

Term-Wise Syllabus
Session 2021-22
Class-X
Subject –Science (086)

EVALUATION SCHEME		
THEORY		
Units	Term - I	Marks
I	Chemical Substances-Nature and Behaviour: Chapter 1,2 and 3	16
II	World of Living: Chapter 6	10
III	Natural Phenomena: Chapter 10 and 11	14
Units	Term - II	Marks
I	Chemical Substances-Nature and Behaviour: Chapter 4 and 5	10
II	World of Living: Chapter 8 and 9	13
IV	Effects of Current: Chapter 12 and 13	12
V	Natural Resources-Chapter-15	05
Total Theory (Term I+II)		80
Internal Assessment: Term I		10
Internal Assessment: Term II		10
Grand Total		100

TERM-I

Content

THEME: MATERIALS

Unit –I Chemical Substances – Nature and Behaviour

CHAPTER-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, neutralization, Oxidation and Reduction.

SUGGESTIVE PRACTICAL: Performing and observing the following reactions and classifying them into:

- | | |
|---|---------------------------------|
| a) Combination reaction | b) Decomposition reaction |
| c) Displacement reaction | d) Double displacement reaction |
| (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 aqueous Sodium sulphate and Barium chloride solutions | |

(S.no.2 as per the List of Experiments from CBSE.)

CHAPTER-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 hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris.

SUGGESTIVE PRACTICAL:

A) Finding the pH of the following samples by using pH paper / Universal Indicator:

- | | |
|----------------------------------|---------------------------------------|
| a) Dilute Hydrochloric acid | b) Dilute NaOH solution |
| c) Dilute Ethanoic Acid Solution | d) Lemon juice |
| e) Water | f) Dilute Hydrogen Carbonate solution |

B) Studying the properties of acids and bases (HCl & NaOH) by their reaction with:

- a) Litmus solution (Blue/Red)
- b) Zinc metal
- c) Solid Sodium carbonate

(S.no.1 as per the List of Experiments from CBSE.)

CHAPTER-3: METALS AND NON-METALS- Properties of metals and non-metals, reactivity series, formation and properties of ionic compounds.

SUGGESTIVE PRACTICAL:

A. Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions:

- a) ZnSO_4 (aq)
- b) FeSO_4 (aq)
- c) CuSO_4 (aq)
- d) $\text{Al}_2(\text{SO}_4)_3$ (aq)

B. Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result.

(S.no.3 as per the List of Experiments from CBSE.)

THEME :THE WORLD OF THE LIVING

Unit II: World of Living

CHAPTER-6: LIFE PROCESSES - "Living Being". Basic concept of Nutrition, Respiration, Transport and Excretion in plants and animals.

SUGGESTIVE PRACTICAL: Experimentally show that carbon dioxide is given out during respiration.

(S.no. 4 as per the List of Experiments from CBSE)

THEME: HOW THINGS WORK

Unit III: Natural Phenomena

CHAPTER-10: LIGHT- REFLECTION AND REFRACTION

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.

SUGGESTIVE PRACTICAL : . Determination of the focal length of i) Concave mirror and ii) Convex lens by obtaining the image of a distant object.

(S.no.5 as per the List of Experiments from CBSE.)

SUGGESTIVE 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.

(S.no.6 as per the List of Experiments from CBSE)

CHAPTER-11: THE HUMAN EYE AND THE COLOURFUL WORLD

Refraction of light through a Prism, dispersion of light, scattering of light , applications in daily life.

SUGGESTIVE PRACTICAL: Tracing the path of the rays of light through a glass prism.

(S.no.7 as per the List of Experiments from CBSE.)

TERM-II

THEME MATERIAL

Unit –I Chemical Substances – Nature and Behaviour

CHAPTER-4: CARBON AND ITS COMPOUNDS - Covalent bonding in carbon compounds, Versatile nature of carbon, Homologous series.

CHAPTER-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.

THEME :THE WORLD OF THE LIVING

Unit II: World of Living

CHAPTER -8: HOW DO ORGANISMS REPRODUCE

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.

Suggestive Practical: Studying (a) binary fission in Amoeba, and (b) budding in yeast and hydra with the help of prepared slides.

(S.no.2 of TERM-II as per the List of Experiments from CBSE.)

CHAPTER -9 HEREDITY AND EVOLUTION:

Heredity- Heredity, Mendel's contribution- Laws of inheritance of traits, Sex determination: brief introduction.

THEME – NATURAL PHENOMENA

Unit IV: Effects of Current

CHAPTER-12: ELECTRICITY- 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, Interrelation between P, V, I and R.

Suggestive 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.

(S.no. 1 of TERM-II as per the List of Experiments from CBSE)

CHAPTER-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.

THEME: NATURAL RESOURCES

Unit V: Natural Resources

CHAPTER 15- OUR ENVIRONMENT: Eco system. Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances.

ONLY FOR INTERNAL ASSESSMENT

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 be assessed in the year-end examination.

CH-16: 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.

PRESCRIBED BOOKS:

- • Science-Textbook for class IX-NCERT Publication
- • Science-Text book for class X- NCERT Publication
- • Assessment of Practical Skills in Science-Class IX - CBSE Publication
- • Assessment of Practical Skills in Science- Class X- CBSE Publication
- • Laboratory Manual-Science-Class IX, NCERT Publication
- • Laboratory Manual-Science-Class X, NCERT Publication
- • Exemplar Problems Class IX – NCERT Publication
- • Exemplar Problems Class X – NCERT Publication

Assessment Areas (Theory) 2021-22 (Class X) Science (086)

Theory

Total Maximum Marks: 80

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

Note:

- Internal choice would be provided.

Internal Assessment – Term I and II (10 Marks each)

- • **Periodic Assessment** - 03 marks
- • **Multiple Assessment** – 02 marks
- • **Subject Enrichment** (Practical Work) - 03 marks
- • **Portfolio** - 02 marks