

CLASS - X

ENGLISH - I (LANGUAGE)

Book : TOTAL ENGLISH (10) Morning Star

UNITS 1 to 15

Preliminary examinations will include the entire syllabus of classes IX & X.

ENGLISH - II (LITERATURE)

Book : Drama : "The Merchant of Venice"

Act III - Scene 2, 3, 4, 5 - *William Shakespeare*

(Morning Star)

Act IV - All the Scenes

Act V - All the Scenes

Poetry : Treasure Trove "A Collection of ICSE Poems"
(Evergreen)

1. The Heart of The Tree - *Henry Cryler Bunner*
2. The Patriot - *Robert Browning*
3. Abou Ben Adhem - *Leigh Hunt*
4. Nine Gold Medals - *David Roth*

Prose : Treasure Trove "A Collection of ICSE Short Stories" (Evergreen)

1. The Little Match Girl - *Hans Christian Andersen*
2. Chief Seattle's Speech

3. My Greatest Olympic Prize - *Jesse Owens*
4. All Summer in a Day - *Ray Bradbury*

Preliminary examinations will include the entire syllabus of classes IX & X.

हिन्दी

साहित्य सागर (कहानी, कविता)

व्याकरण पुस्तिका (सरस हिन्दी व्याकरण)

कहानी

5. बड़े घर की बेटी
6. भेड़ और भेड़िए
7. दो कलाकार

कविता

6. सूर के पद
7. विनय के पद
8. चलना हमारा काम है।

नोट : कक्षा 10 के ग्री-बोर्ड में कक्षा 9 के भी पाठ सम्मिलित किये जायेंगे।
'सरस हिन्दी व्याकरण' से विभिन्न प्रकार के निबन्ध-लेखन, औपचारिक-अनौपचारिक पत्र लेखन, अपठित गद्यांश, मौलिक कहानी लेखन व पर्यायवाची, विलोम, वाक्यांश, तद्भव, तत्सम, वाक्य, शुद्धिकरण के अभ्यास कराये जायेंगे।

MATHEMATICS

Book : S. Chand - ICSE Mathematics - Book II

Unit -1 : Commercial Mathematics

Chapter - 1 : Goods & Service Tax (GST)

Chapter - 2 : Banking

Unit - 2 : Algebra

Chapter - 4 : Linear Inequations In One Variable

Chapter - 5 : Quadratic Equations

Chapter - 6 : Ratio & Proportion

Chapter - 7 : Factor-Theorem - Factorization

Chapter - 8 : Matrices

Chapter - 9 : Arithmetic

Chapter - 10 : Reflection

Chapter - 11 : Co-Ordinate Geometry

Unit 3 : Geometry

Chapter - 12 : Similar Triangles

Chapter - 14 : Circle

Unit - 4 : Mensuration

Chapter - 15 : Three Dimensional Solids

Unit - 5 : Trigonometry

Chapter - 16 : Trigonometrical Identities and Tables

Chapter - 17 : Heights and Distances.

Unit - 6 : Statistics

Chapter - 18 : Arithmetic Mean, Median, Mode and Quartiles

Chapter - 19 : Histograms and Ogive

Chapter - 20 : Probability

Note : 1) Preliminary examinations include the entire syllabus.

2) Reduced scope of syllabus 2020-21 to be referred for details.

PHYSICS

Book : Concise Physics - X (Selina Publication)

1. Force, Work, Power and Energy

(i) Turning forces concept; moment of a force; forces in equilibrium; centre of gravity; [discussions using simple examples and simple numerical problems].

Elementary introduction of translational and rotational motions; moment (turning effect) of a force, also called torque and its cgs and SI units; common examples - door, steering wheel, bicycle pedal, etc.; clockwise and anti-clockwise moments; conditions for a body to be in equilibrium (translational and rotational); principle of moment and its verification using a metre rule suspended by two spring balances with slotted weights hanging from it; simple numerical problems; Centre of gravity (qualitative only) with examples of some regular bodies and irregular lamina.

(ii) Uniform circular motion.

As an example of constant speed, though acceleration (force) is present. Differences between centrifugal and centripetal force.

