

CLASS: X
SUBJECT: PHYSICS_(2026-27)

COURSE OBJECTIVE:

1. Understanding Fundamental Concepts

- To develop a clear understanding of basic principles and laws of physics, such as motion, force, energy, work, and electricity.

2. Application of Knowledge

- To apply theoretical knowledge to solve numerical problems and analyze situations using physics laws and equations.
- To integrate concepts with practical applications in fields like technology, engineering, and sustainable energy.

3. Development of Practical Skills

- To enhance observation and experimentation skills through hands-on activities and laboratory experiments.
- To understand and use scientific equipment safely and effectively.

4. Analytical and Critical Thinking

- To develop analytical reasoning to interpret and evaluate data, graphs, and experimental outcomes.
- To nurture problem-solving skills and logical thinking for real-world scenarios.

5. Connection to Technology

- To explore the relationship between physics and technological advancements, emphasizing their impact on society and the environment.
- To foster curiosity about innovation and its underlying principles.

6. Environmental Awareness

- To understand the implications of physics concepts on energy conservation, pollution, and sustainable development.
- To encourage the use of physics knowledge to promote environmental stewardship.

7. Collaborative and Independent Learning

- To promote teamwork through group activities and discussions.
- To encourage independent inquiry and lifelong learning habits in science

TERM-I CLASS-X SUBJECT: PHYSICS

MONTH	COURSE DESCRIPTION	LEARNING OUTCOME	ACTIVITY	NO. OF PERIODS
April	REFLECTION OF LIGHT Nature of light Reflection of light laws of reflection	- Recognize nature and properties of light - Understand the phenomena of reflection of light and its laws.	In class Activity Reflection of light with laser light at different angles. In lab Activity - To determine converging nature of concave mirror and its focal length, nature of image formed at various positions.	02
	Reflection from plane and curved surfaces, center of curvature, principal axis, principal focus, focal length	- Differentiate between regular and irregular reflections. - Understand meaning of the terms - centre of curvature, principal axis, principal focus, focal length of spherical mirrors.	Interactive Board Activity Phet simulation for obtaining images for mirrors at different distances, Interactive Quizzes	02
	Mirrors plane, concave & convex Images formed by spherical mirrors Sign convention	- Draw ray diagrams of image formations through mirrors and describe the nature of images formed. - Know and apply the sign convention for measuring u, v & f	Art Integration Activity : story board, • Objects of day-to-day use in groups and in different settings and arrangements. (4.1.2.1.3)	

MONTH	COURSE DESCRIPTION	LEARNING OUTCOME	ACTIVITY	NO. OF PERIODS
	Mirror formula and magnification	Derive mirror formula and apply them to solve numerical.	Interactive Board Activity STEM Challenge Boards , Digital Whiteboarding	01
	REFRACTION OF LIGHT Laws of refraction	Recognize and understand Phenomena of refraction and its laws.	Interactive Board Activity : Phet simulations, AV resources Art Integration: Comic strips, Study of lines, strokes	01
	Refraction through a rectangular slab	Draw ray diagram of refraction through glass slab and label incident ray, emergent ray. Measure angle of emergence and lateral displacement.	In Lab activity : Refraction through Glass slab Interactive Board Activity : Phet simulations, Digital Whiteboarding	02
May-June	Refractive index Refraction by lenses	Understand the rules for drawing ray diagrams through lenses and related terms.	In Class Activity : Focusing the sunlight using convex lens, Refraction through transparent liquids of different optical densities (oil & water) In lab Activity : To show convergence of convex lens and its focal length, nature of image formed	01

MONTH	COURSE DESCRIPTION	LEARNING OUTCOME	ACTIVITY	NO. OF PERIODS
			by convex lens. Calculate the refractive index of the given glass slab by geometrical method	
	Image formation by spherical lenses	Draw ray diagrams of image formations through lenses.	In Class Activity: To calculate the focal length of lens used in spectacles in group Outside Class Activity: To determine the focal length of a convex lens by focusing a distant object. Interactive Board Activity : Interactive Diagrams	02
	Lens formula and magnification	Derive lens formula and discuss its magnification.	In lab Activity: To find the image distance for varying object distances in case of a convex lens and drawing corresponding ray diagrams to show the nature of image formed.	02

