CURRICULUM
Subject: Science(086)
Sesion: 2023-24
CLASS – IX

EVALUATION SCHEME		
Theory		
Unit No.	**UNITS**	**Marks**
I	Matter-Its Nature and Behaviour	**25**
II	Organization in the Living World	**22**
III	Motion, Force and laws of motion	**27**
IV	Food; Food Production	**06**
Total		**80**
Internal Assessment		**20**
Grand Total		**100**

Syllabus for Purpose of Examination 2023-24
CLASS IX

Chapter No/ Month.	**Name of chapter/Learning outcomes**	**Practical and Competency Skill Based Activities/ Experiential Learning**	**Skills**	**Assessments**
Biology: Chapter: 5 (Feb-March - April)	**The Fundamental Unit of Life** **Cell - Basic Unit of life:** **Learning outcomes:** Student will be able to: ● Understand:- cell as a basic unit of life ● Differentiate:- prokaryotic and eukaryotic cells, multicellular organisms; ● Describe:- cell membrane and cell wall, cell organelles and cell inclusions; chloroplast, mitochondria, vacuoles, endoplasmic reticulum, Golgi apparatus; nucleus, chromosomes - basic structure, number.	● Preparation of stained temporary mounts of (a) onion peel, (b) human cheek cells & to record observations and draw their labeled diagrams.	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
Chapter- 2 (Feb-March- April)	**IS MATTER AROUND US PURE** **Learning outcomes:** Student will be able to: ● Differentiate between a pure substance and an impure substance present around them ● Tabulate matter and its types and further complex branching of matter ● Classify the elements based upon their physical and chemical properties ● Explain the properties of metals and nonmetals and their applications in daily life.	● 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 distinguish between these on the basis of	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes on google forms/ lab activity

	● Differentiate between aqueous and non aqueous solutions ● Calculate the concentrations of the solutions by applying appropriate formulas. ● categorise saturated unsaturated and supersaturated solution ● Describe the Properties of suspensions ● Define a colloidal solution w.r.t. the dispersed phase and dispersion medium ● Categorise the types of colloidal systems	● transparency ● filtration criterion ● stability Unit-I: (Chapter -2) 2. Preparation of 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. behavior towards a magnet iii. behavior towards carbon disulphide as a solvent iv. effect of heat		
Chemistry: Chapter - 1 (May-June)	**MATTER IN OUR SURROUNDINGS:** **Learning outcomes:** Students will be able to ● Define matter ● Categorise matter into solid, liquid and gas ● Understand the characteristics - shape, volume, density ● Identify the change of state-melting (absorption of heat), freezing, evaporation (cooling by evaporation),condensation, sublimation.	● Perform the following reactions and classify 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 solutions in water.		
Physics: Chapter -8 (Feb-March - April)	**Motion** **Learning outcomes** Student will be able to: ● Define: Distance and displacement, velocity; uniform and non-uniform motion along a straight line; acceleration, ● Draw: distance-time and velocity-time graphs for uniform motion and uniformly accelerated motion. ● Derive: equations of motion by graphical method; ● Explain: elementary idea of uniform circular motion.	● Inter- class quiz And numerical based on different terms (Distance, Displacement,speed, velocity, acceleration)	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity.
Biology: Chapter-6 (May - June - July)	**Tissues, Organs, Organ System, Organism:** **Learning outcomes:** Student will be able to: ● **Describe:-** Structure and functions of animal and plant tissues (only four types of tissues in animals; ● Differentiate between:- Meristematic and Permanent tissues in plants).	● 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.	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity.
Physics: (May - June - July)	**Force and Laws of Motion** **Learning outcomes** Student will be able to: ● Define: Force and Newton's laws: Force and Motion, Newton's Laws of Motion, Action and Reaction forces, Inertia of a body. ● Explain: Inertia and mass, Momentum, Force and Acceleration. ● Define: Elementary idea of conservation of Momentum.	● Inter- class quiz And numerical based on motion,momentum,and conservation of momentum.	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity

Chemistry: Chapter- 3 (July - Aug)	**ATOMS AND MOLECULES** **Learning outcomes:** Students will be able to: ● Explain the law of conservation of mass and law of constant composition ● Tell the experiment to verify the law of conservation of mass ● solve the numericals based upon the law of conservation of mass and law of constant composition ● Give the postulates of atomic theory by Dalton. ● Calculate the limitations or drawbacks of Dalton's atomic theory ● Calculate and define the atomic mass and relative atomic mass ● Differentiate between Molecules of an element and molecules of a compound ● Calculate the molecular mass of different Compounds ● Write the chemical formula of compounds ● Have a clear vision about gram atomic mass and gram molecular mass ● Introduction of moles concept.	● Solving numericals based upon the mole concept. ● Verification of the law of conservation of mass in a chemical reaction	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes on google forms/ lab activity
Physics: Chapter-10 (July-Aug)	**Gravitation** **Learning outcomes** Student will be able to: ● Explain: Gravitation; Universal Law of Gravitation. ● Define: Force of Gravitation of the earth (gravity). ● Explain: Acceleration due to Gravity. ● Differentiate: Mass and Weight; Free fall.	● Determination of the density of solid (denser than water) by using a spring balance and a measuring cylinder. ● Establishing the relation between the loss in weight of a solid when fully immersed ina) Tap water] ● Strongly salty water with the weight of water displaced by it by taking at least two different solids ● Determination of the melting point of ice and the boiling point of water.	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
Biology: Chapter- 13 (Aug.-Sept - Oct)	● **Food Production** **Students will be able to:** ● **Understand:** Plant and animal breeding and selection for quality improvement and management; Describe: Use of fertilizers and manures; Explain: Protection from pests and diseases; Organic farming.	● Inter - class quiz on different food resources (Plants and Animals)	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity

Chemistry: Chapter - 4 (September - October)	**STRUCTURE OF ATOM** **Learning outcomes:** Students will be able to: ● Explain: the discovery of electrons or study of cathode rays. ● Analyze the properties of cathode rays ● Define electrons and write the charge and mass on electron ● Describe the origin and production of anode rays ● Analyze the properties of anode rays ● Describe Thomson model of atom ● Describe Rutherford model of atom ● Detailed explanation of Bohr's model atom ● Relate the atomic number and mass number ● Calculate the number of electrons protons and neutrons from atomic number and mass number ● Calculate the valence electrons and valency of an element ● Give examples of isotopes and define them ● Describe the applications of isotopes ● Define isobars		Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
Physics: chapter-11 (September - October)	**Work, energy and power**: **Learning outcomes** Student will be able to: ● Define: Work done by a Force. ● Explain: Energy, power. ● Define: Kinetic and Potential energy; Law of conservation of energy.	● Numerical based on work power and energy	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
Physics Chapter-12 November	**Sound** Students will be able to: ● Understand: Nature of sound and its propagation in various media ● Describe: Echo and Sonar. ● Explain:. Structure of the Human Ear (Auditory aspect only)	● Verification of the Laws of reflection of sound. ● Determination of the speed of a pulse propagated through a stretched string/slinky (helical spring). ● **Competency based activity** To analyze national anthem on the basis of pitch and amplitude.	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
Biology: Chapter- 14 October	**Our Environment** Natural Resources Students will be able to: ● Describe:- Physical resources: Air, Water, Soil. Air for respiration, for combustion, for moderating temperatures; movements of air and its role in bringing rains across India. ● Analyze:- Air, water and soil pollution (brief introduction).Holes in ozone layer and the probable damages.	**Portfolio/File presentation** **Based on natural resources**	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity