS-XI

Code No. 083

2024-25

#### 1. Learning Outcomes

Student should be able to

- develop basic computational thinking
- explain and use data types
- appreciate the notion of algorithm
- develop a basic understanding of computer systems - architecture, operating system and cloud computing
- explain cyber ethics, cyber safety and cybercrime
- Understand the value of technology in societies along with consideration of gender and disability issues

#### 2. Distribution of Marks

Unit No.	Unit Name	Marks	Periods	
			Theory	Practical
I	Computer Systems and Organisation	10	10	10
II	Computational Thinking and Programming - 1	45	80	60
III	Society, Law and Ethics	15	20	----
	Total	70	110	70

#### 3. Unit wise Syllabus

##### 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, 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)

## **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 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()
- 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

#### 4. Practical

S.No	Unit Name	Marks (Total=30)
1.	<b>Lab Test (12 marks)</b>	
	Python program (60% logic + 20% documentation + 20% code quality)	<b>12</b>
2.	<b>Report File + Viva (10 marks)</b>	
	Report file: Minimum 20 Python programs	<b>7</b>
	Viva voce	<b>3</b>
3.	Project (that uses most of the concepts that have been learnt) (See CS-XII for the rules regarding the projects)	<b>8</b>

#### 5. Suggested Practical List

##### Python Programming

- Input a welcome message and display it.
- Input two numbers and display the larger / smaller number.
- Input three numbers and display the largest / smallest number.
- Generate the following patterns using nested loop.

Pattern-1	Pattern-2	Pattern-3
* ** *** **** *****	1 2 3 4 5 1 2 3 4 1 2 3 1 2 1	A AB AB C ABCD ABCD E

- Write a program to input the value of x and n and print the sum of the following series:

○  $1+x+x^2+x^3+x^4+\dots X^n$

○  $1-x+x^2-x^3+x^4+\dots X^n$

○  $x - x^2 + x^3 - x^4 + \dots X^n$

**2 3 4                  n**

○  $x + x^2 - x^3 + x^4 - \dots X^n$

**2! 3! 4!                  n!**

- Determine whether a number is a perfect number, an armstrong number or a palindrome.
- Input a number and check if the number is a prime or composite number.
- Display the terms of a Fibonacci series.

- Compute the greatest common divisor and least common multiple of two integers.
- Count and display the number of vowels, consonants, uppercase, lowercase characters in string.
- Input a string and determine whether it is a palindrome or not; convert the case of characters in a string.
- Find the largest/smallest number 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.
- Input a list of numbers and find the smallest and largest number from the list.
- 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.

## **6. Suggested Reading Material**

- NCERT Textbook for COMPUTER SCIENCE (Class XI)
- Support Materials on the CBSE website.

**MOUNT ST. MARY'S SCHOOL  
SYLLABUS (2024-25)  
CLASS -XI  
SUBJECT- POLITICAL SCIENCE (028)**

### **BOOK 1 CONSTITUTION AT WORK**

CH-1 Constitution Why and how

CH-2 Fundamental Rights

CH- 3 Elections and Representation

CH- 4 The Legislature

CH- 5 Executive

CH- 6 Judiciary

CH-7 Federalism

CH- 8 Local Governments

CH-9 Constitution as a living document

### **BOOK -2: POLITICAL THEORY**

Ch-1 Political Theory: An Introduction

Ch-2 Liberty

Ch-3 Equality

CH-4 Rights

Ch-5 Justice

Ch-6 Rights

Ch-7 Citizenship

Ch-8 Secularism

Ch-9 Nationalism

### **HALF YEARLY EXAM**

#### **BOOK 1: CONSTITUTION AT WORK**

CH-1 Constitution

Ch-2 Fundamental Rights



CH- 3 Elections and Representation

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**PRE- TERM -II**

**BOOK 1: CONSTITUTION AT WORK**

CH- 4 Executive

CH-5 Legislature

**Book -2: POLITICAL THEORY**

Ch-5 Justice

Ch-6 Rights

**FINAL TERM EXAM**

**BOOK 1: CONSTITUTION AT WORK**

CH-6 Judiciary

CH- 7 Federalism

**INCLUDING ALL THE PREVIOUS CHAPTERS OF THIS BOOK**

**Book -2: POLITICAL THEORY**

Ch-7 Citizenship

Ch-8 Nationalism

**INCLUDING ALL THE PREVIOUS CHAPTERS OF THIS BOOK**