MONTH	COURSE DESCRIPTION	LEARNING OUTCOME	ACTIVITY	NO. OF PERIODS
	Power of a lens	Understand the concept of power of a lens and measure power for myopic as well as hypermetropic eye.	In Class Activity : To find Power of lens by rough focal length method. Zero Waste Activities: - To Make lenses from waste plastic - To demonstrate complete reflection of light inside glass / Plastic sheet.	01
July	THE HUMAN EYE AND THE COLOURFUL WORLD The human eye Power of accommodation Defects of vision and their corrections	Understand the structure of the human eye and the functions of various parts which helps in vision. •Recognize different defects of vision, their cause & their remedies: myopia hypermetropia presbyopia	Interactive Board Activity : Audio visual aid on the function of various parts of an eye, Colour blindness simulation, • Collaborative Mind Maps Art Integration Activity: • Assignments in two and three-dimensional subjective forms (4.1.3.1) , Creative use of colours to show space, atmosphere (4.1.1.13)	01
	Refraction of light by prism	Understand the concept and draw ray diagram to show refraction through prism.	In Lab Activity : Tracing the path of rays of light through a glass Prism	01
	Dispersion of white light by a glass prism	Understand the show phenomena of dispersion when ray of light passes	In lab /Outside Class Activity: Dispersion of white light into seven	01

MONTH	COURSE DESCRIPTION	LEARNING OUTCOME	ACTIVITY	NO. OF PERIODS
		through prism.	colours using prism	
	Atmospheric refraction Scattering of light	Explain the reason for refraction taking place in nature, recognize and understand some idea of TIR and its application, explain the formation of rainbow. • Understand concept of scattering, distinguish between scattering and dispersion. Explain its applications in nature	Art Integration Activity: - Sketching from nature and surrounding - Nature walk: To observe scattering effect in nature - Mixing the rainbow colours to get white light Zero Waste Activities: - To demonstrate how eye adjusts lens shape for near/far vision. - To show the path of light with black box and chalk dust particles.	02
August	ELECTRICITY AND ITS EFFECTS Potential and potential differences.	Understand the concept of charge & electric field • Understand the concept of potential difference, electric current and able to measure them. • Understand some idea about coulomb's law and able to write the expression for electrostatic force.	Art Integration Activity: Study of lines, strokes, colours, shades, tones, textures, etc. while organizing two-dimensional space with two dimensional and three-dimensional shapes and forms Interactive Board Activity :	02

MONTH	COURSE DESCRIPTION	LEARNING OUTCOME	ACTIVITY	NO. OF PERIODS
			STEM Challenge Boards	
	Electric current and circuit - Circuit diagram - Ohm's law	State Ohm's law & verify the same experimentally. Determine the equivalent resistance in a circuit when two or more resistances are connected either in series or in parallel.	In Class Activity: Building a simple Electric circuit In lab Activity: Verification of Ohm's Law. Draw V-I graph to determine the resistance , To observe the change in the brightness in bulbs using a rheostat Interactive Board Activity : Gamified Quizzes	02
	Factors on which the resistance of a conductor depends	List the factors on which resistance depends and write the expression for resistance of a conductor mathematically.	Outside Class Activity : To calculate the resistance of different wires of various length and thickness	01
	Combination of resistances in series and parallel	Connect two or more resistance in series as well as in parallel. Know the advantage and disadvantages of the two types of resistance combination. Determine the values of equivalent resistance in both the cases series & parallel	In lab Activity : To calculate the equivalent resistance of resistors connected in series/ Parallel , Draw V-I graph to determine the equivalent resistance , - To show the distribution of current	02