(iii) Work, energy, power and their relation with force.

Definition of work. $W = FS \cos\theta$; special cases of $\theta = 0^\circ, 90^\circ$. $W = mgh$. Definition of energy, energy as work done. Various units of work and energy and their relation with SI units. [erg, calorie, kW h and eV]. Definition of Power, $P = W/t$; SI and cgs units; other units, kilowatt (kW), megawatt (MW) and gigawatt (GW); and horse power ($1 \text{ hp} = 746 \text{ W}$) [Simple numerical problems on work, power and energy].

(iv) Different types of energy (e.g. chemical energy, Mechanical energy, heat energy, electrical energy, nuclear energy, sound energy, light energy).

Mechanical energy: potential energy $U = mgh$ (derivation included) gravitational PE, examples; kinetic energy $K = \frac{1}{2} mv^2$ (derivation included); forms of kinetic energy: translational, rotational and vibrational - only simple examples. [Numerical problems on K and U only in case of translational motion]; qualitative discussions of electrical, chemical, heat, nuclear, light and sound energy, conversion from one form to another; common examples.

(v) Machines as force multipliers; load, effort, mechanical advantage, velocity ratio and efficiency; simple treatment of levers, pulley systems showing the utility of each type of machine.

Functions and uses of simple machines: Terms- effort E, load L, mechanical advantage $MA = L/E$, velocity ratio $VR = V_E/V_L = d_E/d_L$, input (W_i), output (W_o), efficiency (η), relation between η and MA, VR (derivation included); for all practical machines $\eta < 1$; $MA < VR$.

Pulley system: single fixed, single movable, block and tackle (using single tackle).; MA, VR and η in each case.

(vi) Principle of Conservation of energy.

Statement of the principle of conservation of energy; theoretical verification that $U + K = \text{constant}$ for a freely falling body. Application of this law to simple pendulum (qualitative only); [simple numerical problems].

2. Light

(i) Refraction of light through a glass block and a triangular prism - qualitative treatment of simple applications such as real and apparent depth of objects in water and apparent bending of sticks in water. Applications of refraction of light.

Partial reflection and refraction due to change in medium. Laws of refraction; the effect on speed (V), wavelength (λ) and frequency (f) due to refraction of light; conditions for a light ray to pass undeviated. Values of speed of light (c) in vacuum, air, water and glass; refractive index $\mu = c/V, V = f\lambda$. Values of μ for common substances such as water, glass and diamond; experimental verification; refraction through glass block; lateral displacement; refraction through a glass prism, simple applications: real and apparent depth of objects in water; apparent bending of a stick under water. (Simple numerical problems and approximate ray diagrams required).

(ii) Total internal reflection: Critical angle; examples in triangular glass prisms; comparison with reflection from a plane mirror (qualitative only). Applications of total internal reflection.

Transmission of light from a denser medium (glass/

water) to a rarer medium (air) at different angles of incidence; critical angle (C) $\mu = 1/\sin C$. Essential conditions for total internal reflection. Total internal reflection in a triangular glass prism; ray diagram, different cases - angles of prism ($60^\circ, 60^\circ, 60^\circ$), ($60^\circ, 30^\circ, 90^\circ$), ($45^\circ, 45^\circ, 90^\circ$); use of right angle prism to obtain $\delta = 90^\circ$ and 180° (ray diagram); comparison of total internal reflection from a prism and reflection from a plane mirror.

- (iii) Lenses (converging and diverging) including characteristics of the images formed (using ray diagrams only); magnifying glass; location of images using ray diagrams and thereby determining magnification.

Types of lenses (converging and diverging), convex and concave, action of a lens as a set of prisms; technical terms; centre of curvature, radii of curvature, principal axis, foci, focal plane and focal length; detailed study of refraction of light in spherical lenses through ray diagrams; formation of images - principal rays or construction rays; location of images from ray diagram for various positions of a small linear object on the principal axis; characteristics of images. Sign convention and direct numerical problems using the lens formula are included (derivation of formula not required).

Scale drawing or graphical representation of ray diagrams not required.

