

Annual Syllabus
Session:2022-23
Class-IX
Subject: Science(086)

Unit No.	Unit	Marks
I	Matter - Its Nature and Behaviour	25
II	Organization in the Living World	22
III	Motion, Force and Work	27
IV	Food; Food Production	06
	Total	80
	Internal assessment	20
	Grand Total	100

Contents

UNIT-I Matter-Its Nature and Behaviour

Chapter -1:Matter in our surroundings

Definition of Matter: Solid, liquid and gas; Characteristics –Shape, Volume, Density; change of state – melting (Absorption of heat), freezing, evaporation (Cooling by evaporation), Condensation, Sublimation.

Suggestive Practical: Determine the melting point of ice and boiling point of water.

Chapter-2: Is Matter Around Us Pure:

Elements, Compound and mixtures. Heterogeneous and homogenous mixtures, colloids and suspension.Physical and chemical changes (excluding separating the components of a mixture).

Suggestive Practical : Preparation of

- a) A true solution of common salt, sugar and alum.
- b) A suspension of soil, chalk powder and fine sand in water.
- c) A colloidal solution of starch in water and egg albumin/ milk in water and distinction between these on the basis of
 - transparency
 - filtration criterion
 - stability

Suggestive Practical: Preparation of a) Mixture b) A Compound, using Iron filing and Sulphur powder and distinction between these on the basis of –

- i) appearance i.e. homogeneity and heterogeneity
- ii) behavior towards a magnet
- iii) behavior towards Carbon disulphide as a solvent
- iv) effect of heat

Suggestive Practical: Performing the following reactions and classifying them as physical or chemical changes:

- a) Iron with Copper Sulphate solution in water b) Burning of magnesium ribbon in air
- c) Zinc with dilute Sulphuric Acid d) Heating of Copper Sulphate Crystals
- e) Sodium Sulphate with Barium Chloride in the form of their Solution in water.

UNIT-II -Organization in the Living World:

Chapter-5:The Fundamental Unit Of Life

Cell as a basic unit of life; Prokaryotic and Eukaryotic cells, multicellular organisms, cell membrane and Cell Wall, Cell Organelles and Cell inclusions; Chloroplast, Mitochondria, Vacuoles, Endoplasmic reticulum, Golgi apparatus; Nucleus, Chromosomes – basic structure, number.

Suggestive Practical : Preparation of stained temporary mounts of:

- a) Onion peel
- b) Human Cheek Cells and to record observations and draw their labeled diagrams.

Chapter- 6: Tissues

Structure and functions of animal and plant tissues (only four types of tissues in animals, Meristematic and Permanent tissues in plants)

Suggestive Practical: Identification of Parenchyma, Collenchyma and Sclerenchyma tissues in plants, Striped, Smooth and Cardiac muscle fibres and Nerve cells in animals from prepared slides. Draw their labeled diagram.

UNIT-III – Motion, Force and Work

Chapter-8: Motion

Distance and displacement, velocity, uniform and non-uniform motion along a straight line, acceleration, distance- time and velocity- time graphs for uniform motion and uniformly accelerated motion, elementary idea of uniform circular motion.

Chapter-9: Force and Laws of Motion:

Force and motion, Newton’s Laws of Motion, Action and Reaction forces, Inertia of body, Inertia and mass, Momentum, Force and Acceleration.

UNIT V-FOOD PRODUCTION

Chapter-15:Improvement In Food Resources

Plant and animal breeding and selection for quality improvement and management; use of fertilizers and manures; Protection from Pests and diseases, organic farming.

- **The above mid-term syllabus is to be completed by September 30, 2022**
- **Revision of syllabus for Mid –Term Examination 2022**

Mid –Term Examination 2022

UNIT III – MOTION, FORCE AND WORK

Chapter-10:Gravitation

Gravitation, Universal law of Gravitation, Force of Gravitation of earth (gravity), Acceleration due to gravity; Mass and weight, Free fall.

Floatation: Thrust and pressure, Archimedes’ principle, Buoyancy.

Suggestive Practical: Determination of the density of solid (denser than water) by using a spring balance and measuring cylinder.

Suggestive Practical: Establishing the relation between the loss in weight of solid when fully immersed in (a) tap water (b) Strongly salty water with the weight of water displaced by it by taking at least two different solids.

UNIT I – Matter - Its Nature and Behavior

Chapter-3: Atoms And Molecules

Particle nature and their basic units: Atoms and molecules, Laws of chemical combination. Atomic and molecular masses.

Suggestive Practical: Verification of Law of Conservation of mass in a chemical reaction.

Chapter-4: Structure Of The Atom Electrons, Protons and Neutrons, Valency, Chemical formula of common compounds, Atomic Number and Mass Number,Isotopes and Isobars.

UNIT III - MOTION,FORCE AND WORK

Chapter-11: Work and Energy

Work done by a force, Energy, Power, Kinetic and Potential energy; Law of conservation of energy. (excluding commercial unit of Energy)

Chapter-12: Sound

Nature of sound and its propagation in various media, speed of sound, range of hearing in humans, ultrasound, reflection of sound; Echo.

Suggestive Practical: Determination of the speed of a pulse propagated through a stretched string /

slinky (helical spring).

Suggestive Practical: Verification of the Laws of reflection of sound.

- The entire syllabus is to be completed by January 31, 2023
- Revision for Annual Examination 2023
- **For more information kindly visit to CBSE Academic:**
https://cbseacademic.nic.in/curriculum_2023.html

- **Common Annual School Examination-(CASE) 2022-23 will be based on complete syllabus.**

Annual Examination(CASE) -2023

Note for the Teachers:

1. The chapter Natural Resources (NCERT Chapter 14) will not be assessed in the year-end examination. However, learners may be assigned to read this chapter and encouraged to prepare a brief write up on any concept of this chapter in their Portfolio. This may be for Internal Assessment and credit may be given for Periodic Assessment/Portfolio.
2. The NCERT text books present information in boxes across the book. These help students to get conceptual clarity. However, the information in these boxes would not be assessed in the year-end examination.

Question Paper Design Class IX/X (2022-23) Subject: Science (086)

Theory
Maximum Marks : 80

Duration :3 Hours

S.No.	Competencies	Total
1.	Demonstrate Knowledge and Understanding	46%
2.	Application of Knowledge/Concepts	22%
3.	Formulate, Analyze, Evaluate and Create	32%
	Total	100%

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.

Internal Assessment: 20 Marks

- Periodic Assessment – 05 marks + 05 marks
- Subject Enrichment (Practical Work) – 05 marks
- Portfolio – 05 marks .

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.
- **Formulate, Analyze, Evaluate and Create:**
Interpret, analyze, compare, contrast, examine, evaluate, discuss, construct, etc.