| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | ENGLISH |
| **TEXT BOOKS** | **English Reader – Hornbill NCERT**<br>**English Supplementary Reader – Snapshots NCERT** |
| **REFERENCE BOOKS** | |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| 1 | Reading Skills | 26 |
| 2 | Creative Writing Skills | 23 |
| 3 | Literature Text Books and Supplementary Reading Texts | 31 |
| 4 | Assessment of Listening and Speaking Skills | 10 |
| 5 | Internal Assessment<br>• Listening<br>• Speaking<br>• Project Work | 10 |
| | GRAND TOTAL | 100 |
| | | |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 26 % |
|---|---|

Hornbill: L-1 The Portrait of a Lady
L-2 'We're Not Afraid to Die ….'
Snapshots: L-1 The Summer of the Beautiful White Horse

Grammar: Gap filling (Tenses, Clauses)
Re-ordering / Transformation of Sentences
Writing Skills: Poster Making

Reading Skills: Comprehension Passage (Factual/ Descriptive/ Literary and Case-based)

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 19 % |
|---|---|

Hornbill: P-1 A Photograph
L-3 Discovering Tut: The Saga Continues
Snapshots: L-2 The Address

| | |
|---|---|
| Writing Skill: | Speech Writing |
| Reading Skill: | Note- Making and Summarization |

| **MONTH: SEPTEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 4 %** |
|---|---|
| Hornbill: | P-2 The Laburnum Top |
| Assessment of Listening and Speaking Skills<br>Revision for Half- Yearly Examination | |

| **MONTH: OCTOBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12 %** |
|---|---|
| Hornbill: | P-3 Voice of the Rain |
| Snapshots: | L-5 Mother's Day |
| Writing Skills: | Classified Advertisement |

| **MONTH: NOVEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 19 %** |
|---|---|
| Hornbill: | P-4 Childhood<br>L-7 The Adventure |
| Grammar: | Gap filling (Tenses, Clauses)<br>Re-ordering / Transformation of Sentences |
| Writing Skills: | Debate Writing |

| **MONTH: DECEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12 %** |
|---|---|
| Hornbill: | L-8 Silk Road |
| Snapshots: | L-7 Birth |
| Writing Skills: | Poster(revision} |

| **MONTH: JANUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: 8 %** |
|---|---|
| Hornbill: | P- 5 Father to Son |
| Snapshots: | L- 8 The Tale of Melon City |

| **MONTH: FEBRUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED:** |
|---|---|
| Revision<br>Assessment of Listening and Speaking Skills | |

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | MATHS (STANDARD) |
| **TEXT BOOKS** | NCERT MATHS |
| **REFERENCE BOOKS** | EXEMPLAR MATHS |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| 1. | Sets and Functions | 23 |
| 2. | Algebra | 25 |
| 3. | Coordinate Geometry | 12 |
| 4. | Calculus | 08 |
| 5. | Statistics and Probability | 12 |
| | Total | 80 |
| | Internal Assessment | 20 |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 20 % |
|---|---|

**Sets**

Sets and their representations. Empty set. Finite and Infinite sets. Equal sets. Subsets. Subsets of the set of real numbers especially intervals (with notations). and intersection of sets. Difference of sets. Complement of a set, Properties of Complement sets.

**Relations and Functions**

Ordered pairs, Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the reals with itself (uptoR × R × R).

Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special kind of relation from one set to another. Pictorial representation of a function, domain, co-domain and range of a function. Real valued function of the real variable, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum and greatest integer functions with their graphs. Sum, difference, product and quotients of functions.

**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 and sketch of their graphs. Expressing sin (x+ y) and cos (x + y) in terms of sin x, sin y,
cosx and cos y. Deducing the identities like following:

$\tan(x \pm y) = (\tan x \pm \tan y)/(1 \mp \tan x.\tan y)$ , $\cot(x \pm y) = (\cot x.\cot y \mp 1)/(\cot x \pm \cot y)$ , $\sin x + \sin y = 2\sin(x+y)/2 \cos(x-y)/2$ ,

$\cos x+\cos y = 2\cos(x+y)/2 \cos(x-y)/2$ , $\sin x-\sin y = 2\cos(x+y)/2 \sin(x-y)/2$ , $\cos x-\cos y = -2\sin(x+y)/2 \sin(x-y)/2$.

Identities related to sin2x, cos2x, tan2x, sin3x, cos3x and tan3x

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 20 % |
|---|---|

**Complex Numbers and Quadratic Equations**

Need for complex numbers, especially √(-1), to be motivated by inability to solve every quadratic equation. Brief description of algebraic properties of complex numbers. Argand plane

**Linear Inequalities**

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

**Binomial theorem**

Historical perspective, statement and proof of the Binomial theoremfor positive integral indices. Pascals triangle, simple applications.

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 6 % |
|---|---|

**Permutations and Combinations**

Fundamental principle of counting. Factorial n. Permutations and combinations derivation of formulae and their connections, simple applications.

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 16% |
|---|---|

**Sequence and Series**

Sequence and Series. Arithmetic Progression (A.P.), Arithmetic Mean (A.M.), Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P. Arithmetic and geometric series, infinite G.P. and its sum, geometric mean (G.M.). Relation between A.M. and G.M. Sum ton terms of the special series : ∑n , ∑n^2 and ∑n^3 .

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 16% |
|---|---|

**Straight Line**

Brief recall of 2-D from earlier classes, shifting of origin. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axes, point-slope form, slope-intercept form, two-point form, intercepts form and normal form. Distance of a point from a line.

**Conic Sections**

Sections of a cone: Circles, ellipse, parabola, hyperbola, a point, a straight line and 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.

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 16% |
|---|---|
| **Introduction to Three-dimensional Geometry** | |

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

**Statistics**

Measure of dispersion; mean deviation, variance and standard deviation of ungrouped/grouped data. Analysis of frequency distributions with equal means but different variances.

**Limits and Derivatives**

Derivative introduced as rate of change both as that of distance function and geometrically, intuitive idea of limit. lim┬(x→0)⁡〖log_e⁡〖(1+x)〗/x〗 , lim┬(x→0)⁡〖(e^x-1)/x〗. Definition of derivative, relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

| **MONTH: JANUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: 6%** |
|---|---|

**Probability**

Sample space, Events, Occurrence of events, not, and , or events, exhaustive events, mutually exclusive events, Axiomatic probability, connections with other theories of earlier classes, Algebra of events

| **MONTH: FEBRUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: _____ %** |
|---|---|

Revision for Annual exams.

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | Applied Mathematics |
| **TEXT BOOKS** | CBSE MATERIAL |
| **REFERENCE BOOKS** | ML AGGARWAL |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| 1. | Numbers, Quantification and Numerical Applications | 09 |
| 2. | Algebra | 15 |
| 3. | Mathematical Reasoning | 06 |
| 4. | Calculus | 10 |
| 5. | Probability | 08 |
| 6. | Descriptive Statistics | 12 |
| 7. | Basics of Financial Mathematics | 15 |
| 8. | Coordinate Geometry | 05 |
| | Total | 80 |
| | Internal Assessment | 20 |

| MONTH: JULY 2021 | PERCENTAGE OF SYLLABUS COVERED: 19% |
|---|---|

**UNIT I :Numbers, Quantification and Numerical Applications**

- Binary Numbers
- Indices, Logarithm and Antilogarithm
- Laws and properties of logarithms
- Simple applications of logarithm and antilogarithm
- Numerical problems on averages, calendar, clock, time, work and distance, mensuration, seating arrangement

**UNIT II:Algebra**

- Sets
- Representation of sets
- Types of sets and their notations
- Subsets
- Intervals
- Venn Diagrams
- Operations on sets

| MONTH: AUGUST 2021 | PERCENTAGE OF SYLLABUS COVERED: 15% |
|---|---|

**UNIT II:Algebra(cont.)**

- Relations :Ordered pairs,Cartesian product of two sets
- Domain and Range of relation
- Differentiate between Sequences and Series
- Arithmetic and Geometric progression
- Applications of AP and GP
- Permutations and Combinations:Factorial
- Fundamental Principle of Counting
- Applications of Permutations and combinations

| MONTH: SEPTEMBER 2021 | PERCENTAGE OF SYLLABUS COVERED: 11% |
|---|---|

**UNIT III:Mathematical Reasoning**

- Problems based on logical reasoning (coding-decoding, odd man out, blood relation, syllogism etc)

| MONTH: OCTOBER 2021 | PERCENTAGE OF SYLLABUS COVERED: 22% |
|---|---|

**UNIT IV : Calculus**

- Introducing functions
- Domain and Range of a function
- Types of functions (Polynomial function; Rational function; Composite function; Logarithm function; Exponential function; Modulus function; Greatest Integer function, Signum function)
- Graphical representation of functions
- Concept of limits and continuity of a function
- Instantaneous rates of change
- Differentiation as a process of finding derivative
- Derivatives of algebraic functions using Chain rule

| MONTH: NOVEMBER 2021 | PERCENTAGE OF SYLLABUS COVERED: 17 % |
|---|---|

**UNIT V: Probability**

- Random experiment, sample space, events, mutually exclusive events
- Independent and Dependent Events
- Law of Total Probability
- Bayes' Theorem

**UNIT VI:Descriptive Statistics**

- Measure of Dispersion
- Skewness and Kurtosis
- Percentile rank and quartile rank
- Correlation (Pearson and Spearman method of correlation)

| **MONTH: DECEMBER 2021** | **PERCENTAGE OF SYLLABUS COVERED: 10 %** |
|---|---|

**UNIT VII:Basics of Financial Mathematics**

- Interest and interest rate
- Accumulation with simple and compound interest
- Simple and compound interest rates with equivalency
- Effective rate of interest
- Present value, net present value and future value
- Annuities, calculating value of regular annuity
- Simple applications of regular annuities (up to 3 period)
- Tax, calculation of tax and simple applications of tax calculation in Goods and
- service tax, Income Tax
- Bills, tariff rates, fixed charge, surcharge, service charge
- Calculation and interpretation of electricity bill, water supply bill and other
- supply bills
- (Comparing interest rates on various types of savings; calculating income tax;
- electricity bills, water bill; service surcharge using realistic data)

| **MONTH: JANUARY 2022** | **PERCENTAGE OF SYLLABUS COVERED: 16%** |
|---|---|

**UNIT VIII: Coordinate Geometry**

- Straight Line
- Circles
- Parabola

| **MONTH: FEBRUARY 2022** | **PERCENTAGE OF SYLLABUS COVERED: _____ %** |
|---|---|

Revision For Annual exam

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | PHYSICS |
| **TEXT BOOKS** | NCERT |
| **REFERENCE BOOKS** | S L ARORA-NEW SIMPLIFIED PHYSICS |

| S. NO. | UNIT / CHAPTER | | DISTRIBUTION OF MARKS |
|---|---|---|---|
| 1. | **Unit–I** | **Physical World and Measurement** | 10 |
| | | Chapter–1: Physical World | |
| | | Chapter–2: Units and Measurements | |
| | **Unit-II** | **Kinematics** | |
| | | Chapter–3: Motion in a Straight Line | |
| 2. | **Laws of Motion** | | 12 |
| | Chapter–5: Laws of Motion | | |
| 3. | **Work, Energy and Power** | | 5 |
| | Chapter–6: Work, Energy and Power | | |
| 4. | **Motion of System of Particles and Rigid Body** | | 8 |
| | Chapter–7: System of Particles and Rotational Motion | | |
| 5. | **Gravitation** | | 5 |
| | Chapter–8: Gravitation | | |
| 6 | **Properties of Bulk Matter** | | 20 |
| | Chapter–9: Mechanical Properties of Solids | | |
| | Chapter–10: Mechanical Properties of Fluids | | |
| | Chapter–11: Thermal Properties of Matter | | |
| | **Thermodynamics** | | |
| | Chapter–12: Thermodynamics | | |
| | **Behaviour of Perfect Gases and Kinetic Theory of Gases** | | |
| | Chapter–13: Kinetic Theory | | |

| | | |
|---|---|---|
| 7 | **Oscillations and Waves**<br>Chapter–14: Oscillations<br>Chapter–15: Waves | 10 |

