

PNS SCHOOL OF ENGINEERING & TECHNOLOGY, MARSHAGHAI  
DEPARTMENT OF SCIENCE AND HUMANITIES  
LESSON PLAN

DISCIPLINE : SEMESTER: 1ST SUBJECT: ENGG PHYSICS NO.OF DAYS/WEEK CLASS ALLOTTED: 06		NAME OF THE TEACHING FACULTY: MR KSHITISH KUMAR SINGH	
		SEMESTER FROM DATE: 09/11/2022 TO DATE: 31/01/2023 NO OF WEEKS: 11	
WEEK		CLASS DAY	THEORY TOPICS
2nd of Nov	UNIT 1	1	Physical quantities - (Definition).Definition of fundamental and derived units, systems of units (FPS, CGS, MKS and SI units).
2nd of Nov		2	Definition of dimension and Dimensional formulae of physical quantities. Dimensional equations and Principle of homogeneity
2nd of Nov		3	Checking the dimensional correctness of Physical relations.
2nd of Nov	UNIT 2	4	Scalar and Vector quantities (definition and concept), Representation of a Vector – examples, types of vectors. Triangle and Parallelogram law of vector Addition (Statement only). Simple Numerical
2nd of Nov		5	Resolution of Vectors – Simple Numericals on Horizontal and Vertical components.
2nd of Nov		6	Vector multiplication (scalar product and vector product of vectors).
3rd of Nov	UNIT 3	7	Concept of Rest and Motion.
3rd of Nov		8	dimension & SI units).
3rd of Nov		9	derivation. Circular motion: Angular displacement, Angular velocity and Angular acceleration (definition, formula & SI units).
3rd of Nov		10	Relation between –(i) Linear & Angular velocity, (ii) Linear & Angular acceleration). Time of Flight, Maximum Height and Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range.
3rd of Nov		11	Define Projectile, Examples of Projectile. 3.7 Expression for Equation of Trajectory
3rd of Nov		12	Time of Flight, Maximum Height and Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range.
4th of Nov	UNIT 4	13	Work – Definition, Formula & SI units.
4th of Nov		14	Friction – Definition & Concept.
4th of Nov		15	Types of friction (static, dynamic), Limiting Friction (Definition with Concept).
4th of Nov		16	Laws of Limiting Friction (Only statement, No Experimental Verification).
4th of Nov		17	Coefficient of Friction – Definition & Formula, Simple Numericals. Methods to reduce friction.
4th of Nov	UNIT 5	18	Newton’s Laws of Gravitation – Statement and Explanation.Universal Gravitational Constant (G)- Definition, Unit and Dimension.
1st of Dec		19	Acceleration due to gravity (g)- Definition and Concept. Relation between g and G. .
1st of Dec		20	Definition of mass and weight.
1st of Dec		21	Variation of g with altitude and depth (No derivation – Only Explanation)
1st of Dec		22	Kepler’s Laws of Planetary Motion (Statement only).
1st of Dec	UNIT 6	23	Simple Harmonic Motion (SHM) - Definition & Examples. 6.2 Expression (Formula/Equation) for displacement, velocity, acceleration of a body/ particle in SHM.
1st of Dec		24	Wave motion – Definition & Concept
2nd of Dec		25	Transverse and Longitudinal wave motion – Definition, Examples & Comparison.
2nd of Dec		26	Definition of different wave parameters (Amplitude, Wavelength, Frequency, Time Period.

2nd of Dec		27	Derivation of Relation between Velocity, Frequency and Wavelength of a wave
2nd of Dec		28	Ultrasonics – Definition, Properties & Applications.
2nd of Dec	UNIT 7	29	Heat and Temperature – Definition & Difference Units of Heat (FPS, CGS, MKS & SI).
2nd of Dec		30	Specific Heat (concept, definition, unit, dimension and simple numerical) Change of state (concept), Latent Heat (concept, definition, unit, dimension and simple numerical)
3rd of Dec		31	Thermal Expansion – Definition & Concept Expansion of Solids (Concept)
3rd of Dec		32	Coefficient of linear, superficial and cubical expansions of Solids – Definition & Units.
3rd of Dec		33	Relation between $\alpha$ , $\beta$ & $\gamma$
3rd of Dec		34	Work and Heat - Concept & Relation. Joule's Mechanical Equivalent of Heat (Definition, Unit)
3rd of Dec		35	First Law of Thermodynamics (Statement and concept only)
3rd of Dec	UNIT 8	36	Reflection & Refraction – Definition. Laws of reflection and refraction (Statement only) .
1st of Jan 2023		37	Refractive index – Definition, Formula & Simple numerical. Critical Angle and Total internal reflection – Concept, Definition & Explanation
1st of Jan 2023		38	Refraction through Prism (Ray Diagram & Formula only – NO derivation).
1st of Jan 2023		39	Fiber Optics – Definition, Properties & Applications.
1st of Jan 2023	UNIT 9	40	Electrostatics – Definition & Concept. Statement & Explanation of Coulombs laws, Definition of Unit charge.
1st of Jan 2023		41	Absolute & Relative Permittivity ( $\epsilon$ ) – Definition, Relation & Unit. Electric potential and Electric Potential difference (Definition, Formula & SI Units).
1st of Jan 2023		42	Electric field, Electric field intensity (E) – Definition, Formula & Unit.
2nd of Jan 2023		43	Capacitance - Definition, Formula & Unit. Series and Parallel combination of Capacitors No derivation
2nd of Jan 2023		44	Formula for effective/Combined/total capacitance & Simple numericals. Magnet, Properties of a magnet.
2nd of Jan 2023		45	Coulomb's Laws in Magnetism – Statement & Explanation, Unit Pole (Definition). Magnetic field, Magnetic Field intensity (H) - (Definition, Formula & SI Unit).
2nd of Jan 2023		46	Magnetic lines of force ( Definition and Properties). Magnetic Flux ( $\Phi$ ) & Magnetic Flux Density (B) – Definition, Formula & Unit.
2nd of Jan 2023	UNIT 10	47	Electric Current – Definition, Formula & SI Units. .
2nd of Jan 2023		48	Ohm's law and its applications.
3rd of Jan 2023		49	Series and Parallel combination of resistors .No derivation, Formula for effective/ Combined/ total resistance .
3rd of Jan 2023		50	Simple numericals
3rd of Jan 2023		51	Kirchhoff's laws (Statement & Explanation with diagram)
3rd of Jan 2023		52	Application of Kirchhoff's laws to Wheatstone bridge - Balanced condition of Wheatstone's Bridge – Condition of Balance (Equation).
3rd of Jan 2023	UNIT 11	53	Electromagnetism – Definition & Concept.
3rd of Jan 2023		54	Force acting on a current carrying conductor placed in a uniform magnetic field, Fleming's Left Hand Rule
4th of Jan 2023		55	Faraday's Laws of Electromagnetic Induction (Statement only)
4th of Jan 2023		56	Lenz's Law (Statement) Fleming's Right Hand Rule
4th of Jan 2023		57	Comparison between Fleming's Right Hand Rule and Fleming's Left Hand Rule.
4th of Jan 2023	UNIT 12	58	LASER & laser beam (Concept and Definition) Principle of LASER (Population Inversion & Optical Pumping)
4th of Jan 2023		59	Properties & Applications of LASER
4th of Jan 2023		60	Wireless Transmission – Ground Waves, Sky Waves, Space Waves ( Concept & Definition)

Sunakar Singh.

Signature of the HOD

Kshitish Kumar Singh.

Signature of the Teacher