Power of a lens (concave and convex); Only definition and basic understanding based on the curvature or thickness of lens. Applications of lenses.

- (iv) Using a triangular prism to produce a visible spectrum from white light; Electromagnetic spectrum.

Deviation produced by a triangular prism; dependence on colour (wavelength) of light; dispersion and spectrum; electromagnetic spectrum: broad classification (names only arranged in order of increasing wavelength); properties common to all electromagnetic radiations; properties and uses of infrared and ultraviolet radiation.

3. Sound

- (i) Reflection of Sound Waves; echoes: their use; simple numerical problems on echoes.

Production of echoes, condition for formation of echoes; simple numerical problems; use of echoes by bats, dolphins, fishermen, medical field. SONAR.

- (ii) Natural vibrations, Damped vibrations, Forced vibrations and Resonance - a special case of forced vibrations. *Meaning and simple applications of natural, damped, forced vibrations and resonance.*

- (iii) Loudness, pitch and quality of sound.

Meaning of the terms and the factors affecting them (no examples).

4. Electricity and Magnetism

- (i) Ohm's Law; concepts of emf, potential difference, resistance; resistances in series and parallel, internal resistance.

Concepts of pd (V), current (I), resistance (R) and charge (Q). Ohm's law: statement, $V=IR$; SI units; graph of V vs I and resistance from slope; ohmic and non-ohmic resistors, factors affecting resistance (including specific resistance) and internal resistance; super conductors, electromotive force (emf); combination of resistances in series and parallel. Simple numerical problems using the above

relations. [Simple network of resistors involving not more than four external resistors in a circuit.].

(ii) Electrical power and energy.

Electrical energy; examples of heater, motor, lamp, loudspeaker, etc. Electrical power; measurement of electrical energy, $W = QV = VIt$ from the definition of pd. Combining with ohm's law $W = VIt = I^2Rt = (V^2/R)t$ and electrical power $P = (W/t) = VI = I^2R = V^2/R$. Units: SI and commercial; Power rating of common appliances, household consumption of electric energy; calculation of total energy consumed by electrical appliances; $W = Pt$ (kilowatt \times hour = kWh), (simple numerical problems).

(iii) Household circuits – main circuit; switches; fuses; earthing; safety precautions; three-pin plugs; colour coding of wires.

Main circuit (3 wires-live, neutral, earth) with fuse / MCB, main switch and its advantages, need for earthing, fuse, 3-pin plug and socket; Conventional location of live, neutral and earth points in 3 pin plugs and sockets. Safety precautions, colour coding of wires.

(iv) Magnetic effect of a current (principles only, laws not required); electromagnetic induction (elementary).

Oersted's experiment on the magnetic effect of electric current; magnetic field (B) and field lines due to current in a straight wire (qualitative only), right hand thumb rule – magnetic field due to a current in a loop; Electromagnets: their uses; comparisons with a permanent magnet; conductor carrying current in a magnetic field experiences a force, Fleming's Left Hand Rule, brief description and type

of energy transfer in DC motor (detailed working not required): Simple introduction to electromagnetic induction; frequency of AC in household supplies, Fleming's Right Hand Rule (with its application in understanding the direction of current in a coil and Lenz's law), brief description and type of energy transfer in AC generator (detailed working not required). Advantage of AC over DC.

5. Heat

(i) Calorimetry: meaning, specific heat capacity; principle of method of mixtures; Numerical Problems on specific heat capacity using heat loss and gain and the method of mixtures.

Heat and its units (calorie, joule), temperature and its units ($^{\circ}C$, K); thermal (heat) capacity $C' = Q/\Delta T$... (SI unit of C'): Specific heat Capacity $C = Q/m\Delta T$ (SI unit of C) Mutual relation between Heat Capacity and Specific Heat capacity, values of C for some common substances (ice, water and copper). Principle of method of mixtures including mathematical statement. Natural phenomenon involving specific heat. Consequences of high specific heat of water. [Simple numerical problems].

(ii) Latent heat; loss and gain of heat involving change of state for fusion only.