JULY 19 %

| **MONTH: JULY** | **PERCENTAGE OF SYLLABUS COVERED: 19%__** |
|---|---|

**Physical World and Measurement**

Chapter–1: Physical World Physics-scope and excitement; nature of physical laws; Physics, technology and society.
Chapter–2: Units and Measurements Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; 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: Position-time graph, speed and velocity. Elementary concepts of differentiation and integration for describing motion, uniform and non- uniform motion, average speed 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, relative velocity, 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 accelerationprojectile motion, uniform circular motion**.**

| **MONTH: AUGUST** | **PERCENTAGE OF SYLLABUS COVERED: 30%__** |
|---|---|

**Unit III: 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. (Recapitulation only)
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 banked road).
**Unit IV: 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: conservation of mechanical energy (kinetic and potential energies); 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**

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).

| **MONTH: SEPTEMBER** | **PERCENTAGE OF SYLLABUS COVERED: 11%** |
|---|---|
| **Unit VI: Gravitation**<br>Universal law of gravitation. Acceleration due to gravity (recapitulation only) and its variation with altitude and depth.<br>Gravitational potential energy and gravitational potential, escape velocity, orbital velocity of a satellite, Geo-stationary satellites. | |
| **MONTH: OCTOBER** | **PERCENTAGE OF SYLLABUS COVERED: _10____ %** |
| **Unit VII: Properties of Bulk Matter**<br>Elastic behaviour, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, 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 applications.<br>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. | |
| **MONTH: NOVEMBER** | **PERCENTAGE OF SYLLABUS COVERED: _10 %** |
| **Unit VII: Properties of Bulk Matter (CONTD)**Heat, temperature, (recapitulation only) 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.<br>Heat transfer-conduction, convection and radiation (recapitulation only), thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law, Greenhouse effect.<br>**Unit VIII: Thermodynamics**<br>Thermal equilibrium and definition of temperature (zeroth law of thermodynamics).Heat, work and internal energy. First law of thermodynamics. Isothermal and adiabatic processes.<br>Second law of thermodynamics: reversible and irreversible processes. Heat engine and refrigerator | |

| MONTH: DECEMBER | PERCENTAGE OF SYLLABUS COVERED: 10__ % |
|---|---|
| **Unit IX: Behaviour of Perfect Gases and Kinetic Theory of Gases**<br>Equation of state of a perfect gas, work done in compressing a gas.<br>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. | |
| **MONTH: JANUARY** | **PERCENTAGE OF SYLLABUS COVERED: __10 %** |
| **Unit X: Oscillations and Waves**<br>Periodic motion - time period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a spring-restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of<br>expression for its time period. Free, forced and damped oscillations (qualitative ideas only), resonance. | |
| **MONTH: FEBRUARY** | **PERCENTAGE OF SYLLABUS COVERED: __15%___** |
| **Unit X: Oscillations and Waves (contd)**<br>Wave motion. Transverse and longitudinal waves, speed of wave motion. 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-30 MARKS**

| | |
|---|---|
| **Two experiments one from each section** | **7+7 Marks** |
| **Practical record [experiments and activities]** | **5 Marks** |
| **One activity from any section** | **3 Marks** |
| **Investigatory Project** | **3 Marks** |
| **Viva on experiments, activities and project** | **5 Marks** |

**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 Calipers and hence find its volume.
2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.

**OR**

To determine volume of an irregular lamina using screw gauge.

3. To determine radius of curvature of a given spherical surface by a spherometer.
4. To determine the mass of two different objects using a beam balance.
5. To find the weight of a given body using parallelogram law of vectors.
6. Using a simple pendulum, plot its L-$T^2$ graph and use it to find the effective length of second's pendulum.

**OR**

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.

7. To study the relationship between force of limiting friction and normal reaction co- efficient of friction between a block and a horizontal surface.

## 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.

**Experiments**

1. To determine Young's modulus of elasticity of the material of a given wire.

**OR**

To find the force constant of a helical spring by plotting a graph between load and extension.

2. 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.
3. To determine the surface tension of water by capillary rise method.

**OR**

To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.

4. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.
5. To determine specific heat capacity of a given solid by method of mixtures.
6. To study the relation between frequency and length of a given wire under constant tension using sonometer.

**OR**

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

7. 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.

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | CHEMISTRY |
| **TEXT BOOKS** | Chemistry Part -I, Class-XI, Published by NCERT.<br>Chemistry Part -II, Class-XI, Published by NCERT. |
| **REFERENCE BOOKS** | |

**SYLLABUS:**

**Time:3Hours** **Total Marks70**

| S.NO | UNIT | PERIODS | MARKS |
|---|---|---|---|
| 1 | Some Basic Concepts of Chemistry | 18 | 7 |
| 2 | Structure of Atom | 20 | 9 |
| 3 | Classification of Elements and Periodicity in Properties | 12 | 6 |
| 4 | Chemical Bonding and Molecular Structure | 20 | 7 |
| 5 | Chemical Thermodynamics | 23 | 9 |
| 6 | Equilibrium | 20 | 7 |
| 7 | Redox Reactions | 9 | 4 |
| 8 | Organic Chemistry: Some basic Principles and Techniques | 20 | 11 |
| 9 | Hydrocarbons | 18 | 10 |
| | **TOTAL** | **160** | **70** |

| **MONTH: JULY 2022** | **PERCENTAGE OF SYLLABUS COVERED: __11___ %** |
|---|---|

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

| **MONTH: AUGUST 2022** | **PERCENTAGE OF SYLLABUS COVERED: _21____ %** |
|---|---|

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.

| **MONTH: SEPTEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: __11___ %** |
|---|---|

Unit IV: Chemical Bonding and Molecular Structure
Valence electrons, ionic bond, covalent bond, bond parameters, Lewis's 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.

| **MONTH: OCTOBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: __11___ %** |
|---|---|

Unit VI: Chemical Thermodynamics
Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics -internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction)

| **MONTH: NOVEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: __20___ %** |
|---|---|

Unit VII: Equilibrium
Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion

effect (with illustrative examples).
Unit VIII: Redox Reactions
Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

| **MONTH: DECEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: __11___ %** |
|---|---|

Unit XII: Organic Chemistry -Some Basic Principles and Techniques
General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

| **MONTH: JANUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: _10____ %** |
|---|---|

Unit XIII: Hydrocarbons
Classification of Hydrocarbons
Aliphatic Hydrocarbons:
Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.
Alkenes - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.
Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water.

| **MONTH: FEBRUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: __5___ %** |
|---|---|

**Unit XIII: Hydrocarbons (Continued..)**
Aromatic Hydrocarbons:
Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of the functional group in monosubstituted benzene. Carcinogenicity and toxicity.

**PRACTICALS**

**3 HOURS/ 30 Marks**

| Evaluation Scheme for Examination | Marks |
|---|---|
| Volumetric Analysis | 08 |
| Salt Analysis | 08 |
| Content Based Experiment | 06 |
| Project Work | 04 |
| Class record and viva | 04 |
| **Total** | **30** |

PRACTICAL SYLLABUS Total Periods: 60

Micro-chemical methods are available for several of the practical experiments, wherever possible such techniques should be used.

A. Basic Laboratory Techniques

1. Cutting glass tube and glass rod

2. Bending a glass tube

3. Drawing out a glass jet

4. Boring a cork

B. Characterization and Purification of Chemical Substances

1. Determination of melting point of an organic compound.

2. Determination of boiling point of an organic compound.

3. Crystallization of impure sample of any one of the following: Alum, Copper Sulphate, Benzoic Acid.

C. Experiments based on pH

1. Any one of the following experiments:

• Determination of pH of some solutions obtained from fruit juices, solution of known and varied concentrations of acids, bases and salts using pH paper or universal indicator.

• Comparing the pH of solutions of strong and weak acids of same concentration. Study the pH change in the titration of a strong base

using universal indicator.

2. Study the pH change by common-ion in case of weak acids and weak bases.

D. Chemical Equilibrium

One of the following experiments:

1. Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either of the ions.

2. Study the shift in equilibrium between [Co(H2O)6]2+ and chloride ions by changing the concentration of either of the ions.

E. Quantitative Estimation

1. Using a mechanical balance/electronic balance.

2. Preparation of standard solution of Oxalic acid.

3. Determination of strength of a given solution of Sodium hydroxide by titrating it against standard solution of Oxalic acid.

4. Preparation of standard solution of Sodium carbonate.

5. Determination of strength of a given solution of hydrochloric acid by titrating it against standard Sodium Carbonate solution.

F. Qualitative Analysis

1. Determination of one anion and one cation in a given salt

**Cation:**

$Pb^{2+}$, $Cu^{2+}$ $As^{3+}$, $Al^{3+}$, $Fe^{3+}$, $Mn^{2+}$, $Zn^{2+}$, $Ni^{2+}$, $Ca^{2+}$, $Sr^{2+}$, $Ba^{2+}$, $Mg^{2+}$, $NH_4^+$

**Anions:**

$(CO_3)^{2-}$, $S^{2-}$, $(SO_3)^{2-}$, $(NO_2)^-$, $(SO_4)^{2-}$, $Cl^-$, $Br^-$, $I^-$, $(PO_4)^{3-}$, $(C_2O_4)^{2-}$, $CH_3COO^-$, $NO_3^-$

**(Note: Insoluble salts excluded)**

2. Detection of -Nitrogen, Sulphur, Chlorine in organic compounds.

(Note: Insoluble salts excluded)

2. Detection of -Nitrogen, Sulphur, Chlorine in organic compounds.

G. PROJECTS

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects

- Checking the bacterial contamination in drinking water by testing sulphide ion
- Study of the methods of purification of water

• Testing the hardness, presence of Iron, Fluoride, Chloride, etc., depending upon the regional variation in drinking water and study of causes of presence of these ions above permissible limit (if any).

• Investigation of the foaming capacity of different washing soaps and the effect of addition of Sodium carbonate on it

• Study the acidity of different samples of tea leaves.

• Determination of the rate of evaporation of different liquids.

• Study the effect of acids and bases on the tensile strength of fibers.

• Study of acidity of fruit and vegetable juices.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | BIOLOGY |
| **TEXT BOOKS** | Biology Textbook Class XI (NCERT) |
| **REFERENCE BOOKS** | NIL |

**SYLLABUS:**

| UNIT | TITLE | DISTRIBUTION OF MARKS |
|---|---|---|
| I | Diversity of Living Organisms | 15 |
| II | Structural Organization in Plants and Animals | 10 |
| III | Cell: Structure and Function | 15 |
| IV | Plant Physiology | 12 |
| V | Human Physiology | 18 |
| **TOTAL** | | **70** |

| **MONTH: JULY 2022** | **PERCENTAGE OF SYLLABUS COVERED: 21%** |
|---|---|

**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).

| **MONTH: AUGUST 2022** | **PERCENTAGE OF SYLLABUS COVERED: 15.7%** |
|---|---|

**UNIT II: STRUCTURAL ORGANIZATION IN ANIMALS AND PLANT**

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

| **MONTH: SEPTEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 15.7%** |
|---|---|

**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; nucleus.

**Chapter-9: Biomolecules**
Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, 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.

| **MONTH: OCTOBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 8%** |
|---|---|

**UNIT IV: PLANT PHYSIOLOGY**

**Chapter-13: 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; C3 and C4 pathways; factors affecting photosynthesis.

**Chapter-14: Respiration in Plants**
Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic).

| **MONTH: NOVEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 8%** |
|---|---|

**UNIT IV: PLANT PHYSIOLOGY (contd.)**

**Chapter-14: Respiration in Plants (contd.)**
Energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

**Chapter-15: 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; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA;

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 15.7% |
|---|---|

**UNIT V: HUMAN PHYSIOLOGY**

**Chapter-17: 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-18: 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-19: 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.

