CBSE Class 9 Science Revised Syllabus PDF 2020-21

COURSE STRUCTURE

CLASS IX

Marks: 80

(Annual Examination)

Unit No.	Unit	Marks
I	Matter-Its Nature and Behaviour	27
II	Organization in the Living World	26
III	Motion, Force and Work	27
	Total	**80**
	Internal Assessment	**20**
	Grand Total	**100**

Theme: Materials

Unit I: Matter- It's Nature and Behaviour

Nature of matter: Elements, compounds and mixtures. Heterogeneous and homogenous mixtures, colloids and suspensions.

Particle nature and their basic units: Atoms and molecules, Law of constant proportions, Atomic and molecular masses. Mole concept: Relationship of mole to mass of the particles and numbers.

Structure of atoms: Electrons, protons and neutrons, valency, chemical formula of common compounds. Isotopes and Isobars.

Theme: The World of the Living

Unit II: Organization in the Living World

Cell - Basic 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.

Tissues, Organs, Organ System, Organism:

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

Health and Diseases: Health and its failure. Infectious and Non-infectious diseases, their causes and manifestation. Diseases caused by microbes (Virus, Bacteria and Protozoans) and their prevention; Principles of treatment and prevention. Pulse Polio programmes.

Theme: Moving Things, People and Ideas

Unit III: Motion, Force and Work

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, derivation of equations of motion by graphical method; elementary idea of uniform circular motion.

Force and Newton's laws : Force and Motion, Newton's Laws of Motion, Action and Reaction forces, Inertia of a body, Inertia and mass, Momentum, Force and Acceleration. Elementary idea of conservation of Momentum.

Gravitation: Gravitation; Universal Law of Gravitation, Force of Gravitation of the earth (gravity), Acceleration due to Gravity; Mass and Weight; Free fall.

Work, energy and power: Work done by a Force, Energy, power; Kinetic and Potential energy; Law of conservation of energy.

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ONLY FOR INTERNAL ASSESSMENT

Note: Learners are assigned to read the below listed part of Unit IV. 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.

PRACTICALS

Practicals should be conducted alongside the concepts taught in theory classes.

(LIST OF EXPERIMENTS)

1. Preparation of: **Unit-I**

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 distinguish between these on the basis of

- transparency
- filtration criterion
- stability

2. Preparation of **Unit-I**

a) A mixture
b) A compound
using iron filings and sulphur powder and distinguishing between these on the basis of:
(i) appearance, i.e., homogeneity and heterogeneity
(ii) behaviour towards a magnet
(iii) behaviour towards carbon disulphide as a solvent
(iv) effect of heat

3. Perform the following reactions and classify them as physical or chemical changes: **Unit-I**

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 solutions in water

4. Preparation of stained temporary mounts of (a) onion peel, (b) human cheek cells & to record observations and draw their labeled diagrams. **Unit-II**

5. Identification of Parenchyma, Collenchyma and Sclerenchyma tissues in plants, striped, smooth and cardiac muscle fibers and nerve cells in animals, from prepared slides. Draw their labeled diagrams. **Unit-II**

6. Determination of the density of solid (denser than water) by using a spring balance and a measuring cylinder. **Unit-III**

7. Establishing the relation between the loss in weight of a solid when fully immersed in

a) Tap water **Unit-III**

b) Strongly salty water with the weight of water displaced by it by taking at least two different solids.