Change of phase (state); heating curve for water; latent heat; specific latent heat of fusion (SI unit). Simple numerical problems. Common physical phenomena involving latent heat of fusion.

6. Modern Physics

Radioactivity and changes in the nucleus; background radiation and safety precautions.

Brief introduction (qualitative only) of the nucleus, nuclear structure, atomic number (Z), mass number (A). Radioactivity as spontaneous disintegration. α , β and γ - their nature and properties; changes within the nucleus. One example each of α and β decay with equations showing changes in Z and A . Uses of radioactivity - radio isotopes. Harmful effects. Safety precautions. Background radiation.

Radiation: X-rays; radioactive fallout from nuclear plants and other sources.

Nuclear Energy: working on safe disposal of waste. Safety measures to be strictly reinforced.

Note : Reduced scope of syllabus 2020-21 to be referred for details.

CHEMISTRY

Book : **Concise Chemistry** - Part II (Selina Publication)

1. Periodic Properties and variations of Properties – Physical and Chemical.

(i) Periodic properties and their variations in groups and periods.

Definitions and trends of the following periodic properties in groups and periods should be studied:

- atomic size
- metallic character
- non-metallic character
- ionisation potential
- electron affinity
- electronegativity

(ii) Periodicity on the basis of atomic number for elements.

- The study of modern periodic table up to period 3 (students to be exposed to the complete modern periodic table but no questions will be asked on elements beyond period 3 – Argon);
- Periodicity and other related properties to be explained on the basis of nuclear charge and shells (not orbitals).

(Special reference to the alkali metals and halogen groups).

2. Chemical Bonding

Electrovalent, covalent and co-ordinate bonding, structures of various compounds, Electron dot structure.

(a) Electrovalent bonding:

- Electron dot structure of Electrovalent compounds NaCl , MgCl_2 , CaO .
- Characteristic properties of electrovalent compounds – state of existence, melting and boiling points, conductivity (heat and electricity), dissociation in solution and in molten state to be linked with electrolysis.

(b) Covalent Bonding:

- Electron dot structure of covalent molecules on the basis of duplet and octet of electrons (example: hydrogen, chlorine, nitrogen, ammonia, carbon tetrachloride, methane).
- Polar Covalent compounds – based on difference in electronegativity:

Examples – HCl and H_2O including structures.

- *Characteristic properties of Covalent compounds – state of existence, melting and boiling points, conductivity (heat and electricity), ionisation in solution.*

Comparison of Electrovalent and Covalent compounds.

(c) Coordinate Bonding :

- *Definition*
- *The lone pair effect of the oxygen atom of the water molecule and the nitrogen atom of the ammonia molecule to explain the formation of H_3O^+ and OH^- ions in water and NH_4^+ ion.*

The meaning of lone pair; the formation of hydronium ion and ammonium ion must be explained with help of electron dot diagrams.

3. Study of Acids, Bases and Salts

- (i) Simple definitions in terms of the molecules and their characteristic properties.
- (ii) Ions present in mineral acids, alkalis and salts and their solutions; use of litmus and pH paper to test for acidity and alkalinity.
 - *Examples with equation for the ionisation/dissociation of ions of acids, bases and salts.*
 - *Acids form hydronium ions (only positive ions) which turn blue litmus red, alkalis form hydroxyl ions (only negative ions) with water which turns red litmus blue.*
 - *Salts are formed by partial or complete replacement of the hydrogen ion of an acid by a metal. (To be explained with suitable examples).*
 - *Introduction to pH scale to test for acidity, neutrality and alkalinity by using pH paper or Universal indicator.*

(iii) Definition of salt; types of salts.

Types of salts: normal salts, acid salt, basic salt, definition and examples.

(iv) Action of dilute acids on salts.

Decomposition of hydrogen carbonates, carbonates, sulphites and sulphides by appropriate acids with heating if necessary. (Relevant laboratory work must be done).

4. Analytical Chemistry

- (i) Action of Ammonium Hydroxide and Sodium Hydroxide on solution of salts: colour of salt and its solution; formation and colour of hydroxide precipitated for solutions of salts of Ca, Fe, Cu, Zn and Pb; special action of ammonium hydroxide on solutions of copper salt and sodium hydroxide on ammonium salts.