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10.5% |
|---|---|

**UNIT V: HUMAN PHYSIOLOGY (contd.)**

**Chapter-20: 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-21: 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

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 5.4% |
|---|---|

**UNIT V: HUMAN PHYSIOLOGY (contd.)**

**Chapter-22: 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. |

| **MONTH: MARCH 2023** | **PERCENTAGE OF SYLLABUS COVERED: 100%** |
|---|---|
| Examination | |

# PRACTICALS

**Recommended Lab Manual:**

Comprehensive Lab Manual in Biology for Class XI, Published by Laxmi Publications

**Evaluation Scheme - Max. Marks: 30**

| Evaluation Scheme | MARKS |
|---|---|
| One Major experiment (1,3,7,8) | 5 |
| One Minor experiment (6,9,10,11,12,13) | 4 |
| Slide Preparation (2,4,5) | 5 |
| Spotting | 7 |
| Practical Record + Viva Voice | 4 |
| Investigatory Project and its Viva | 5 |
| **Total** | **30** |

**A: List of Experiments**

1. Study and describe locally available common flowering plants, from family Solanaceae 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).

2. Preparation and study of T.S. of dicot and monocot roots and stems (primary).

3. Study of osmosis by potato osmometer.

4. Study of plasmolysis in epidermal peels (e.g. Rhoeo/lily leaves or flashy scale leaves of onion bulb).

5. Study of distribution of stomata on the upper and lower surfaces of leaves.

6. Comparative study of the rates of transpiration in the upper and lower surfaces of leaves.

7. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.

8. Separation of plant pigments through paper chromatography.

9. Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.

10. Test for presence of urea in urine.

11. Test for presence of sugar in urine.

12. Test for presence of albumin in urine.

13. Test for presence of bile salts in urine.

**B. Study and Observe the following (spotting):**

1. Parts of a compound microscope.

2. Specimens/slides/models and identification with reasons - Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.

3. Virtual specimens/slides/models and identifying features of - Amoeba, Hydra, liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.

4. Mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.

5. Different types of inflorescence (cymose and racemose).

6. Human skeleton and different types of joints with the help of virtual images/models only.

| SYLLABUS 2022- 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | ECONOMICS |
| **TEXT BOOKS** | Statistics for Economics, NCERT<br>Introduction to Micro Economics, NCERT (New Edition) |
| **REFERENCE BOOKS** | Statistics for Economics by Sandeep Garg<br>Introductory Micro Economics, Sandeep Garg |

**SYLLABUS:**

| S.no | Unit | Distribution of Marks |
|---|---|---|
| **Part A** | **Introductory Microeconomics** | |
| 1 | Introduction | 4 |
| 2 | Consumer's equilibrium and Demand | 15 |
| 3 | Producer's Behavior and Supply | 15 |
| 4 | Forms of Market and Price determination under prefect competition with simple applications. | 6 |
| **Total** | | **40** |
| **Part B** | **Statistics** | |
| 1<br>2 | Introduction<br>Collection, Organization and Presentation of data | 15 |
| 3 | Statistical Tools and Interpretation | 25 |
| **Total** | | **40** |
| **Practical** | **Project Work** | **20** |
| **Grand Total** | | **100** |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**Unit 4 (Microeconomics): 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 (Microeconomics): 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) and conditions of consumer's equilibrium.

**UNIT 1 (Statistics)**
**Introduction**

**UNIT 2 (Statistics)**
**Collection of Data**
Sources of data- primary and secondary; how basic data is collected; methods of collecting data; some important sources of secondary data; Census of India and NSSO.

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**UNIT 2 (Statistics)**
**Organization of data**
Meaning and types of variables; frequency distribution.

**Unit 5 (Microeconomics): Consumer's Equilibrium and Demand**
Demand, market demand, determinants of demand, demand schedule, demand curve, 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

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 5 % |
|---|---|

**Unit 6 (Microeconomics): Supply**

Market supply, determinants of supply, supply schedule, supply curve, movements along and shifts in supply curve.

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**Unit 6 (Microeconomics) Supply**

Price elasticity of supply; Measurement of price elasticity of supply- percentage-change method

**Unit 2 (Statistics)**
**Presentation of Data**
Tabular presentation and diagrammatic presentation of data:

i. Geometric forms (bar diagrams and pie diagrams)

ii. Frequency distributions (histogram, polygon and ogives)

iii. Arithmetic line graphs (time series graph)

**UNIT 3 (Statistics) : Statistical Tools and Interpretation**

**Measures of Central Tendency**
Arithmetic Mean (simple and weighted)

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**UNIT 3 (Statistics): Statistical tools and interpretation**

**Measures of Central Tendency**
Median and mode.

**Unit 6 (Microeconomics): Producer Behavior and Supply**

Production function: Short Run and Long Run, Total Product, Average Product and Marginal Product. Short run Returns to a Factor.

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 20 % |
|---|---|

**Unit 6 (Microeconomics): Producer Behavior and Supply**

Cost and Revenue: Short run costs - total cost, total fixed cost, total variable cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationship.

Revenue - total, average and marginal revenue.

Producer's equilibrium-meaning and its conditions in terms of marginal revenue-marginal cost.

**Project Work**

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Unit 7 (Microeconomics): 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 tools of Demand and Supply: Price ceiling, price floor.

**Unit 3 (Statistics)**

**Correlation**
Meaning, scatter diagrams, measures of correlation – Karl Pearson's method (two variables ungrouped data), Spearman's rank correlation.

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 5 % |
|---|---|

**Unit 3 (Statistics)**
**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.

**Revision**

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | COMPUTER SCIENCE |
| **TEXT BOOKS** | NCERT |
| **REFERENCE BOOKS** | BY SUMITA ARORA (DHANPAT RAI) |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| I | Computer Systems and Organisation | 10 |
| II | Computational Thinking and Programming - 1 | 45 |
| III | Society, Law and Ethics | 15 |
| | **THEORY** | **70** |
| | **PRACTICAL** | **30** |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|
| Computer Systems and Organisation<br>● 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)<br>● Types of software: system software (operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler & interpreter), application software<br>● Operating system (OS): functions of operating system, OS user interface<br>Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits | |

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|
| ● Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems.<br>● Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32)<br>Computational Thinking and Programming – 1<br>● 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<br>● 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 | |

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5% |
|---|---|
| Knowledge of data types: number (integer, floating point, complex), boolean, sequence (string, list, tuple), none, mapping (dictionary), mutable and immutable data types<br>● Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators(is, is not), membership operators(in, not in)<br>● 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

| **MONTH: OCTOBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12.5 %** |
|---|---|
| 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() | |

| **MONTH: NOVEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12.5 %** |
|---|---|
| ● 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<br><br>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 tupletuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple. | |

| **MONTH: DECEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12.5 %** |
|---|---|
| Dictionary: introduction, accessing itemsin 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<br><br>Introduction to Python modules: Importing math module (pi, e, sqrt, ceil, floor, pow, fabs, sin, cos, tan); random module (random, randint, randrange), | |

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|
| Statistics module (mean, median, mode).<br>Society, Law and Ethics<br>● Digital Footprints<br>● Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes<br>● 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) | |

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|
| Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime<br>● Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying.<br>● Safely accessing web sites: malware, viruses, trojans, adware<br>● E-waste management: proper disposal of used electronic gadgets<br>● Indian Information Technology Act (IT Act)<br>● Technology & Society: Gender and disability issues while teaching and using computers | |

**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.

● Given two integers x and n, compute $x^n$

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

- $1 + x + x^2 + x^3 + x^4 + \cdots x^n$
- $1 - x + x^2 - x^3 + x^4 - \cdots x^n$
- $x + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} + \cdots \frac{x^n}{n}$
- $x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \cdots \frac{x^n}{n!}$

● Input a number and check if the number is a prime or composite number.

● Determine whether a number is a perfect number, an Armstrong number or a

palindrome.

- 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 test if a number is equal to the sum of the cubes of its digits. Find the smallest and largest such number from the given list of numbers.
- Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have marks above 75.

| SYLLABUS 2022 – 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | ACCOUNTANCY |
| **TEXT BOOKS** | ACCOUNTANCY-NCERT |
| **REFERENCE BOOKS** | D.K.GOEL |

**SYLLABUS:**

| **S. NO.** | **UNIT / CHAPTER** | **DISTRIBUTION OF MARKS** |
|---|---|---|
| | | |
| | | **MARKS** |
| 1 | **Part A: FINANCIAL ACCOUNTING-I** | 12 |
| | **UNIT 1** | |
| | **THEORETICAL FRAMEWORK:** | |
| | INTRODUCTION TO ACCOUNTING | |
| | THEORY BASE OF ACCOUNTING | |
| 2 | **UNIT 2**<br>**ACCOUNTING PROCESS:** | 44 |
| | RECORDING OF BUSINESS TRANSACTIONS,BANK RECONCILIATION STATEMENT, DEPRECIATION, PROVISIONS AND RESERVES | |
| | TRIAL BALANCE AND RECTIFICATION OF ERRORS | |
| | **Part B: FINANCIAL ACCOUNTING-II** | |
| 4 | **UNIT 3**<br>FINANCIAL STATEMENTS OF SOLE PROPRIETORSHIP | 24 |
| | **TOTAL** | 80 |
| | **PROJECT (PART – 2)** | **20** |
| | **TOTAL** | **100** |

| **MONTH: JULY 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12 %** |
|---|---|

## Unit 1: Theoretical Framework

**Introduction to Accounting :**

Basic accounting terms: business transaction, account, capital, drawings, liability (Non - current and current); asset (Non - current; tangible and intangible assets and current assets), receipts (capital and revenue), expenditure (capital, revenue and deferred), expense, income, profits, gains and losses, purchases, purchases returns, sales, sales returns, stock, trade receivables (debtors and bills receivable), trade payables (creditors and bills payable), goods, cost, vouchers, discount - trade and cash

**Introduction to Accounting :**

- Accounting: objectives, advantages and limitations.
- types of accounting information; users of accounting information and their needs.
- Fundamental accounting assumptions: going concern, consistency, and accrual.
- Accounting principles: accounting entity, money measurement, accounting period, full disclosure, materiality, prudence, cost concept, matching concept and dual aspect.
- Double entry system of accounting.
- Bases of accounting - cash basis and accrual basis.

- Accounting Standards and IFRS (International Financial Reporting Standards): Concept and Objectives
- Goods and services tax : Characteristics and objectives

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 25 % |
|---|---|

## Unit 2: Accounting Process and Special Accounting Treatment

- Origin of transactions- source documents (invoice, cash memo, pay in slip, cheque), preparation of vouchers - cash (debit and credit) and non cash (transfer).
- Journal
- Ledger - format, posting from journal, cash book and other special purpose books, balancing of accounts.
  - Trial balance: objectives and preparation (Scope: Trial Balance with balance method only)
- Cash Book: Simple Cash Book, Cash Book with Discount Column and Cash Book with Bank and Discount Columns, Petty Cash Book.
- Other books: purchases book, sales book, purchases returns book, sales returns book and journal proper.

**Note: including simple GST calculations**

**PROJECT WORK**

Comprehensive project starting with journal entries regarding any sole proprietorship business, ledger and trial balance

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 9 % |
|---|---|

- Preparation of Bank Reconciliation Statement :need and preparation.

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Depreciation, Provisions and Reserves**

- Depreciation: concept need and factors affecting depreciation; methods of computation of depreciation: straight line method, written down value method (excluding change in method), Accounting treatment of depreciation
  i. Charging to asset account
  ii. Creating provision for depreciation/accumulated depreciationaccount
- Provisions and reserves: concept, objectives and difference between provisions and reserves; types of reserves- revenue reserve, capital reserve, general reserve and specific reserves.

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Rectification of Errors**

- Errors: types-errors of omission, commission, principles, and compensating; their effect on Trial Balance.
- Detection and rectification of errors; preparation of suspense account.

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 9 % |
|---|---|

**Part B: Financial Accounting :**

**Unit 3: Financial Statements of Sole Proprietorship**

- Financial Statements: objective and importance.
- Profit and loss account: gross profit, operating profit and net profit.
- Balance Sheet: need, grouping, marshalling of assets and liabilities.