MONTH	COURSE DESCRIPTION	LEARNING OUTCOME	ACTIVITY	NO. OF PERIODS
			(brightness) and voltage drop across each bulbs connected in series and parallel	
	Heating effects of electric current and its applications. Power: commercial unit of electrical energy	• Have knowledge of electricity and its effects. • Know the commercial unit of electrical energy and able to calculate the electricity bill.	Outside class Activity: Reading an electricity bill and calculating the energy consumption and draw the line graph , Art Integration Activity : Study of visual resources (4.1.1.1) Zero Waste Activity : 1.Simple Circuits with Reused Wires/Components 2.Energy Audit at Home/School by tracking electricity usage and waste	01
September	REVISION FOR TERM 1			

TERM-II CLASS-X SUBJECT: PHYSICS

MONTH	COURSE DESCRIPTION	LEARNING OUTCOME	ACTIVITY	NO. OF PERIODS
October	MAGNETIC EFFECT OF ELECTRIC CURRENT	- Know the relation between electricity & magnetism. - Know the properties of magnetic field and magnetic lines of forces.	In lab Activity Demonstration of Oersted's experiment, Alignment of iron filings in the presence of a magnet. Interactive Board Activity : Phet simulations on generation of Magnetic field lines , Case Study Analysis	01
	Magnetic field and field lines	Draw diagrams showing the pattern & direction of magnetic field	In Class Activity: Using a magnetic needle drawing the magnetic field around the bar magnet.	01
	Magnetic field due to current carrying conductor	Understand and determine the direction of magnetic field in current carrying conductor (straight as well as circular).	Interactive Board activity: Phet simulations on factors on which magnetic field due to current carrying	01

			conductor depends , Gamified Learning	
	Straight conductors (coils) Right Hand Thumb Rule	- List the factors on which the magnetic field depends. - SI unit of magnetic field - tesla	In Lab Activity: Demonstration of pattern and direction of magnetic field produced by a straight wire carrying current.	01
	Magnetic field due to a current carrying conductor, Solenoid	Apply the rule to determine the direction of magnetic field.	In Lab Activity: Demonstration of pattern and direction of magnetic field produced by a circular loop of wire carrying current. To show magnetic compass deflection by passing current through Solenoid.. In class Activity : Creating an electromagnet	02
November	- Force on current carrying conductor - Fleming's Left Hand Rule	Understand mathematical expression for force experienced by current carrying conductor and charged particles inside a magnetic field. • State Fleming Left Hand Rule and apply it to determine the direction of force	Interactive Board Activity: Animated Concept Explanation on Fleming Left hand Rule Outside Class Activity: STEM Innovation Hub	02
	Domestic electric circuits	Understand the details of electric circuiting at home & offices.	In class Activity : A comparative study on the rating of fuse	02



			• Understand the causes of short-circuit & overloading. Distinguish between shortcircuit and overloading. • Have knowledge to apply the methods of preventing short-circuit and overloading.	wire for various electronic devices. Outside Class Activity : Innovation and Robotics Hub Art Integration Activity : • Study of visual resources (at home and in the surroundings) and means of creative expression Zero Waste Activity : 1.To show Magnetic Deflection with Recycled Materials. 2.To use Electromagnet for Metal Sorting 3.To design Electromagnet with Scrap Materials • Community and Partnership Activities STEM Exchange Programme Virtual Field Trips Organisational Visits Talks by Scientists Corporate STEM Sponsorship	
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			E-Waste Collection and Awareness Drive	
			Virtual STEM Webinars	
	REVISION FOR PB-1			

ASSESSMENT PATTERN

The academic year is divided into two terms. Students will be evaluated through formal assessments as well as through their day-to-day performance under the Continuous and Comprehensive Evaluation (CCE).

