

Syllabus
Session 2020-21
Class-X
Subject –Science

Unit No.	Units	Marks
I	Chemical Substances - Nature & Behaviour	26
II	World of Living	23
III	Natural Phenomenon	12
IV	Effects of Current	14
V	Natural Resources	05
	Total	80
	Internal assessment	20
	Grand total	100

	Content
	<p><u>Unit –I Chemical Substances – Nature and Behaviour</u></p> <p>Ch-1: Chemical reactions and Equations- chemical equation, Balanced chemical equation, implications of a balanced chemical equation, Types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, neutralisation, oxidation and reduction.</p> <p>Practical: Performing and observing the following reactions and classifying them into:</p> <p>a) Combination reaction b) Decomposition reaction c) Displacement reaction d) Double displacement reaction</p> <p>(i) Action of water on Quick lime (ii) Action of heat on Ferrous sulphate crystals (iii) Iron nails kept in Copper sulphate solution (iv) Reaction between Sodium sulphate and Barium chloride solutions</p>
	<p>Ch-2: Acids, Bases and Salts-Their definitions in terms of furnishing of H⁺ and OH⁻ ions, General properties (physical and chemical properties), examples and uses, concept of pH scale (Definition relating to logarithm not required), importance of pH in everyday life; preparation and uses of Sodium chloride, Sodium hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris.</p> <p>Practical : Studying the properties of acids and bases (HCl & NaOH) by their reaction with:</p> <p>a) Litmus solution (Blue/Red) b) Zinc metal c) Solid sodium carbonate</p>

	<p>Ch-3: Metals and Non-Metals- Properties of metals and non-metals, reactivity series, formation and properties of ionic compounds.</p> <p>Practical : Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions: a) ZnSO₄ (aq) (b) FeSO₄ (aq) (c) CuSO₄ (aq) (d) Al₂(SO₄)₃ (aq) Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result.</p>
	<p>Unit I: Chemical Substances - Nature and Behaviour</p> <p>Ch-4: Carbon and its compounds- Covalent bonding in carbon compounds, Versatile nature of carbon, Homologous series.</p>
	<p>Ch-5 : Periodic classification of elements- Need for classification, Early attempts at classification of elements (Dobereiner's Triads, Newland's Law of Octaves, Mendeleev's Periodic table), Modern periodic table, gradation in properties, valency, atomic number, metallic and non-metallic properties.</p>
	<p>Theme : The World of the Living</p> <p>Unit II: World of Living</p> <p>Ch-6:Life processes- "living being". Basic concept of nutrition, respiration, transport and excretion in plants and animals.</p> <p>Practical No. : Experimentally show that carbon dioxide is given out during respiration.</p>
	<p>Ch-8 Reproduction: Reproduction in animals and plants (asexual and sexual) reproductive health-need and methods of family planning, safe sex vs HIV/AIDS. Child bearing and women's health.</p> <p>Practical : Studying (a) binary fission in Amoeba, and (b) budding in yeast and hydra with the help of prepared slides.</p>
	<p>Ch-9 Heredity and evolution: Heredity- Mendel's contribution- Laws of inheritance of traits, Sex determination.</p>
	<p>Unit III: Natural Phenomenon</p> <p>Ch-10: Light- Reflection and Refraction</p> <p>Reflection of light by curved surfaces, Images formed by spherical mirrors, centre of curvature, principal axis, principal focus, focal length, mirror formula (Derivation not required), magnification, Refraction: laws of refraction, refractive index, Refraction of light by spherical lens, Image formed by spherical lenses, Lens formula (Derivation not required), Magnification. Power of a lens.</p> <p>Ch-11: The Human Eye and the Colourful World</p> <p>Refraction of light through a prism, dispersion of light, scattering of light and its applications in daily life.</p> <p>Practical : . Determination of the focal length of: i) Concave mirror ii)Convex lens by obtaining the image of a distant object.</p> <p>Practical : Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, angle of emergence and interpret the result.</p>

	Practical : Tracing the path of the rays of light through a glass prism.
	Unit IV: Effects of Current Ch-12: Current Electricity- Electric current, Potential difference and electric current. Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, Inter relation between P, V, I and R. Practical : Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determine its resistance. Also plotting a graph between V and I.
	Ch-13: Magnetic effects of Current- Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's left hand rule, electric motor, electromagnetic induction, Induced potential difference, Induced current. Fleming's Right Hand Rule.
	Unit V: Natural Resources Ch-15:Our Environment- Eco-system, Environmental problems, Ozone depletion, waste production and their solutions, Biodegradable and non-biodegradable substances.
ONLY FOR INTERNAL ASSESSMENT	
	<p>Note: Learners are assigned to read the below listed part of Unit V. They can be encouraged to prepare a brief write up on any one concept of this Unit in their Portfolio. This may be an assessment for Internal Assessment and credit may be given (Periodic assessment/Portfolio). This portion of the Unit is not to be assessed in the year-end examination.</p> <p>Management of natural resources: Conservation and judicious use of natural resources. Forest and wild life; Coal and Petroleum conservation. Examples of people's participation for conservation of natural resources. Big dams: advantages and limitations. Alternatives if any .Water harvesting , Sustainability of natural resources.</p>

Internal Assessment (20 Marks)	
Periodic Assessment	05 Marks + 05 Marks
Subject Enrichment (Practical Work)	05 Marks
Portfolio	05 Marks

**Assessment Areas (Theory) 2020-21
Science (086)**

Time: 3 hrs

Maximum Marks : 80 Marks

Competencies	
Demonstrate Knowledge and Understanding	46 %
Application of Knowledge/Concepts	22 %
Analyze, Evaluate and Create	32 %

Note: • Typology of Questions:

- ❖ VSA including objective type questions, Assertion – Reasoning type questions; SA; LA; Source-based/ Case-based/ Passage-based/ Integrated assessment questions.

An internal choice of approximately 33% would be provided.

Suggestive verbs for various competencies

- Demonstrate Knowledge and Understanding

State, name, list, identify, define, suggest, describe, outline, summarize, etc.

- Application of Knowledge/Concepts

Calculate, illustrate, show, adapt, explain, distinguish, etc.

- Analyze, Evaluate and Create

Interpret, analyze, compare, contrast, examine, evaluate, discuss, construct, etc.