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 20 % |
|---|---|

**Part B: Financial Accounting :**

**Unit 3: Financial Statements of Sole Proprietorship**

- Adjustments in preparation of financial statements : with respect to closing stock, outstanding expenses, prepaid expenses, accrued income, income received in advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, manager's commission,abnormal loss, goods taken for personal use and goods distributed as free samples.
- Preparation of Trading and Profit and Loss Account and Balance Sheet of sole proprietorship.

**PROJECT WORK**

Comprehensive project starting with journal entries regarding any sole proprietorship business, ledger and trial balance, Trading ,Profit and Loss A/c and Balance Sheet

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 5% |
|---|---|

**Part B: Financial Accounting :**

**Unit 3: Financial Statements of Sole Proprietorship**

**(CONTINUED)**

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | BUSINESS STUDIES |
| **TEXT BOOKS** | Business studies - XI- NCERT |
| **REFERENCE BOOKS** | |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| | **Part A: Foundations of Business**<br>1. Nature and Purpose of Business<br>2. Forms of Business Organisations<br>3. Public, Private and Global Enterprises<br>4. Business Services<br>5. Emerging Modes of Business<br>6. Social Responsibility of Business and Business Ethics | <br><br>**16**<br><br>**14**<br><br>**10** |
| | **Part B: Finance and Trade**<br>7. Sources of Business Finance<br>8. Small Business<br>9. Internal Trade<br>10. International Business<br>11. Project Work | <br>**20**<br><br>**20**<br><br>**20** |
| | **Total** | **100** |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Unit 1: Nature and Purpose of Business**

- Concept and characteristics of business.
- Business, profession and employment -Meaning and their distinctive features.
- Objectives of business - Economic and social, role of profit in business
- Classification of business activities: Industry and Commerce.
- Industry - types: primary, secondary, tertiary - Meaning and sub types
- Commerce - trade: types (internal, external, wholesale and retail; and auxiliaries to trade: banking, insurance, transportation, warehousing, communication, and advertising.
- Business risks - Meaning, nature and cause

**Unit 1: Nature and Purpose of Business**

History of Commerce in India: Indigenous Banking System, Rise of Intermediaries, Transport, Trading Communities: Merchant Corporations, Major Trade Centres, Major Imports and Exports, Position of Indian Sub-Continent in the World Economy

**Forms of Business organizations**

- Sole Proprietorship- meaning, features, merits and limitations.
- Hindu Undivided Family Business: Concept

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**Forms of Business organizations**

• Partnership- Features, types, merits and limitations of partnership and partners, registration of a partnership firm, partnership deed. Type of partners.
• Cooperative Societies- features, types, merits and limitations.
• Company: -features, merits and limitations. private and public company and one man company – concept
Formation of a company- four stages, important documents used in formation.
. Choice of form of business organization

**Public, Private and Global Enterprises**

• Private sector and public sector enterprises.
• Forms of public sector enterprises: features, merits and limitations of departmental undertakings, statutory corporation and Government Company.
• Multinational Company – Features .Joint ventures, Public private partnership – Concept

- Meaning and types

• Banking: Types of bank accounts- savings, current, recurring, fixed deposit and multiple option deposit account
• Banking services with particular reference to issue of bank draft, banker's cheque (pay order), bank overdraft, cash credits and e- banking. Types of digital payments

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

• Insurance: principles, concept of life, health, fire and marine insurance.
• Postal services: mail, registered post, parcel, speed post and courier

**Emerging Modes of Business**

• E-business – Concept, scope and benefits

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Social Responsibility of Business and Business Ethics**

• Concept of social responsibility
• Case for social responsibility
• Responsibility towards owners, investors, consumers, employees, government and community
• Environment protection - role of business.
business ethics - Meaning and basic elements of business ethics

**Sources of Business Finance**

• Concept of business finance
• Owner's funds - equity shares, preference share, GDR, ADR, IDR and retained earnings -concept.

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**Sources of Business Finance**

• Borrowed funds: debentures and bonds, loan from financial institution, loans from commercial banks, public deposits, trade credit, ICD (inter corporate deposits).

**Small Business**

- Entrepreneurship Development (ED):Concept, Characteristics and Need Process Entrepreneurship Development: Start-up India Scheme, ways to fund start-up
  Intellectual Property Rights and Entrepreneurship

• Small scale enterprise as defined by MSMED Act 2006 (Micro, Small and Medium Enterprise Development Act).

• Role of small business in India with special reference to rural areas.

• Government schemes and agencies for small scale industries: (National Small Industries Corporation) and DIC (District Industrial Centre) with special reference to rural, backward and
hilly areas.

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 30 % |
|---|---|

**Internal Trade**

- GST (Goods and Services Tax): Concept and key-features
- Internal trade - meaning and types

• Services rendered by a wholesaler and a retailer

• Types of retail -trade - Itinerant and small scale fixed shops

• Large scale retailers - Departmental stores, chain store

PROJECT WORK

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 7 % |
|---|---|

**International Trade**

• Meaning, difference between internal trade and external trade: Meaning and characteristics of international trade.

• Export Trade - Meaning and procedure of Export Trade

• Import Trade - Meaning, and procedure

• Documents involved in International Trade; indent, letter of credit, shipping order,
shipping bills, mate's receipt (DA/DP)

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 3 % |
|---|---|

**International Trade**

• World Trade Organization (WTO) meaning and objectives

**Revision work**

| MONTH: MARCH 2023 | PERCENTAGE OF SYLLABUS COVERED: _____ % |
| --- | --- |
| ANNUAL EXAM | |

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | INFORMATICS PRACTICES |
| **TEXT BOOKS** | NCERT |
| **REFERENCE BOOKS** | SUMITA ARORA |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| 1 | Introduction to Computer System | 10 |
| 2 | Introduction to Python | 25 |
| 3 | Database concepts and the Structured Query Language | 30 |
| 4 | Introduction to Emerging Trends | 5 |
| 5 | Practical | 30 |
| | Total | 100 |
| | | |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|
| Introduction to Computer System<br>Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices.<br>Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns. | |

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|
| Software: purpose and types – system and application software, generic and specific purpose software.<br>Introduction to Python<br>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 and comments, input and output statements, data type conversion, debugging. | |

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5 % |
|---|---|
| Control Statements: if-else, for loop<br>Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions. | |

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5 % |
|---|---|
| Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions. | |

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5 % |
|---|---|
| Database concepts and the Structured Query Language<br>Database Concepts: Introduction to database concepts and its need, Database Management System.<br>Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key<br>Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types | |

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5 % |
|---|---|
| Data Definition: CREATE TABLE<br>Data Query:SELECT,FROM,WHERE<br>Data Manipulation:INSERT | |

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|
| Introduction to the Emerging Trends:<br>Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities | |

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|
| Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.<br>Revision | |

Suggested Practical List

Programming in Python

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.

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 number of occurrences of a given alphabet in each string.

15. Create a dictionary to store names of states and their capitals.

16. Create a dictionary of students to store names and marks obtained in 5 subjects.

17. To print the highest and lowest values in the dictionary.

Data Management: SQL Commands

18. To create a database

19. To create student table with the student id, class, section, gender, name, dob, and marks as attributes where the student id is the primary key.

20. To insert the details of at least 10 students in the above table.

21. To display the entire content of table.

22. To display Rno, Name and Marks of those students who are scoring marks more than 50.

23. To 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.

**WORK EDUCATION**

**2022-23**

1. FUN WITH EXCEL/ SCIENCE GURU
2. MY OWN KITCHEN GARDEN/ INDOOR OXY BOOSTERS
3. WEB DEVELOPMENT
4. CYBER SECURITY (ONLINE RESPONSIBILITY)
5. INTELLUCTUAL PROPERTY RIGHTS/CYBER SAFETY ACTIVITY
6. ADMAD/ LOGO BOUTIQUE
7. FOOD FESTIA
8. PREPARING HAPPINESS BOX FOR OUR HELPERS
9. KAVI SAMMELAN
10. PUPPET MAKERS

## GENERAL STUDIES

## CLASS XI

**AUGUST**

**UNDERSTANDING SOCIAL STRUCTURE**

ACTIVITY: work in groups of 5-6 and present a glimpse of Indian culture by preparing collage

The objectives of this unit are to:

1. Acquaint the students with the basic and distinctive features of the society they live in
2. Enable the students to understand different types of social institutions of their society.
3. Understand the functions and significance of different social institutions of Indian society

**January**

**NATIONAL UNITY**

ACTIVITY: Collect passages/quotes with universal messages from world literature and these may be posted on display board.

The objectives of this unit are:

1. Understanding the meaning and importance of national integration.
2. Role of national movement in national integration.
3. Promoting national integration.

# PHYSICAL EDUCATION 2022- 2023

## SYLLABUS CLASS XI

**Game/sport**

**JULY 2022**

**INTER HOUSE BASKET BALL**

1 LATEST GENERAL RULES OF THE GAMES/SPORTS (ANY ONE GAME/SPORT OF STUDENTS' CHOICE OFFERED BY THE SCHOOL).

| GAMES | DESCRIPTIONS |
|---|---|
| ATHLETIC | 1 SHORT DISTANCE RACES – A) 100 MTS, B) 200 MTS.,C) 400 MTS |
| BASKETBALL | DIMENSION OF COURT,FRONT,BACK COURT RECTRICTED AREA,FREE THROWS |
| BADMINTON | BASIC SHOTS,ROTATION SYSTEM, |
| CRICKET | BASIC BOWLING ACTION ,BATTING – GRIP, HOLD, STANCE& FOLLOW THROUGH, BOWING CREASE, BATTING CREASE,POPPING CREASE |
| CHESS | BASIC RULES OF CHESS,SET UP ,MOVEMENT&CHECK |
| FOOTBALL | RULES & REGULATIONS OF THE GAME.2. MEASUREMENT OF THE GROUND. |
| ROPE SKIPPING | CRISS CROSS |
| SWIMMING | FLOATING, BREATHING, KICKING, PADDLING, ARM PULL,25 MTS FREE STYLE |
| TENNIS | GRIP, STANCE, UNDER HAND DRIVE, UNDER ARM SERVICE |
| VOLLEY BALL | BASIC RULES & REGULATIONS ,SERVING &BLOCKING |
| YOGA | 1. MEANING OF YOGA<br>2 SITTING ASANA -- A. NAUKASANA<br>3 STANDING ASANA A. TRIKONASANA,VRIKASANA |

**AUGUST 2022**

**ONLINE INTER HOUSE VOLLEYBALL**

FUNDAMENTAL SKILLS OF GAME/SPORT (ANY ONE GAME/SPORT OF STUDENT'S CHOICE OFFERED BY THE SCHOOL).

**SEPTEMBER 2022** RELATED SPORT TERMINOLOGY.

**OCTOBER 2022** CBSE TOURNAMENTS PRACTICE & MATCHES

**NOVEMBER 2022** IMPORTANT NATIONAL LEVEL TOURNAMENTS & THEIR VENUES.

INTER HOUSE CHESS

GAMES DESCRIPTIONS

| GAMES | DESCRIPTIONS |
|---|---|
| ATHLETIC | 1 SHORT DISTANCE RACES – A) 100 MTS, B) 200 MTS.,C) 400 MTS |
| BASKETBALL | DIMENSION OF COURT,FRONT,BACK COURT RECTRICTED AREA,FREE THROWS |
| BADMINTON | BASIC SHOTS,ROTATION SYSTEM, |
| CRICKET | BASIC BOWLING ACTION ,BATTING – GRIP, HOLD, STANCE& FOLLOW THROUGH, BOWING CREASE, BATTING CREASE,POPPING CREASE |
| CHESS | BASIC RULES OF CHESS,SET UP ,MOVEMENT&CHECK |
| FOOTBALL | RULES & REGULATIONS OF THE GAME.2. MEASUREMENT OF THE GROUND. |
| ROPE SKIPPING | CRISS CROSS |
| SWIMMING | FLOATING, BREATHING, KICKING, PADDLING, ARM PULL,25 MTS FREE STYLE |
| TENNIS | GRIP, STANCE, UNDER HAND DRIVE, UNDER ARM SERVICE |
| VOLLEY BALL | BASIC RULES & REGULATIONS ,SERVING &BLOCKING |
| YOGA | MEDITATION |

**DECEMBER & JANU7ARY 2022 PRACTICE OF MATCHES . INTER HOUSE BADMINTON**

**JANUARY TO MARCH 2023**

ONLINE INTER HOUSE BADMINTON

TRACK & FIELD (ANY TWO EVENTS)

FUNDAMENTAL SKILLS OF GAME/SPORT (ANY ONE GAME/SPORT OF STUDENTS' CHOICE OFFERED BY THE SCHOOL).

LEAD-UP GAMES

| | |
|---|---|
| PHYSICAL FITNESS TEST | 50MTR. RUN, STANDING BROAD JUMP, PUSH-UP/MODIFIED PUSH-UP, SIT-UPS, SHUTTLE RUN . BODY MASS INDEX AND 600 METER RUN/WALK,<br>INTER HOUSE ACTIVITY FOR THE RESPECTIVE MONTH. |

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | MATHS (STANDARD) |
| **TEXT BOOKS** | NCERT MATHS |
| **REFERENCE BOOKS** | EXEMPLAR MATHS |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| 1. | Sets and Functions | 23 |
| 2. | Algebra | 25 |
| 3. | Coordinate Geometry | 12 |
| 4. | Calculus | 08 |
| 5. | Statistics and Probability | 12 |
| | Total | 80 |
| | Internal Assessment | 20 |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 20 % |
|---|---|

**Sets**

Sets and their representations. Empty set. Finite and Infinite sets. Equal sets. Subsets. Subsets of the set of real numbers especially intervals (with notations). and intersection of sets. Difference of sets. Complement of a set, Properties of Complement sets.

**Relations and Functions**

Ordered pairs, Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the reals with itself (uptoR × R × R).

Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special kind of relation from one set to another. Pictorial representation of a function, domain, co-domain and range of a function. Real valued function of the real variable, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum and greatest integer functions with their graphs. Sum, difference, product and quotients of functions.

**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 and sketch of their graphs. Expressing sin (x+ y) and cos (x + y) in terms of sin x, sin y,
cosx and cos y. Deducing the identities like following:

$\tan(x \pm y) = (\tan x \pm \tan y)/(1 \mp \tan x.\tan y)$ , $\cot(x \pm y) = (\cot x.\cot y \mp 1)/(\cot x \pm \cot y)$ , $\sin x + \sin y = 2\sin(x+y)/2 \cos(x-y)/2$ ,

$\cos x+\cos y = 2\cos(x+y)/2 \cos(x-y)/2$ , $\sin x-\sin y = 2\cos(x+y)/2 \sin(x-y)/2$ , $\cos x-\cos y = -2\sin(x+y)/2 \sin(x-y)/2$.

Identities related to sin2x, cos2x, tan2x, sin3x, cos3x and tan3x

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 20 % |
|---|---|

**Complex Numbers and Quadratic Equations**

Need for complex numbers, especially √(-1), to be motivated by inability to solve every quadratic equation. Brief description of algebraic properties of complex numbers. Argand plane

**Linear Inequalities**

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

**Binomial theorem**

Historical perspective, statement and proof of the Binomial theoremfor positive integral indices. Pascals triangle, simple applications.

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 6 % |
|---|---|

**Permutations and Combinations**

Fundamental principle of counting. Factorial n. Permutations and combinations derivation of formulae and their connections, simple applications.

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 16% |
|---|---|

**Sequence and Series**

Sequence and Series. Arithmetic Progression (A.P.), Arithmetic Mean (A.M.), Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P. Arithmetic and geometric series, infinite G.P. and its sum, geometric mean (G.M.). Relation between A.M. and G.M. Sum ton terms of the special series : ∑n , ∑n^2 and ∑n^3 .

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 16% |
|---|---|

**Straight Line**

Brief recall of 2-D from earlier classes, shifting of origin. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axes, point-slope form, slope-intercept form, two-point form, intercepts form and normal form. Distance of a point from a line.

**Conic Sections**

Sections of a cone: Circles, ellipse, parabola, hyperbola, a point, a straight line and 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.

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 16% |
|---|---|
| **Introduction to Three-dimensional Geometry** | |

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

**Statistics**

Measure of dispersion; mean deviation, variance and standard deviation of ungrouped/grouped data. Analysis of frequency distributions with equal means but different variances.

**Limits and Derivatives**

Derivative introduced as rate of change both as that of distance function and geometrically, intuitive idea of limit. lim┬(x→0)⁡〖log_e⁡〖(1+x)〗/x〗 , lim┬(x→0)⁡〖(e^x-1)/x〗. Definition of derivative, relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

| **MONTH: JANUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: 6%** |
|---|---|

**Probability**

Sample space, Events, Occurrence of events, not, and , or events, exhaustive events, mutually exclusive events, Axiomatic probability, connections with other theories of earlier classes, Algebra of events

| **MONTH: FEBRUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: _____ %** |
|---|---|

Revision for Annual exams.

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | Applied Mathematics |
| **TEXT BOOKS** | CBSE MATERIAL |
| **REFERENCE BOOKS** | ML AGGARWAL |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| 1. | Numbers, Quantification and Numerical Applications | 09 |
| 2. | Algebra | 15 |
| 3. | Mathematical Reasoning | 06 |
| 4. | Calculus | 10 |
| 5. | Probability | 08 |
| 6. | Descriptive Statistics | 12 |
| 7. | Basics of Financial Mathematics | 15 |
| 8. | Coordinate Geometry | 05 |
| | Total | 80 |
| | Internal Assessment | 20 |

| MONTH: JULY 2021 | PERCENTAGE OF SYLLABUS COVERED: 19% |
|---|---|

**UNIT I :Numbers, Quantification and Numerical Applications**

- Binary Numbers
- Indices, Logarithm and Antilogarithm
- Laws and properties of logarithms
- Simple applications of logarithm and antilogarithm
- Numerical problems on averages, calendar, clock, time, work and distance, mensuration, seating arrangement

**UNIT II:Algebra**

- Sets
- Representation of sets
- Types of sets and their notations
- Subsets
- Intervals
- Venn Diagrams
- Operations on sets

| MONTH: AUGUST 2021 | PERCENTAGE OF SYLLABUS COVERED: 15% |
|---|---|

**UNIT II:Algebra(cont.)**

- Relations :Ordered pairs,Cartesian product of two sets
- Domain and Range of relation
- Differentiate between Sequences and Series
- Arithmetic and Geometric progression
- Applications of AP and GP
- Permutations and Combinations:Factorial
- Fundamental Principle of Counting
- Applications of Permutations and combinations

| MONTH: SEPTEMBER 2021 | PERCENTAGE OF SYLLABUS COVERED: 11% |
|---|---|

**UNIT III:Mathematical Reasoning**

- Problems based on logical reasoning (coding-decoding, odd man out, blood relation, syllogism etc)

| MONTH: OCTOBER 2021 | PERCENTAGE OF SYLLABUS COVERED: 22% |
|---|---|

**UNIT IV : Calculus**

- Introducing functions
- Domain and Range of a function
- Types of functions (Polynomial function; Rational function; Composite function; Logarithm function; Exponential function; Modulus function; Greatest Integer function, Signum function)
- Graphical representation of functions
- Concept of limits and continuity of a function
- Instantaneous rates of change
- Differentiation as a process of finding derivative
- Derivatives of algebraic functions using Chain rule

| MONTH: NOVEMBER 2021 | PERCENTAGE OF SYLLABUS COVERED: 17 % |
|---|---|

**UNIT V: Probability**

- Random experiment, sample space, events, mutually exclusive events
- Independent and Dependent Events
- Law of Total Probability
- Bayes' Theorem

**UNIT VI:Descriptive Statistics**

- Measure of Dispersion
- Skewness and Kurtosis
- Percentile rank and quartile rank
- Correlation (Pearson and Spearman method of correlation)

| **MONTH: DECEMBER 2021** | **PERCENTAGE OF SYLLABUS COVERED: 10 %** |
|---|---|

**UNIT VII:Basics of Financial Mathematics**

- Interest and interest rate
- Accumulation with simple and compound interest
- Simple and compound interest rates with equivalency
- Effective rate of interest
- Present value, net present value and future value
- Annuities, calculating value of regular annuity
- Simple applications of regular annuities (up to 3 period)
- Tax, calculation of tax and simple applications of tax calculation in Goods and
- service tax, Income Tax
- Bills, tariff rates, fixed charge, surcharge, service charge
- Calculation and interpretation of electricity bill, water supply bill and other
- supply bills
- (Comparing interest rates on various types of savings; calculating income tax;
- electricity bills, water bill; service surcharge using realistic data)

| **MONTH: JANUARY 2022** | **PERCENTAGE OF SYLLABUS COVERED: 16%** |
|---|---|

**UNIT VIII: Coordinate Geometry**

- Straight Line
- Circles
- Parabola

| **MONTH: FEBRUARY 2022** | **PERCENTAGE OF SYLLABUS COVERED: _____ %** |
|---|---|

Revision For Annual exam

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | PHYSICS |
| **TEXT BOOKS** | NCERT |
| **REFERENCE BOOKS** | S L ARORA-NEW SIMPLIFIED PHYSICS |

| S. NO. | UNIT / CHAPTER | | DISTRIBUTION OF MARKS |
|---|---|---|---|
| 1. | **Unit–I** | **Physical World and Measurement** | 10 |
| | | Chapter–1: Physical World | |
| | | Chapter–2: Units and Measurements | |
| | **Unit-II** | **Kinematics** | |
| | | Chapter–3: Motion in a Straight Line | |
| 2. | **Laws of Motion** | | 12 |
| | Chapter–5: Laws of Motion | | |
| 3. | **Work, Energy and Power** | | 5 |
| | Chapter–6: Work, Energy and Power | | |
| 4. | **Motion of System of Particles and Rigid Body** | | 8 |
| | Chapter–7: System of Particles and Rotational Motion | | |
| 5. | **Gravitation** | | 5 |
| | Chapter–8: Gravitation | | |
| 6 | **Properties of Bulk Matter** | | 20 |
| | Chapter–9: Mechanical Properties of Solids | | |
| | Chapter–10: Mechanical Properties of Fluids | | |
| | Chapter–11: Thermal Properties of Matter | | |
| | **Thermodynamics** | | |
| | Chapter–12: Thermodynamics | | |
| | **Behaviour of Perfect Gases and Kinetic Theory of Gases** | | |
| | Chapter–13: Kinetic Theory | | |

| | | |
|---|---|---|
| 7 | **Oscillations and Waves**<br>Chapter–14: Oscillations<br>Chapter–15: Waves | 10 |

JULY 19 %

| **MONTH: JULY** | **PERCENTAGE OF SYLLABUS COVERED: 19%__** |
|---|---|

**Physical World and Measurement**

Chapter–1: Physical World Physics-scope and excitement; nature of physical laws; Physics, technology and society.
Chapter–2: Units and Measurements Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; 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: Position-time graph, speed and velocity. Elementary concepts of differentiation and integration for describing motion, uniform and non- uniform motion, average speed 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, relative velocity, 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 accelerationprojectile motion, uniform circular motion**.**

| **MONTH: AUGUST** | **PERCENTAGE OF SYLLABUS COVERED: 30%__** |
|---|---|

**Unit III: 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. (Recapitulation only)
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 banked road).
**Unit IV: 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: conservation of mechanical energy (kinetic and potential energies); 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**

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).