Four formal assessments will be conducted in the academic session, twice during each term:

- Pre Mid-Term Assessment (PT1)
- Mid-Term Assessment (MT)
- Post Mid-Term Assessment (PT2)
- Annual Examination (AE)

Evaluation of Academic Subjects: Class X

Type of Assessment	Date	Duration of Written Assessment	Max Marks	Portion to be tested
Pre Mid-Term Assessment (Written & Continuous Assessment) (PT-1)	20-07-2026	2 hours	Written – 40 marks, CCE – 10 marks	1. Reflection and Refraction of light
Mid-Term Assessment (Written Assessment)	04-09-2026	3 hours	Written – 80 marks	1. Reflection and refraction of light 2. Human eye and the colourful world 3. Electricity upto factors affecting

Type of Assessment	Date	Duration of Written Assessment	Max Marks	Portion to be tested
				resistance
Preboards I & II	04-12-2026 & 18-01-2027	3 hours	Written – 80 marks	Full Syllabus
Annual Examination (Written Assessment)		3 hours	Written – 80 marks	Full Syllabus

CCE will comprise of continuous assessment based on the following criteria:

TERM -1

Term	S. No	Name of the Activity and Description	Evaluation criteria/Rubrics	Duration of assessment	Learning Outcome
1	1.	Multiple Assessment 1: Concept Mapping	Evaluation criteria: Provide a topic on which concept map is to draw on paper. Rubrics : • Content Accuracy • Hierarchical Structure (Organization of Ideas) • Relationships and Connections (Links Between Concepts) • Clarity and Presentation • Creativity and Innovation	01	• Content Accuracy • Hierarchical Structure (Organization of Ideas) • Relationships and Connections (Links Between Concepts) • Clarity and Presentation • Creativity and Innovation.

Term	S. No	Name of the Activity and Description	Evaluation criteria/Rubrics	Duration of assessment	Learning Outcome
		Multiple Assessment 2: Power Point Presentation:	Evaluation Criteria: Students can create a PowerPoint presentation as a project deliverable to demonstrate their understanding of a topic. Rubrics : • Content • Organization • Design and Visual Appeal • Use of Multimedia • Delivery and Engagement • Creativity and Originality	01	• Technical and Digital Skills • Knowledge and Understanding • Critical Thinking and Analysis • Creativity and Innovation
	2.	Subject Enrichment 1: Written viva test based on experiments/Activities (Observations & calculations)	• Understanding of the Experiment • Observations • Data Analysis and Calculations • Application of Theoretical Concepts • Clarity and Organization of Responses	02	• Experimental Understanding • Data Collection and Observation Skills: • Application of Theoretical Concepts: • Accuracy and Precision • Problem-Solving and Critical Thinking
		Subject Enrichment 2 : Model Making (Group	• Creativity and Innovation • Craftsmanship and Quality of Work • Relevance and Functionality		• Development of Creativity and Innovation • Enhanced Understanding of

Term	S. No	Name of the Activity and Description	Evaluation criteria/Rubrics	Duration of assessment	Learning Outcome
		Activity)	• Use of Materials and Resources • Presentation and Explanation		Concepts • Improvement in Spatial and Visual Thinking • Practical Problem-Solving Skills
	3.	Class Work/ Home Work Record/ Class Participation and Response	• Content Accuracy • Completeness • Organization • Presentation • Timeliness • Creativity/Engagement		• Organizational Skills • Time Management • Attention to Detail • Retention and Understanding • Creativity and Presentation • Problem-Solving and Self-Reflection