On solution of salts:

- *Colour of salt and its solution.*
- *Action on addition of Sodium Hydroxide to solution of Ca, Fe, Cu, Zn, and Pb salts drop by drop in excess. Formation and colour of hydroxide precipitated to be highlighted with the help of equations.*
- *Action on addition of Ammonium Hydroxide to solution of Ca, Fe, Cu, Zn, and Pb salts drop by drop in excess. Formation and colour of hydroxide precipitated to be highlighted with the help of equations.*
- *Special action of Ammonium Hydroxide on solutions of copper salts and sodium hydroxide on ammonium salts.*

- (ii) Action of alkalis (NaOH , KOH) on certain metals, their oxides and hydroxides.

The metals must include aluminium, zinc and lead, their oxides and hydroxides, which react with caustic alkalis (NaOH , KOH), showing the amphoteric nature of these substances.

5. Mole Concept and Stoichiometry

Vapour Density and its relation to relative molecular mass.

- *Molecular mass = $2 \times$ vapour density (formal proof not required)*
- *Deduction of simple (empirical) and molecular formula from:*
 - (a) the percentage composition of a compound.*
 - (b) the masses of combining elements.*

6. Electrolysis

- Electrolytes and non-electrolytes. *Definitions and examples.*
- Substances containing molecules only, ions only, both molecules and ions.
 - *Substances containing molecules only ions only, both molecules and ions.*
 - *Examples; relating their composition with their behaviour as **strong and weak electrolytes as well as non-electrolytes.***
- Definition and explanation of electrolysis, electrolyte, electrode, anode, cathode, anion, cation, oxidation and reduction (on the basis of loss and gain of electrons).
- An elementary study of the migration of ions, with reference to the factors influencing selective

discharge of ions (reference should be made to the activity series as indicating the tendency of metals, e.g. Na , Mg , Fe , Cu , to form ions) illustrated by the electrolysis of:

- *Molten lead bromide*
- *acidified water with platinum electrodes*
- *Aqueous copper (II) sulphate with copper electrodes; electron transfer at the electrodes.*

The above electrolytic processes can be studied in terms of electrolyte used, electrodes used, ionization reaction, anode reaction, cathode reaction, use of selective discharge theory, wherever applicable.

- (v) Applications of electrolysis:

- *Electroplating with nickel and silver, choice of electrolyte for electroplating.*
- *Electro refining of copper;*

Reasons and conditions for electroplating; names of the electrolytes and the electrodes used should be given. Equations for the reactions at the electrodes should be given for electroplating, refining of copper.

7. Metallurgy

- Occurrence of metals in nature.
 - *Mineral and ore - meaning only.*
 - *Common ores of aluminium.*
- Extraction of Aluminium.
 - Chemical method for purifying bauxite by using NaOH – Baeyer's Process.*
 - Electrolytic extraction – Hall Heroult's process: Structure of electrolytic cell - the various components as part of the electrolyte, electrodes and electrode reactions.*

Description of the changes occurring, purpose of the substances used and the main reactions with their equations.

(iii) Alloys – composition and uses

Stainless steel, duralumin, brass, bronze, fuse metal / solder.

8. Study of Compounds

A. Hydrogen Chloride

Hydrogen chloride: preparation of hydrogen chloride from sodium chloride; refer to the density and solubility of hydrogen chloride (fountain experiment); reaction with ammonia; acidic properties of its solution.