| **MONTH: SEPTEMBER** | **PERCENTAGE OF SYLLABUS COVERED: 11%** |
|---|---|
| **Unit VI: Gravitation**<br>Universal law of gravitation. Acceleration due to gravity (recapitulation only) and its variation with altitude and depth.<br>Gravitational potential energy and gravitational potential, escape velocity, orbital velocity of a satellite, Geo-stationary satellites. | |
| **MONTH: OCTOBER** | **PERCENTAGE OF SYLLABUS COVERED: _10____ %** |
| **Unit VII: Properties of Bulk Matter**<br>Elastic behaviour, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, 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 applications.<br>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. | |
| **MONTH: NOVEMBER** | **PERCENTAGE OF SYLLABUS COVERED: _10 %** |
| **Unit VII: Properties of Bulk Matter (CONTD)**Heat, temperature, (recapitulation only) 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.<br>Heat transfer-conduction, convection and radiation (recapitulation only), thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law, Greenhouse effect.<br>**Unit VIII: Thermodynamics**<br>Thermal equilibrium and definition of temperature (zeroth law of thermodynamics).Heat, work and internal energy. First law of thermodynamics. Isothermal and adiabatic processes.<br>Second law of thermodynamics: reversible and irreversible processes. Heat engine and refrigerator | |

| MONTH: DECEMBER | PERCENTAGE OF SYLLABUS COVERED: 10__ % |
|---|---|
| **Unit IX: Behaviour of Perfect Gases and Kinetic Theory of Gases**<br>Equation of state of a perfect gas, work done in compressing a gas.<br>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. | |
| **MONTH: JANUARY** | **PERCENTAGE OF SYLLABUS COVERED: __10 %** |
| **Unit X: Oscillations and Waves**<br>Periodic motion - time period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a spring-restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of<br>expression for its time period. Free, forced and damped oscillations (qualitative ideas only), resonance. | |
| **MONTH: FEBRUARY** | **PERCENTAGE OF SYLLABUS COVERED: __15%___** |
| **Unit X: Oscillations and Waves (contd)**<br>Wave motion. Transverse and longitudinal waves, speed of wave motion. 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-30 MARKS**

| | |
|---|---|
| **Two experiments one from each section** | **7+7 Marks** |
| **Practical record [experiments and activities]** | **5 Marks** |
| **One activity from any section** | **3 Marks** |
| **Investigatory Project** | **3 Marks** |
| **Viva on experiments, activities and project** | **5 Marks** |

**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 Calipers and hence find its volume.
2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.

**OR**

To determine volume of an irregular lamina using screw gauge.

3. To determine radius of curvature of a given spherical surface by a spherometer.
4. To determine the mass of two different objects using a beam balance.
5. To find the weight of a given body using parallelogram law of vectors.
6. Using a simple pendulum, plot its L-$T^2$ graph and use it to find the effective length of second's pendulum.

**OR**

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.

7. To study the relationship between force of limiting friction and normal reaction co- efficient of friction between a block and a horizontal surface.

## 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.

**Experiments**

1. To determine Young's modulus of elasticity of the material of a given wire.

**OR**

To find the force constant of a helical spring by plotting a graph between load and extension.

2. 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.
3. To determine the surface tension of water by capillary rise method.

**OR**

To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.

4. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.
5. To determine specific heat capacity of a given solid by method of mixtures.
6. To study the relation between frequency and length of a given wire under constant tension using sonometer.

**OR**

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

7. 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.

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | CHEMISTRY |
| **TEXT BOOKS** | Chemistry Part -I, Class-XI, Published by NCERT.<br>Chemistry Part -II, Class-XI, Published by NCERT. |
| **REFERENCE BOOKS** | |

**SYLLABUS:**

**Time:3Hours** **Total Marks70**

| S.NO | UNIT | PERIODS | MARKS |
|---|---|---|---|
| 1 | Some Basic Concepts of Chemistry | 18 | 7 |
| 2 | Structure of Atom | 20 | 9 |
| 3 | Classification of Elements and Periodicity in Properties | 12 | 6 |
| 4 | Chemical Bonding and Molecular Structure | 20 | 7 |
| 5 | Chemical Thermodynamics | 23 | 9 |
| 6 | Equilibrium | 20 | 7 |
| 7 | Redox Reactions | 9 | 4 |
| 8 | Organic Chemistry: Some basic Principles and Techniques | 20 | 11 |
| 9 | Hydrocarbons | 18 | 10 |
| | **TOTAL** | **160** | **70** |

| **MONTH: JULY 2022** | **PERCENTAGE OF SYLLABUS COVERED: __11___ %** |
|---|---|

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

| **MONTH: AUGUST 2022** | **PERCENTAGE OF SYLLABUS COVERED: _21____ %** |
|---|---|

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.

| **MONTH: SEPTEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: __11___ %** |
|---|---|

Unit IV: Chemical Bonding and Molecular Structure
Valence electrons, ionic bond, covalent bond, bond parameters, Lewis's 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.

| **MONTH: OCTOBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: __11___ %** |
|---|---|

Unit VI: Chemical Thermodynamics
Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics -internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction)

| **MONTH: NOVEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: __20___ %** |
|---|---|

Unit VII: Equilibrium
Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion

effect (with illustrative examples).
Unit VIII: Redox Reactions
Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

| **MONTH: DECEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: __11___ %** |
|---|---|

Unit XII: Organic Chemistry -Some Basic Principles and Techniques
General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

| **MONTH: JANUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: _10____ %** |
|---|---|

Unit XIII: Hydrocarbons
Classification of Hydrocarbons
Aliphatic Hydrocarbons:
Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.
Alkenes - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.
Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water.

| **MONTH: FEBRUARY 2023** | **PERCENTAGE OF SYLLABUS COVERED: __5___ %** |
|---|---|

**Unit XIII: Hydrocarbons (Continued..)**
Aromatic Hydrocarbons:
Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of the functional group in monosubstituted benzene. Carcinogenicity and toxicity.

**PRACTICALS**

**3 HOURS/ 30 Marks**

| Evaluation Scheme for Examination | Marks |
|---|---|
| Volumetric Analysis | 08 |
| Salt Analysis | 08 |
| Content Based Experiment | 06 |
| Project Work | 04 |
| Class record and viva | 04 |
| **Total** | **30** |

PRACTICAL SYLLABUS Total Periods: 60

Micro-chemical methods are available for several of the practical experiments, wherever possible such techniques should be used.

A. Basic Laboratory Techniques

1. Cutting glass tube and glass rod

2. Bending a glass tube

3. Drawing out a glass jet

4. Boring a cork

B. Characterization and Purification of Chemical Substances

1. Determination of melting point of an organic compound.

2. Determination of boiling point of an organic compound.

3. Crystallization of impure sample of any one of the following: Alum, Copper Sulphate, Benzoic Acid.

C. Experiments based on pH

1. Any one of the following experiments:

• Determination of pH of some solutions obtained from fruit juices, solution of known and varied concentrations of acids, bases and salts using pH paper or universal indicator.

• Comparing the pH of solutions of strong and weak acids of same concentration. Study the pH change in the titration of a strong base

using universal indicator.

2. Study the pH change by common-ion in case of weak acids and weak bases.

D. Chemical Equilibrium

One of the following experiments:

1. Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either of the ions.

2. Study the shift in equilibrium between [Co(H2O)6]2+ and chloride ions by changing the concentration of either of the ions.

E. Quantitative Estimation

1. Using a mechanical balance/electronic balance.

2. Preparation of standard solution of Oxalic acid.

3. Determination of strength of a given solution of Sodium hydroxide by titrating it against standard solution of Oxalic acid.

4. Preparation of standard solution of Sodium carbonate.

5. Determination of strength of a given solution of hydrochloric acid by titrating it against standard Sodium Carbonate solution.

F. Qualitative Analysis

1. Determination of one anion and one cation in a given salt

**Cation:**

$Pb^{2+}$, $Cu^{2+}$ $As^{3+}$, $Al^{3+}$, $Fe^{3+}$, $Mn^{2+}$, $Zn^{2+}$, $Ni^{2+}$, $Ca^{2+}$, $Sr^{2+}$, $Ba^{2+}$, $Mg^{2+}$, $NH_4^+$

**Anions:**

$(CO_3)^{2-}$, $S^{2-}$, $(SO_3)^{2-}$, $(NO_2)^-$, $(SO_4)^{2-}$, $Cl^-$, $Br^-$, $I^-$, $(PO_4)^{3-}$, $(C_2O_4)^{2-}$, $CH_3COO^-$, $NO_3^-$

**(Note: Insoluble salts excluded)**

2. Detection of -Nitrogen, Sulphur, Chlorine in organic compounds.

(Note: Insoluble salts excluded)

2. Detection of -Nitrogen, Sulphur, Chlorine in organic compounds.

G. PROJECTS

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects

- Checking the bacterial contamination in drinking water by testing sulphide ion
- Study of the methods of purification of water

• Testing the hardness, presence of Iron, Fluoride, Chloride, etc., depending upon the regional variation in drinking water and study of causes of presence of these ions above permissible limit (if any).

• Investigation of the foaming capacity of different washing soaps and the effect of addition of Sodium carbonate on it

• Study the acidity of different samples of tea leaves.

• Determination of the rate of evaporation of different liquids.

• Study the effect of acids and bases on the tensile strength of fibers.

• Study of acidity of fruit and vegetable juices.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | BIOLOGY |
| **TEXT BOOKS** | Biology Textbook Class XI (NCERT) |
| **REFERENCE BOOKS** | NIL |

**SYLLABUS:**

| UNIT | TITLE | DISTRIBUTION OF MARKS |
|---|---|---|
| I | Diversity of Living Organisms | 15 |
| II | Structural Organization in Plants and Animals | 10 |
| III | Cell: Structure and Function | 15 |
| IV | Plant Physiology | 12 |
| V | Human Physiology | 18 |
| **TOTAL** | | **70** |

| **MONTH: JULY 2022** | **PERCENTAGE OF SYLLABUS COVERED: 21%** |
|---|---|

**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).

| **MONTH: AUGUST 2022** | **PERCENTAGE OF SYLLABUS COVERED: 15.7%** |
|---|---|

**UNIT II: STRUCTURAL ORGANIZATION IN ANIMALS AND PLANT**

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

| **MONTH: SEPTEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 15.7%** |
|---|---|

**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; nucleus.

**Chapter-9: Biomolecules**
Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, 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.

| **MONTH: OCTOBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 8%** |
|---|---|

**UNIT IV: PLANT PHYSIOLOGY**

**Chapter-13: 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; C3 and C4 pathways; factors affecting photosynthesis.

**Chapter-14: Respiration in Plants**
Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic).

| **MONTH: NOVEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 8%** |
|---|---|

**UNIT IV: PLANT PHYSIOLOGY (contd.)**

**Chapter-14: Respiration in Plants (contd.)**
Energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

**Chapter-15: 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; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA;

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 15.7% |
|---|---|

**UNIT V: HUMAN PHYSIOLOGY**

**Chapter-17: 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-18: 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-19: 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.

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10.5% |
|---|---|

**UNIT V: HUMAN PHYSIOLOGY (contd.)**

**Chapter-20: 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-21: 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

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 5.4% |
|---|---|

**UNIT V: HUMAN PHYSIOLOGY (contd.)**

**Chapter-22: 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. |

| **MONTH: MARCH 2023** | **PERCENTAGE OF SYLLABUS COVERED: 100%** |
|---|---|
| Examination | |

# PRACTICALS

**Recommended Lab Manual:**

Comprehensive Lab Manual in Biology for Class XI, Published by Laxmi Publications

**Evaluation Scheme - Max. Marks: 30**

| Evaluation Scheme | MARKS |
|---|---|
| One Major experiment (1,3,7,8) | 5 |
| One Minor experiment (6,9,10,11,12,13) | 4 |
| Slide Preparation (2,4,5) | 5 |
| Spotting | 7 |
| Practical Record + Viva Voice | 4 |
| Investigatory Project and its Viva | 5 |
| **Total** | **30** |

**A: List of Experiments**

1. Study and describe locally available common flowering plants, from family Solanaceae 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).

2. Preparation and study of T.S. of dicot and monocot roots and stems (primary).

3. Study of osmosis by potato osmometer.

4. Study of plasmolysis in epidermal peels (e.g. Rhoeo/lily leaves or flashy scale leaves of onion bulb).

5. Study of distribution of stomata on the upper and lower surfaces of leaves.

6. Comparative study of the rates of transpiration in the upper and lower surfaces of leaves.

7. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.

8. Separation of plant pigments through paper chromatography.

9. Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.

