Discipline All branch	Semester 1st	Lesson Plan for the session 2022-23 1st Semester
Week	No. of Class/week-4	Theory Semester from date : 25.10.2022 to 31.01.2023 No. of weeks :- 16 (Including Extra Classes)
1st	1st	Physical quantities - (Definition).
	2nd	Definition of fundamental and derived units, systems of units (FPS, CGS, MKS and SI units).
	3rd	Definition of dimension and Dimensional formulae of physical quantities.
	4th	Dimensional equations and Principle of homogeneity. Checking the dimensional correctness of Physical relations.
2nd	1st	Scalar and Vector quantities (definition and concept), Representation of a Vector – examples, types of vectors.
	2nd	Triangle and Parallelogram law of vector Addition (Statement only). Simple Numerical.
	3rd	Resolution of Vectors – Simple Numericals on Horizontal and Vertical components.
	4th	Vector multiplication (scalar product and vector product of vectors).
3rd	1st	Concept of Rest and Motion.
	2nd	Displacement, Speed, Velocity, Acceleration & FORCE (Definition, formula, dimension & SI units).
	3rd	Equations of Motion under Gravity (upward and downward motion) - no derivation.
	4th	Circular motion: Angular displacement, Angular velocity and Angular acceleration (definition, formula & SI units).
4th	1st	Relation between –(i) Linear & Angular velocity, (ii) Linear & Angular acceleration).
	2nd	Define Projectile, Examples of Projectile. Expression for Equation of Trajectory, Time of Flight, Maximum Height and Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range.
	3rd	Work – Definition, Formula & SI units.
	4th	Friction – Definition & Concept.

5th	1st	Types of friction (static, dynamic), Limiting Friction (Definition with Concept).
	2nd	Laws of Limiting Friction (Only statement, No Experimental Verification).
	3rd	Coefficient of Friction – Definition & Formula, Simple Numericals. Methods to reduce friction.
	4th	Newton's Laws of Gravitation – Statement and Explanation.
6th	1st	Universal Gravitational Constant (G)- Definition, Unit and Dimension.
	2nd	Acceleration due to gravity (g)- Definition and Concept.
	3rd	Definition of mass and weight. Relation between g and G.
	4th	Variation of g with altitude and depth (No derivation – Only Explanation). Kepler's Laws of Planetary Motion (Statement only).
7th	1st	Simple Harmonic Motion (SHM) - Definition & Examples.
	2nd	Expression (Formula/Equation) for displacement, velocity, acceleration of a body/ particle in SHM.
	3rd	Wave motion – Definition & Concept. Transverse and Longitudinal wave motion – Definition, Examples & Comparison.
	4th	Definition of different wave parameters (Amplitude, Wavelength, Frequency, Time Period.
8th	1st	Derivation of Relation between Velocity, Frequency and Wavelength of a wave.
	2nd	Ultrasonics – Definition, Properties & Applications.
	3rd	Heat and Temperature – Definition & Difference
	4th	Units of Heat (FPS, CGS, MKS & SI).
9th	1st	Specific Heat (concept, definition, unit, dimension and simple numerical)
	2nd	Change of state (concept), Latent Heat (concept, definition, unit, dimension and simple numerical)
	3rd	Thermal Expansion – Definition & Concept, Expansion of Solids (Concept)
	4th	Coefficient of linear, superficial and cubical expansions of Solids – Definition & Units. Relation between α, β & ϒ

10th	**1st**	**Work and Heat - Concept & Relation. Joule's Mechanical Equivalent of Heat (Definition, Unit),First Law of Thermodynamics (Statement and concept only)**
	2nd	**Reflection & Refraction – Definition. Laws of reflection and refraction (Statement only)**
	3rd	**Refractive index – Definition, Formula &Simple numerical.**
	4th	**Critical Angle and Total internal reflection – Concept, Definition & Explanation,**
11th	**1st**	**Refraction through Prism (Ray Diagram & Formula only – NO derivation)..**
	2nd	**Fiber Optics – Definition, Properties & Applications.**
	3rd	**Electrostatics – Definition & Concept.**
	4th	**Statement & Explanation of Coulombs laws, Definition of Unit charge. Absolute & Relative Permittivity (ε) – Definition, Relation & Unit.**
12th	**1st**	**Electric potential and Electric Potential difference (Definition, Formula & SI Units).**
	2nd	**Electric field, Electric field intensity (E) – Definition, Formula & Unit.**
	3rd	**Capacitance - Definition, Formula & Unit. Series and Parallel combination of Capacitors (No derivation, Formula for effective/Combined/total capacitance & Simple numericals).**
	4th	**Magnet, Properties of a magnet. Coulomb's Laws in Magnetism – Statement & Explanation, Unit Pole(Definition).**
13th	**1st**	**Magnetic field, Magnetic Field intensity (H) - (Definition, Formula & SI Unit).**
	2nd	**Magnetic lines of force (Definition and Properties),Magnetic Flux (Φ) & Magnetic Flux Density (B) – Definition, Formula & Unit.**
	3rd	**Electric Current – Definition, Formula & SI Units.**
	4th	**Ohm's law and its applications.**
14th	**1st**	**Series and Parallel combination of resistors (No derivation, Formula for effective/ Combined/ total resistance & Simple numericals).**
	2nd	**Kirchhoff's laws (Statement & Explanation with diagram).**
	3rd	**Application of Kirchhoff's laws to Wheatstone bridge - Balanced condition of Wheatstone's Bridge – Condition of Balance (Equation).**
	4th	**Electromagnetism – Definition & Concept.**

15th	1st	Force acting on a current carrying conductor placed in a uniform magnetic field, Fleming's Left Hand Rule
	2nd	Faraday's Laws of Electromagnetic Induction (Statement only)
	3rd	Lenz's Law (Statement)
	4th	Fleming's Right Hand Rule, Comparison between Fleming's Right Hand Rule and Fleming's Left Hand Rule.
16th	1st	LASER & laser beam (Concept and Definition)
	2nd	Principle of LASER (Population Inversion & Optical Pumping)
	3rd	Properties & Applications of LASER
	4th	Wireless Transmission – Ground Waves, Sky Waves, Space Waves (Concept & Definition)