- *Preparation of hydrogen chloride from sodium chloride; the laboratory method of preparation can be learnt in terms of reactants, product, condition, equation, diagram or setting of the apparatus, procedure, observation, precaution, collection of the gas and identification.*
- *Simple experiment to show the density of the gas (Hydrogen Chloride) – heavier than air.*
- *Solubility of hydrogen chloride (fountain experiment); setting of the apparatus, procedure, observation, inference.*
- *Method of preparation of hydrochloric acid by dissolving the gas in water- the special arrangement and the mechanism by which the back suction is avoided should be learnt.*
- *Reaction with ammonia*

- *Acidic properties of its solution - reaction with metals, their oxides, hydroxides and carbonates to give their chlorides; decomposition of carbonates, hydrogen carbonates, sulphides, sulphites.*
- *Precipitation reactions with silver nitrate solution and lead nitrate solution.*

B. Ammonia

Ammonia: its laboratory preparation from ammonium chloride and collection; ammonia from nitrides like Mg_3N_2 and AlN and ammonium salts. Manufacture by Haber's Process; density and solubility of ammonia (fountain experiment); aqueous solution of ammonia; its reactions with hydrogen chloride and with hot copper (II) oxide and chlorine; the burning of ammonia in oxygen; uses of ammonia.

- *Laboratory preparation from ammonium chloride and collection; (the preparation to be studied in terms of, setting of the apparatus and diagram, procedure, observation, collection and identification)*
- *Ammonia from nitrides like Mg_3N_2 and AlN using warm water.*

Ammonia from ammonium salts using alkalis.

The reactions to be studied in terms of reactants, products, conditions and equations.

- *Manufacture by Haber's Process.*
- *Density and solubility of ammonia (fountain experiment).*
- *The burning of ammonia in oxygen.*

- *The catalytic oxidation of ammonia (with conditions and reaction)*
- *Its reactions with hydrogen chloride and with hot copper (II) oxide and chlorine (both chlorine in excess and ammonia in excess).*

All these reactions may be studied in terms of reactants, products, conditions, equations and observations.

- *Aqueous solution of ammonia - reaction with sulphuric acid, nitric acid, hydrochloric acid and solutions of iron(III) chloride, iron(II) sulphate, lead nitrate, zinc nitrate and copper sulphate.*
- *Uses of ammonia - manufacture of fertilizers, explosives, nitric acid, refrigerant gas (Chlorofluoro carbon – and its suitable alternatives which are non-ozone depleting), and cleansing agents.*

C. Nitric Acid

Nitric Acid: one laboratory method of preparation of nitric acid from potassium nitrate or sodium nitrate. Large scale preparation. Nitric acid as an oxidizing agent.

- *Laboratory preparation of nitric acid from potassium nitrate or sodium nitrate; the laboratory method to be studied in terms of reactants, products, conditions, equations, setting up of apparatus, diagram, precautions, collection and identification.* • *Manufacture of Nitric acid by Ostwald's process (Only equations with conditions where applicable).*
- *As an oxidising agent: its reaction with copper, carbon, sulphur.*

D. Sulphuric Acid

Large scale preparation, its behaviour as an acid when dilute, as an oxidizing agent when concentrated - oxidation of carbon and sulphur; as a dehydrating agent - dehydration of sugar and copper (II) sulphate crystals; its non-volatile nature.

- *Manufacture by Contact Process Equations with conditions where applicable).*
- *Its behaviour as an acid when dilute - reaction with metal, metal oxide, metal hydroxide, metal carbonate, metal bicarbonate, metal sulphite, metal sulphide.*
- *Concentrated sulphuric acid as an oxidizing agent - the oxidation of carbon and sulphur.*
- *Concentrated sulphuric acid as a dehydrating agent- (a) the dehydration of sugar (b) Copper (II) sulphate crystals.*
- *Non-volatile nature of sulphuric acid - reaction with sodium or potassium chloride and sodium or potassium nitrate.*

9. Organic Chemistry

(i) Introduction to Organic compounds.

- *Unique nature of Carbon atom – tetra valency, catenation.*
- *Formation of single, double and triple bonds, straight chain, branched chain, cyclic compounds (only benzene).*

(ii) Structure and Isomerism.

- *Structure of compounds with single, double and triple bonds.*
- *Structural formulae of hydrocarbons. Structural formula must be given for: alkanes, alkenes, alkynes up to 5 carbon atoms.*
- *Isomerism – structural (chain, position)*

(iii) Homologous series – characteristics with examples.

Alkane, alkene, alkyne series and their gradation in properties and the relationship with the molecular mass or molecular formula.

(iv) Simple nomenclature.