10. Test for presence of urea in urine.

11. Test for presence of sugar in urine.

12. Test for presence of albumin in urine.

13. Test for presence of bile salts in urine.

**B. Study and Observe the following (spotting):**

1. Parts of a compound microscope.

2. Specimens/slides/models and identification with reasons - Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.

3. Virtual specimens/slides/models and identifying features of - Amoeba, Hydra, liverfluke, Ascaris, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.

4. Mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.

5. Different types of inflorescence (cymose and racemose).

6. Human skeleton and different types of joints with the help of virtual images/models only.

| SYLLABUS 2022- 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | ECONOMICS |
| **TEXT BOOKS** | Statistics for Economics, NCERT<br>Introduction to Micro Economics, NCERT (New Edition) |
| **REFERENCE BOOKS** | Statistics for Economics by Sandeep Garg<br>Introductory Micro Economics, Sandeep Garg |

**SYLLABUS:**

| S.no | Unit | Distribution of Marks |
|---|---|---|
| **Part A** | **Introductory Microeconomics** | |
| 1 | Introduction | 4 |
| 2 | Consumer's equilibrium and Demand | 15 |
| 3 | Producer's Behavior and Supply | 15 |
| 4 | Forms of Market and Price determination under prefect competition with simple applications. | 6 |
| **Total** | | **40** |
| **Part B** | **Statistics** | |
| 1<br>2 | Introduction<br>Collection, Organization and Presentation of data | 15 |
| 3 | Statistical Tools and Interpretation | 25 |
| **Total** | | **40** |
| **Practical** | **Project Work** | **20** |
| **Grand Total** | | **100** |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**Unit 4 (Microeconomics): 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 (Microeconomics): 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) and conditions of consumer's equilibrium.

**UNIT 1 (Statistics)**
**Introduction**

**UNIT 2 (Statistics)**
**Collection of Data**
Sources of data- primary and secondary; how basic data is collected; methods of collecting data; some important sources of secondary data; Census of India and NSSO.

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**UNIT 2 (Statistics)**
**Organization of data**
Meaning and types of variables; frequency distribution.

**Unit 5 (Microeconomics): Consumer's Equilibrium and Demand**
Demand, market demand, determinants of demand, demand schedule, demand curve, 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

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 5 % |
|---|---|

**Unit 6 (Microeconomics): Supply**

Market supply, determinants of supply, supply schedule, supply curve, movements along and shifts in supply curve.

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**Unit 6 (Microeconomics) Supply**

Price elasticity of supply; Measurement of price elasticity of supply- percentage-change method

**Unit 2 (Statistics)**
**Presentation of Data**
Tabular presentation and diagrammatic presentation of data:

i. Geometric forms (bar diagrams and pie diagrams)

ii. Frequency distributions (histogram, polygon and ogives)

iii. Arithmetic line graphs (time series graph)

**UNIT 3 (Statistics) : Statistical Tools and Interpretation**

**Measures of Central Tendency**
Arithmetic Mean (simple and weighted)

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**UNIT 3 (Statistics): Statistical tools and interpretation**

**Measures of Central Tendency**
Median and mode.

**Unit 6 (Microeconomics): Producer Behavior and Supply**

Production function: Short Run and Long Run, Total Product, Average Product and Marginal Product. Short run Returns to a Factor.

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 20 % |
|---|---|

**Unit 6 (Microeconomics): Producer Behavior and Supply**

Cost and Revenue: Short run costs - total cost, total fixed cost, total variable cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationship.

Revenue - total, average and marginal revenue.

Producer's equilibrium-meaning and its conditions in terms of marginal revenue-marginal cost.

**Project Work**

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Unit 7 (Microeconomics): 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 tools of Demand and Supply: Price ceiling, price floor.

**Unit 3 (Statistics)**

**Correlation**
Meaning, scatter diagrams, measures of correlation – Karl Pearson's method (two variables ungrouped data), Spearman's rank correlation.

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 5 % |
|---|---|

**Unit 3 (Statistics)**
**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.

**Revision**

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | COMPUTER SCIENCE |
| **TEXT BOOKS** | NCERT |
| **REFERENCE BOOKS** | BY SUMITA ARORA (DHANPAT RAI) |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| I | Computer Systems and Organisation | 10 |
| II | Computational Thinking and Programming - 1 | 45 |
| III | Society, Law and Ethics | 15 |
| | **THEORY** | **70** |
| | **PRACTICAL** | **30** |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|
| Computer Systems and Organisation<br>● 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)<br>● Types of software: system software (operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler & interpreter), application software<br>● Operating system (OS): functions of operating system, OS user interface<br>Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits | |

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|
| ● Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems.<br>● Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32)<br>Computational Thinking and Programming – 1<br>● 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<br>● 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 | |

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5% |
|---|---|
| Knowledge of data types: number (integer, floating point, complex), boolean, sequence (string, list, tuple), none, mapping (dictionary), mutable and immutable data types<br>● Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators(is, is not), membership operators(in, not in)<br>● 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

| **MONTH: OCTOBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12.5 %** |
|---|---|
| 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() | |

| **MONTH: NOVEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12.5 %** |
|---|---|
| ● 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<br><br>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 tupletuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple. | |

| **MONTH: DECEMBER 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12.5 %** |
|---|---|
| Dictionary: introduction, accessing itemsin 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<br><br>Introduction to Python modules: Importing math module (pi, e, sqrt, ceil, floor, pow, fabs, sin, cos, tan); random module (random, randint, randrange), | |

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|
| Statistics module (mean, median, mode).<br>Society, Law and Ethics<br>● Digital Footprints<br>● Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes<br>● 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) | |

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|
| Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime<br>● Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying.<br>● Safely accessing web sites: malware, viruses, trojans, adware<br>● E-waste management: proper disposal of used electronic gadgets<br>● Indian Information Technology Act (IT Act)<br>● Technology & Society: Gender and disability issues while teaching and using computers | |

**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.

● Given two integers x and n, compute $x^n$

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

- $1 + x + x^2 + x^3 + x^4 + \cdots x^n$
- $1 - x + x^2 - x^3 + x^4 - \cdots x^n$
- $x + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} + \cdots \frac{x^n}{n}$
- $x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \cdots \frac{x^n}{n!}$

● Input a number and check if the number is a prime or composite number.

● Determine whether a number is a perfect number, an Armstrong number or a

palindrome.

- 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 test if a number is equal to the sum of the cubes of its digits. Find the smallest and largest such number from the given list of numbers.
- Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have marks above 75.

| SYLLABUS 2022 – 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | ACCOUNTANCY |
| **TEXT BOOKS** | ACCOUNTANCY-NCERT |
| **REFERENCE BOOKS** | D.K.GOEL |

**SYLLABUS:**

| **S. NO.** | **UNIT / CHAPTER** | **DISTRIBUTION OF MARKS** |
|---|---|---|
| | | |
| | | **MARKS** |
| 1 | **Part A: FINANCIAL ACCOUNTING-I** | 12 |
| | **UNIT 1** | |
| | **THEORETICAL FRAMEWORK:** | |
| | INTRODUCTION TO ACCOUNTING | |
| | THEORY BASE OF ACCOUNTING | |
| 2 | **UNIT 2**<br>**ACCOUNTING PROCESS:** | 44 |
| | RECORDING OF BUSINESS TRANSACTIONS,BANK RECONCILIATION STATEMENT, DEPRECIATION, PROVISIONS AND RESERVES | |
| | TRIAL BALANCE AND RECTIFICATION OF ERRORS | |
| | **Part B: FINANCIAL ACCOUNTING-II** | |
| 4 | **UNIT 3**<br>FINANCIAL STATEMENTS OF SOLE PROPRIETORSHIP | 24 |
| | **TOTAL** | 80 |
| | **PROJECT (PART – 2)** | **20** |
| | **TOTAL** | **100** |

| **MONTH: JULY 2022** | **PERCENTAGE OF SYLLABUS COVERED: 12 %** |
|---|---|

## Unit 1: Theoretical Framework

**Introduction to Accounting :**

Basic accounting terms: business transaction, account, capital, drawings, liability (Non - current and current); asset (Non - current; tangible and intangible assets and current assets), receipts (capital and revenue), expenditure (capital, revenue and deferred), expense, income, profits, gains and losses, purchases, purchases returns, sales, sales returns, stock, trade receivables (debtors and bills receivable), trade payables (creditors and bills payable), goods, cost, vouchers, discount - trade and cash

**Introduction to Accounting :**

- Accounting: objectives, advantages and limitations.
- types of accounting information; users of accounting information and their needs.
- Fundamental accounting assumptions: going concern, consistency, and accrual.
- Accounting principles: accounting entity, money measurement, accounting period, full disclosure, materiality, prudence, cost concept, matching concept and dual aspect.
- Double entry system of accounting.
- Bases of accounting - cash basis and accrual basis.

- Accounting Standards and IFRS (International Financial Reporting Standards): Concept and Objectives
- Goods and services tax : Characteristics and objectives

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 25 % |
|---|---|

## Unit 2: Accounting Process and Special Accounting Treatment

- Origin of transactions- source documents (invoice, cash memo, pay in slip, cheque), preparation of vouchers - cash (debit and credit) and non cash (transfer).
- Journal
- Ledger - format, posting from journal, cash book and other special purpose books, balancing of accounts.
  - Trial balance: objectives and preparation (Scope: Trial Balance with balance method only)
- Cash Book: Simple Cash Book, Cash Book with Discount Column and Cash Book with Bank and Discount Columns, Petty Cash Book.
- Other books: purchases book, sales book, purchases returns book, sales returns book and journal proper.

**Note: including simple GST calculations**

**PROJECT WORK**

Comprehensive project starting with journal entries regarding any sole proprietorship business, ledger and trial balance

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 9 % |
|---|---|

- Preparation of Bank Reconciliation Statement :need and preparation.

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Depreciation, Provisions and Reserves**

- Depreciation: concept need and factors affecting depreciation; methods of computation of depreciation: straight line method, written down value method (excluding change in method), Accounting treatment of depreciation
  i. Charging to asset account
  ii. Creating provision for depreciation/accumulated depreciationaccount
- Provisions and reserves: concept, objectives and difference between provisions and reserves; types of reserves- revenue reserve, capital reserve, general reserve and specific reserves.

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Rectification of Errors**

- Errors: types-errors of omission, commission, principles, and compensating; their effect on Trial Balance.
- Detection and rectification of errors; preparation of suspense account.

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 9 % |
|---|---|

**Part B: Financial Accounting :**

**Unit 3: Financial Statements of Sole Proprietorship**

- Financial Statements: objective and importance.
- Profit and loss account: gross profit, operating profit and net profit.
- Balance Sheet: need, grouping, marshalling of assets and liabilities.

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 20 % |
|---|---|

**Part B: Financial Accounting :**

**Unit 3: Financial Statements of Sole Proprietorship**

- Adjustments in preparation of financial statements : with respect to closing stock, outstanding expenses, prepaid expenses, accrued income, income received in advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, manager's commission,abnormal loss, goods taken for personal use and goods distributed as free samples.
- Preparation of Trading and Profit and Loss Account and Balance Sheet of sole proprietorship.