TERM-2

Term	S. No	Name of the Activity and Description	Evaluation criteria/Rubrics	Duration of assessment	Learning Outcome
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Term	S. No	Name of the Activity and Description	Evaluation criteria/Rubrics	Duration of assessment	Learning Outcome
1	1.	Multiple Assessment 1: Open Book Test (OBT)	Evaluation criteria : Provide a real-world problem related to [concept] and ask the students to propose a solution using the theory learned in class. Rubrics: • Understanding of Concepts • Application of Knowledge • Critical Thinking and Analysis • Organization and Clarity • Time Management	01	• Apply Knowledge to Practical Situations • Evaluate Complex Ideas or Arguments: • Analyze and Synthesize Information • Adaptability in Problem Solving
		Multiple Assessment 2: Flow Charts	Evaluation criteria : Ask the students to create a flowchart for a given process by representing its steps or stages. Rubrics: • Correctness of Content • Clarity • Creativity and Organization • Completeness and Detail • Neatness and Presentation	01	• Demonstrate Understanding of the Process or Concept • Organize Information Effectively • Apply Problem-Solving and Analytical Skills • Demonstrate Creativity in Presenting Solutions
	2.	Subject Enrichment 1: Continuous Assessments	Evaluation criteria • Preparation & Organization • Following Procedures	02	• Develop Competence in Using Lab Equipment • Collect, Record, and Analyze Data

Term	S. No	Name of the Activity and Description	Evaluation criteria/Rubrics	Duration of assessment	Learning Outcome
		of Lab skills- Practical record	• Use of Lab Equipment • Data Collection and Recording • Analysis and Interpretation		• Demonstrate Analytical and Critical Thinking • Develop Independent and Collaborative Problem-Solving Skills
		Subject Enrichment2 : Integrated Project (Research Based)	Evaluation criteria • Creativity & Originality • Writing Quality & Clarity • Organization & Structure • Data Collection & Analysis • Findings/Results • Conclusion	-	• Research Skills: • Critical Thinking • Methodological Understanding: • Analysis and Interpretation • Reflection and Self-Assessment
	3.	Class Work/ Home Work Record/ Class Participation and Response	• Content Accuracy • Completeness • Organization • Presentation • Timeliness • Creativity/Engagement		• Organizational Skills • Time Management • Attention to Detail • Retention and Understanding • Creativity and Presentation • Problem-Solving and Self-Reflection

THE DETAILS OF WRITTEN ASSESSMENT

What are the skills being evaluated?

This section includes the cognition levels at which the students would be evaluated, marks distribution in terms of percentage for each cognition level and the commonly used terminology for framing questions under each cognition level.

Cognition Level	%	What does it mean
Knowledge	46%	Has the child acquired information regarding the facts, figures and theories discussed in the classroom? This includes questions like define, Stating Laws, Theories, Expansion of abbreviations, describe, explain etc.
Understanding	22%	It tests whether the child has comprehended the concepts. This includes questions like differentiate, compare, justify, reason, derive, classify, illustrate , application in daily life situation etc
Application/skill	32%	Can the child apply the concepts he/she has learned in daily life situations? This includes questions like Problem solving, numerical interpretation of data, reasoning, predicting, analyzing, synthesis, drawing diagrams etc

How will the students be evaluated? (Blue Print)

This section includes the structure of question paper and the marks distribution pattern for various types of questions.

PRE-MIDTERM AND POST-MIDTERM TEST

PRE-MIDTERM (PT1and PT2)

Physics (13 marks) + Chemistry (13 marks) + Biology (14 marks): Total= 40 (Duration: 2 Hrs.)

SECTION	Very short answer (1 mark)	Short answer (2 mark)	Short answer (3 mark)	Long answer (5 mark)	TOTAL MARKS
Section – A(BIOLOGY)	2	2	1	1	14
Section –B (CHEMISTRY)	3	2	2	-	13
Section - C (PHYSICS)	3	2	2	-	13

MID-TERM and ANNUAL EXAM

Physics (25 marks) + Chemistry (25 marks) + Biology (30marks): Total=80 (Duration: 3Hrs.)

SECTION	MCQ/AR (1 mark)	Short answer (2 mark)	Short answer (3 mark)	CASE BASED (4 marks)	Long answer (5 mark)	TOTAL MARKS
Section – A(BIOLOGY)	7+2	3	2	1	1	30
Section –B (CHEMISTRY)	7+1	1	2	1	1	25
Section - C (PHYSICS)	2+1	2	3	1	1	25