Simple nomenclature - of the hydrocarbons with simple functional groups – (double bond, triple bond, alcoholic, aldehydic, carboxylic group) longest chain rule and smallest number for functional groups rule – trivial and IUPAC names (compounds with only one functional group)

(v) Hydrocarbons: alkanes, alkenes, alkynes.

- *Alkanes - general formula; methane (greenhouse gas) and ethane - methods of preparation from sodium ethanoate (sodium acetate), sodium propanoate (sodium propionate), from iodomethane (methyl iodide) and bromoethane (ethyl bromide). Complete combustion of methane and ethane, reaction of methane and ethane with chlorine through substitution.*
- *Alkenes – (unsaturated hydrocarbons with a double bond); ethene as an example. Methods of preparation of ethene by dehydro halogenation reaction and dehydration reactions.*
- *Alkynes - (unsaturated hydrocarbons with a triple bond); ethyne as an example of alkyne; Methods of preparation from calcium carbide and 1,2 dibromoethane ethylene dibromide).*

Only main properties, particularly addition products with hydrogen and halogen namely Cl_2 , Br_2 and I_2 pertaining to alkenes and alkynes.

- *Uses of methane, ethane, ethene, ethyne.*

Note : *Reduced scope of syllabus 2020-21 to be referred for details.*

BIOLOGY

Book : Concise Biology -

[Selina Publication]

1. Structure of Chromosomes, Cell Cycle and Cell Division
2. Genetics - Some Basic Fundamental
3. Absorption by Roots - The Processes involved
4. Transpiration
5. Photosynthesis
6. The Circulatory System
7. The Excretory System
8. The Nervous System
9. Sense Organs
10. The Endocrine System
11. The Reproductive System

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2) *Reduced scope of syllabus 2020-21 to be referred for details.*

HISTORY & CIVICS

Book : Total History & Civics-10

(Morning Star)

Civics :

1. The Union Parliament
2. The President
3. Prime Minister and the Council of Ministers
4. The Supreme Court
5. The High Courts and the Subordinate Courts

Indian History :

1. The First War of Independence 1857
2. The Growth of Nationalism
3. First Phase of Indian National Movement
4. Second Phase of Indian National Movement
5. The Muslim League
6. Mahatma Gandhi and the National Movement.
7. Quit India Movement.
8. Forward Bloc and The INA
9. Independence and Partition of India

The Contemporary World :

1. The First World War
2. The Second World War
3. The United Nations
4. Major Agencies of United Nations
5. Non-Aligned Movement

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GEOGRAPHY

Book : **Total Geography - 10** (Morning Star Publication)

SECTION - A

Survey Map :

1. Scale
2. Contour and their relief features

3. a) Conventional signs and symbols
b) Important Terms
c) Uses of colours on a survey map
4. Four & six figures grid reference
5. a) Drainage Pattern
b) Settlement Pattern
6. Area calculation
7. Distance
8. Direction

Map work :

A question will be set to locate and label on an outline map of India, mountains, plateaus, plains desert, rivers, water bodies, passes, latitude and longitude - tropic of cancer, standard meridian (82° 30'E), wind, minerals, soils, cities (Delhi, Mumbai, Kolkata, Chennai, Hyderabad, Bengaluru, Kochi, Chandigarh, Srinagar, Vishakhapatnam, Allahabad), Population (dense and sparse).

SECTION - B

Geography of India

1. The Climate of India
2. Soils of India
3. Natural Vegetation of India
4. Water Resources
5. Mineral Resources
6. Conventional Sources of Energy
7. Non-Conventional Sources of Energy
8. Agriculture in India-
 - a) Indian Agriculture - Importance Problems & Solution.
 - c) Climatic Conditions, Soil, methods of Cultivation and Distribution of following crops :
 - Rice, wheat, millets, pulses, sugarcane, oil seeds, cotton, jute, tea, coffee.