**PROJECT WORK**

Comprehensive project starting with journal entries regarding any sole proprietorship business, ledger and trial balance, Trading ,Profit and Loss A/c and Balance Sheet

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 5% |
|---|---|

**Part B: Financial Accounting :**

**Unit 3: Financial Statements of Sole Proprietorship**

**(CONTINUED)**

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | BUSINESS STUDIES |
| **TEXT BOOKS** | Business studies - XI- NCERT |
| **REFERENCE BOOKS** | |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| | **Part A: Foundations of Business**<br>1. Nature and Purpose of Business<br>2. Forms of Business Organisations<br>3. Public, Private and Global Enterprises<br>4. Business Services<br>5. Emerging Modes of Business<br>6. Social Responsibility of Business and Business Ethics | <br><br>**16**<br><br>**14**<br><br>**10** |
| | **Part B: Finance and Trade**<br>7. Sources of Business Finance<br>8. Small Business<br>9. Internal Trade<br>10. International Business<br>11. Project Work | <br>**20**<br><br>**20**<br><br>**20** |
| | **Total** | **100** |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Unit 1: Nature and Purpose of Business**

- Concept and characteristics of business.
- Business, profession and employment -Meaning and their distinctive features.
- Objectives of business - Economic and social, role of profit in business
- Classification of business activities: Industry and Commerce.
- Industry - types: primary, secondary, tertiary - Meaning and sub types
- Commerce - trade: types (internal, external, wholesale and retail; and auxiliaries to trade: banking, insurance, transportation, warehousing, communication, and advertising.
- Business risks - Meaning, nature and cause

**Unit 1: Nature and Purpose of Business**

History of Commerce in India: Indigenous Banking System, Rise of Intermediaries, Transport, Trading Communities: Merchant Corporations, Major Trade Centres, Major Imports and Exports, Position of Indian Sub-Continent in the World Economy

**Forms of Business organizations**

- Sole Proprietorship- meaning, features, merits and limitations.
- Hindu Undivided Family Business: Concept

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**Forms of Business organizations**

• Partnership- Features, types, merits and limitations of partnership and partners, registration of a partnership firm, partnership deed. Type of partners.
• Cooperative Societies- features, types, merits and limitations.
• Company: -features, merits and limitations. private and public company and one man company – concept
Formation of a company- four stages, important documents used in formation.
. Choice of form of business organization

**Public, Private and Global Enterprises**

• Private sector and public sector enterprises.
• Forms of public sector enterprises: features, merits and limitations of departmental undertakings, statutory corporation and Government Company.
• Multinational Company – Features .Joint ventures, Public private partnership – Concept

- Meaning and types

• Banking: Types of bank accounts- savings, current, recurring, fixed deposit and multiple option deposit account
• Banking services with particular reference to issue of bank draft, banker's cheque (pay order), bank overdraft, cash credits and e- banking. Types of digital payments

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

• Insurance: principles, concept of life, health, fire and marine insurance.
• Postal services: mail, registered post, parcel, speed post and courier

**Emerging Modes of Business**

• E-business – Concept, scope and benefits

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|

**Social Responsibility of Business and Business Ethics**

• Concept of social responsibility
• Case for social responsibility
• Responsibility towards owners, investors, consumers, employees, government and community
• Environment protection - role of business.
business ethics - Meaning and basic elements of business ethics

**Sources of Business Finance**

• Concept of business finance
• Owner's funds - equity shares, preference share, GDR, ADR, IDR and retained earnings -concept.

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|

**Sources of Business Finance**

• Borrowed funds: debentures and bonds, loan from financial institution, loans from commercial banks, public deposits, trade credit, ICD (inter corporate deposits).

**Small Business**

- Entrepreneurship Development (ED):Concept, Characteristics and Need Process Entrepreneurship Development: Start-up India Scheme, ways to fund start-up
  Intellectual Property Rights and Entrepreneurship

• Small scale enterprise as defined by MSMED Act 2006 (Micro, Small and Medium Enterprise Development Act).

• Role of small business in India with special reference to rural areas.

• Government schemes and agencies for small scale industries: (National Small Industries Corporation) and DIC (District Industrial Centre) with special reference to rural, backward and
hilly areas.

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 30 % |
|---|---|

**Internal Trade**

- GST (Goods and Services Tax): Concept and key-features
- Internal trade - meaning and types

• Services rendered by a wholesaler and a retailer

• Types of retail -trade - Itinerant and small scale fixed shops

• Large scale retailers - Departmental stores, chain store

PROJECT WORK

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 7 % |
|---|---|

**International Trade**

• Meaning, difference between internal trade and external trade: Meaning and characteristics of international trade.

• Export Trade - Meaning and procedure of Export Trade

• Import Trade - Meaning, and procedure

• Documents involved in International Trade; indent, letter of credit, shipping order,
shipping bills, mate's receipt (DA/DP)

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 3 % |
|---|---|

**International Trade**

• World Trade Organization (WTO) meaning and objectives

**Revision work**

| MONTH: MARCH 2023 | PERCENTAGE OF SYLLABUS COVERED: _____ % |
| --- | --- |
| ANNUAL EXAM | |

| SYLLABUS 2022 - 2023 | |
|---|---|
| **CLASS** | XI |
| **NAME OF THE SUBJECT** | INFORMATICS PRACTICES |
| **TEXT BOOKS** | NCERT |
| **REFERENCE BOOKS** | SUMITA ARORA |

**SYLLABUS:**

| S. NO. | UNIT / CHAPTER | DISTRIBUTION OF MARKS |
|---|---|---|
| 1 | Introduction to Computer System | 10 |
| 2 | Introduction to Python | 25 |
| 3 | Database concepts and the Structured Query Language | 30 |
| 4 | Introduction to Emerging Trends | 5 |
| 5 | Practical | 30 |
| | Total | 100 |
| | | |

| MONTH: JULY 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|
| Introduction to Computer System<br>Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices.<br>Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns. | |

| MONTH: AUGUST 2022 | PERCENTAGE OF SYLLABUS COVERED: 15 % |
|---|---|
| Software: purpose and types – system and application software, generic and specific purpose software.<br>Introduction to Python<br>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 and comments, input and output statements, data type conversion, debugging. | |

| MONTH: SEPTEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5 % |
|---|---|
| Control Statements: if-else, for loop<br>Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions. | |

| MONTH: OCTOBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5 % |
|---|---|
| Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions. | |

| MONTH: NOVEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5 % |
|---|---|
| Database concepts and the Structured Query Language<br>Database Concepts: Introduction to database concepts and its need, Database Management System.<br>Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key<br>Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types | |

| MONTH: DECEMBER 2022 | PERCENTAGE OF SYLLABUS COVERED: 12.5 % |
|---|---|
| Data Definition: CREATE TABLE<br>Data Query:SELECT,FROM,WHERE<br>Data Manipulation:INSERT | |

| MONTH: JANUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|
| Introduction to the Emerging Trends:<br>Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities | |

| MONTH: FEBRUARY 2023 | PERCENTAGE OF SYLLABUS COVERED: 10 % |
|---|---|
| Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.<br>Revision | |

Suggested Practical List

Programming in Python

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.

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 number of occurrences of a given alphabet in each string.

15. Create a dictionary to store names of states and their capitals.

16. Create a dictionary of students to store names and marks obtained in 5 subjects.

17. To print the highest and lowest values in the dictionary.

Data Management: SQL Commands

18. To create a database

19. To create student table with the student id, class, section, gender, name, dob, and marks as attributes where the student id is the primary key.

20. To insert the details of at least 10 students in the above table.

21. To display the entire content of table.

22. To display Rno, Name and Marks of those students who are scoring marks more than 50.

23. To 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.

**WORK EDUCATION**

**2022-23**

1. FUN WITH EXCEL/ SCIENCE GURU
2. MY OWN KITCHEN GARDEN/ INDOOR OXY BOOSTERS
3. WEB DEVELOPMENT
4. CYBER SECURITY (ONLINE RESPONSIBILITY)
5. INTELLUCTUAL PROPERTY RIGHTS/CYBER SAFETY ACTIVITY
6. ADMAD/ LOGO BOUTIQUE
7. FOOD FESTIA
8. PREPARING HAPPINESS BOX FOR OUR HELPERS
9. KAVI SAMMELAN
10. PUPPET MAKERS

## GENERAL STUDIES

## CLASS XI

**AUGUST**

**UNDERSTANDING SOCIAL STRUCTURE**

ACTIVITY: work in groups of 5-6 and present a glimpse of Indian culture by preparing collage

The objectives of this unit are to:

1. Acquaint the students with the basic and distinctive features of the society they live in
2. Enable the students to understand different types of social institutions of their society.
3. Understand the functions and significance of different social institutions of Indian society

**January**

**NATIONAL UNITY**

ACTIVITY: Collect passages/quotes with universal messages from world literature and these may be posted on display board.

The objectives of this unit are:

1. Understanding the meaning and importance of national integration.
2. Role of national movement in national integration.
3. Promoting national integration.

# PHYSICAL EDUCATION 2022- 2023

## SYLLABUS CLASS XI

**Game/sport**

**JULY 2022**

**INTER HOUSE BASKET BALL**

1 LATEST GENERAL RULES OF THE GAMES/SPORTS (ANY ONE GAME/SPORT OF STUDENTS' CHOICE OFFERED BY THE SCHOOL).

| GAMES | DESCRIPTIONS |
|---|---|
| ATHLETIC | 1 SHORT DISTANCE RACES – A) 100 MTS, B) 200 MTS.,C) 400 MTS |
| BASKETBALL | DIMENSION OF COURT,FRONT,BACK COURT RECTRICTED AREA,FREE THROWS |
| BADMINTON | BASIC SHOTS,ROTATION SYSTEM, |
| CRICKET | BASIC BOWLING ACTION ,BATTING – GRIP, HOLD, STANCE& FOLLOW THROUGH, BOWING CREASE, BATTING CREASE,POPPING CREASE |
| CHESS | BASIC RULES OF CHESS,SET UP ,MOVEMENT&CHECK |
| FOOTBALL | RULES & REGULATIONS OF THE GAME.2. MEASUREMENT OF THE GROUND. |
| ROPE SKIPPING | CRISS CROSS |
| SWIMMING | FLOATING, BREATHING, KICKING, PADDLING, ARM PULL,25 MTS FREE STYLE |
| TENNIS | GRIP, STANCE, UNDER HAND DRIVE, UNDER ARM SERVICE |
| VOLLEY BALL | BASIC RULES & REGULATIONS ,SERVING &BLOCKING |
| YOGA | 1. MEANING OF YOGA<br>2 SITTING ASANA -- A. NAUKASANA<br>3 STANDING ASANA A. TRIKONASANA,VRIKASANA |

**AUGUST 2022**

**ONLINE INTER HOUSE VOLLEYBALL**

FUNDAMENTAL SKILLS OF GAME/SPORT (ANY ONE GAME/SPORT OF STUDENT'S CHOICE OFFERED BY THE SCHOOL).

**SEPTEMBER 2022** RELATED SPORT TERMINOLOGY.

**OCTOBER 2022** CBSE TOURNAMENTS PRACTICE & MATCHES

**NOVEMBER 2022** IMPORTANT NATIONAL LEVEL TOURNAMENTS & THEIR VENUES.

INTER HOUSE CHESS

GAMES DESCRIPTIONS

| GAMES | DESCRIPTIONS |
|---|---|
| ATHLETIC | 1 SHORT DISTANCE RACES – A) 100 MTS, B) 200 MTS.,C) 400 MTS |
| BASKETBALL | DIMENSION OF COURT,FRONT,BACK COURT RECTRICTED AREA,FREE THROWS |
| BADMINTON | BASIC SHOTS,ROTATION SYSTEM, |
| CRICKET | BASIC BOWLING ACTION ,BATTING – GRIP, HOLD, STANCE& FOLLOW THROUGH, BOWING CREASE, BATTING CREASE,POPPING CREASE |
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| TENNIS | GRIP, STANCE, UNDER HAND DRIVE, UNDER ARM SERVICE |
| VOLLEY BALL | BASIC RULES & REGULATIONS ,SERVING &BLOCKING |
| YOGA | MEDITATION |

**DECEMBER & JANU7ARY 2022 PRACTICE OF MATCHES . INTER HOUSE BADMINTON**

**JANUARY TO MARCH 2023**

ONLINE INTER HOUSE BADMINTON

TRACK & FIELD (ANY TWO EVENTS)

FUNDAMENTAL SKILLS OF GAME/SPORT (ANY ONE GAME/SPORT OF STUDENTS' CHOICE OFFERED BY THE SCHOOL).

LEAD-UP GAMES

| | |
|---|---|
| PHYSICAL FITNESS TEST | 50MTR. RUN, STANDING BROAD JUMP, PUSH-UP/MODIFIED PUSH-UP, SIT-UPS, SHUTTLE RUN . BODY MASS INDEX AND 600 METER RUN/WALK,<br>INTER HOUSE ACTIVITY FOR THE RESPECTIVE MONTH. |