SANT NANDLAL SMRITI VIDYA MANDIR

GHATSILA, JHARKHAND

SESSION:-2026-27

Subject- Physics **Class-XI**

S.no.	Working Days	Months	Name of Units/Chapter	Learning Objectives	Learning Outcomes	Experiments/Activities/Demonstrations
1	23	April	Unit-I, Chapter 2-Units and Measurements Unit-II, Chapter 3- Motion in a straight line	➢ To critically understand the role of measurement. ➢ To understand various Physical quantities and describe different systems of units & apply dimensional analysis. ➢ To describe and analyze the motion of object in terms of position, time, velocity and acceleration.	Students will be able to : • Apply concept of dimensional analysis. • Recognize position-time and velocity-time graphs for uniform and non-uniform motion. • Apply & use position-time graphs in numerical problems.	Act.1: To make a paper scale of least count 0.2 cm, 0.5 cm. Expt.1: Determination of diameter of a spherical/cylindrical body using Vernier Callipers.
2	08	May	Unit-II, Chapter 4- Motion in a plane	➢ To describe and analyze motion in two dimensions.	Students will be able to : • Differentiate between 1D, 2D, 3D motion. • Apply the concept of Dot and Cross product of vectors.	Expt.2: Determination of diameter of object using Screw gauge. Act.2: To study the variation in range of a projectile with angle of projection.

3	11	June	Unit-II, Chapter 4- Motion in a plane.	➢ To correlate the motion of objects to a frame of reference.	• Apply triangular and parallelogram laws of vectors. • Apply the concept of projectile motion in numerical problems.	Expt.3: Determination of radius of curvature by Spherometer. Act.3: To determine mass of a given body using a metre scale by principal of moments.
4	26	July	Unit-III, Chapter 5- Laws of Motion Unit-IV, Chapter6- Work, Energy and Power	➢ To critically apply and understand Newton's three laws of motion. ➢ To understand the concept of scalar product, apply work-energy theorem in kinematics, differentiate the concept of conservative and non-conservative forces.	Students will be able to : ▪ Differentiate between balanced and unbalanced forces. ▪ Visualize the different types of work done. ▪ Differentiate between elastic and inelastic collision.	Demonstration: ▪ Velocity of a ball on inclined plane. ▪ Velocity of pendulum when it passes through mean position and extreme position. ▪ Verification of law of parallelogram.
5	23	August	Unit-V, Chapter 7- System of Particles and Rotational motion	➢ To critically understand the concept of COM,COG and MI of different shapes. ➢ To apply theorem of parallel and perpendicular axes.	Students will be able to: ❖ Visualize the concept of centre of mass of rigid body. ❖ Compare the linear and rotational motion. ❖ Apply the concept of torque and its applications.	Expt.4: To determine the radius of curvature of a given spherical surface by Spherometer. Expt.5: To determine the mass of two different objects using a beam balance.
6	23	September	Unit-VI, Chapter 8- Gravitation Unit-VII, Chapter 9- Mechanical Properties of Solids	➢ To state Newton's law of gravitation, Kepler's law of planetary motion, differentiate gravity and gravitation, apply the concept of gravitational potential. ➢ To understand the concept of elasticity, Apply Hooke's law.	Students will be able to : ❖ Learn the mechanism of launching of a satellite. ❖ Understand the variation of g with altitude and depth. ❖ Calculate the energy of a satellite.	Act.4: To plot a graph for a given set of data, with proper choice of scales and error bars. Expt.6: To determine Young's modulus of elasticity of the material of a given wire.
7	16	October	Unit-VII, Chapter 10- Mechanical Properties of Fluids Unit-VII, Chapter 11- Thermal Properties of Matter	➢ To critically understand the role of pressure. ➢ To apply Pascal's theorem, Bernoulli's theorem and Stoke's law.	Students will be able to : ❖ Understand the significance of high and low pressure. ❖ Explore the notion of Sea Breeze and land breeze.	Expt.7: To determine the surface tension of water by capillary rise method. Expt.8: To study the relation between frequency and length of a

				➢ To understand the significance of anomalous expansion of water, application of calorimetry, role of specific heats.	❖ Analyze the role and impact of GHGs. ❖ Co-relate design of Cars etc.	given wire under constant tension using Sonometer. Expt.9: To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
8	19	November	Unit-VIII, Chapter 12- Thermodynamics Unit-IX, Chapter 13- Kinetic Theory	➢ To understand and state Zeroth law, first law and second law of thermodynamics. ➢ To understand various process of thermodynamics. ➢ To apply KTG.	Students will be able to : ❖ Critically understand the working of heat engine. ❖ Understand different thermodynamics process. ❖ Concept of KTG at macroscopic level.	Act.5: To observe change of state and plot a cooling curve for molten wax. Act.6: To observe and explain the effect of heating on a bi-metallic strip.
9	19	December	Unit-X, Chapter 14- Oscillations	➢ To understand the concept of periodic motion, significance of SHM.	Students will be able to : ❖ Learn the basic terminology of oscillations. ❖ Apply SHM in various numerical problems.	Demonstration: ▪ Formation of stationary waves by Sonometer. ▪ Formation of wave by paper straw.
10	20	January	Unit-X, Chapter 15- Waves	➢ To understand wave motion, characteristics of wave motion, superposition of waves.	Students will be able to : ❖ Explore the mechanism of wave propagation. ❖ Apply the principle of superposition.	Act.7: To study the effect of detergent on surface tension of water by observing capillary rise. Act.8: To study the factors affecting the rate of loss of heat of a liquid.
11	23	February	Revision			
12	22	March	Revision and Exams			

Subject Teacher: 1) Mr. Tapan Mahata

2) Mr. Pankaj Kumar

Principal