9. Transport - Roadways, Railway, Airways and Water-ways
10. Industries of India -
- Agro based industries - Sugar, Textiles (Cotton & Silk)
 - Mineral based Industries- Iron & Steel (TISCO, Rourkela, Vishakapatnam) Petrochemical and Electro-nics.
11. Waste Management -
- Impact of waste accumulation
 - Need for Management of waste
 - Safe Disposal of waste
 - Reduce - Reuse, Recycle waste

Note : *Reduced scope of syllabus 2020-21 to be referred for details.*

COMPUTER APPLICATION

Book : **Total Computer Application** (Morning Star)

1. Revision of Class - IX Syllabus

- Introduction to Object Programming Concept
- Elementary Concept of Objects and Classes
- Values and Data Types
- Operators in Java
- Input in Java
- Mathematical Library Methods
- Conditional Constructs in Java
- Iterative Constructs in Java
- Nested for Loops

2. Class as the Basic of all computation objects and classes

Objects encapsulate state and behavior - numerous examples; member variable; attributes or features. Variables define state; member methods; operations / methods / messages / methods define behaviour

3. User - Defined Methods

Need of methods, syntax of methods, forms of methods, methods definition, method calling, method overloading, declaration of methods

4. Library Classes

Introduction to Wrapper classes, methods of wrapper class and their ways with respect to numeric and character data type. Autoboxing and Unboxing in wrapper classes.

The following methods are to be covered :

int parseInt (string s),
long parseLong (String s),
float parseFloat (String s),
double parseDouble (String s),
boolean isDigit (Char ch),
boolean isLetterOrDigit (Char ch),
boolean isLowerCase (Char ch),
boolean isUpperCase (Char ch),
boolean isWhiteSpace (Char ch),
char toLowerCase (Char ch),
char toUpperCase (Char ch),

5. String Handling

String class, methods of string class, implementation of string class methods, string array

The following string class methods are to be covered :
String trim (), string to Lower Case (), string to Upper Case (), int length (), char char At (int n), int indexOf (Char ch), int lastIndexOf (Char ch), string concat (String str), boolean equals (String str), boolean equals Ignore Case (String str), int compare to (String str), int compare to ignore case (string str), string replace (Char old char, char new char), string substring (int begin index), string substring (int begin index, int endIndex), boolean starts

with (string str), boolean ends with (String str), string value of (all types)

6. Constructors

Definition of constructor, characteristics, types of constructors, use of constructors, constructors overloading.

7. Arrays

Definition of an array, types of arrays, declaration, initialization and accepting data of single, accessing the elements of single dimensional arrays.

- Note :** 1) Preliminary examinations will include the entire syllabus.
2) Reduced scope of syllabus 2020-21 to be referred for details.

COMMERCIAL APPLICATIONS

Book : ICSE Commercial Applications by C.B. Gupta
(Goyal Brothers Prakashan)

- 1) Meaning & Types of Market
- 2) Marketing Mix
- 3) Advertising & Brand Promotion.
- 4) Sales and Selling Process.
- 5) GAAP
- 6) Financial Accounting & Reporting
- 7) Banking & Bank Transactions
- 8) Fundamental Concepts of Cost
- 9) Importance of Human Resources.
- 10) Methods of Recruitment, Selection & Training.
- 11) Meaning, nature & scope of Public Relations.
- 12) Elements of Public Relations

- 13) Ecosystem & its destruction
- 14) Consumer Education & Rights
- 15) Community Participation and Public Awareness Programmes for Ecological Restoration & Conservation (Like - Chipko Andolan Movement)

- Note :** 1) Preliminary examinations will include the entire reduced syllabus.
2) Four assignments / Projects to be completed.
3) Reduced scope of syllabus 2020-21 to be referred for details.

MORAL SCIENCE

Book : Heart and Mind

Marina Publication Pvt. Ltd.

- 1) Seeking Adult Assistance
- 2) Competition and Youth
- 3) Your Goal in Life
- 4) Cybercrime
- 5) Conquering Shyness
- 6) Manage Your Time
- 7) A Big Threat
- 8) You Can Do Anything
- 9) Challenges Are Opportunities
- 10) Fashion : Its Influence on Youth
- 11) Affirmations and Life
- 12) Germs of India
- 13) Global Icons

