Discipline:- Math & Science	Semester:- 1st & 2nd Semester	Name of the Teaching Faculty: Miss Pooja Sahu , Lect. in Physics
Subject:- Engineering Physics	No. of Days/week Class Alloted:60	
Week	**Class Day**	**Theory Topics**
1st	1st	Physical quantities, Definition of fundamental and derived units, Systems of units (MKS, CGS, FPS & SI units).
	2nd	Definition of Dimension & Dimensional formula of physical quantities
	3rd	Dimensional equations and Principle of homogeneity, Checking the Dimensional correctness of Physical relations.
	4th	Scalar & Vector quantities(Definition & concept),Representation of a Vector-examples, Types of vectors.
2nd	1st	Triangle & Parallelogram law of vector Addition(Statement only), Simple numerical, Resolution of vectors-Simple numericals.
	2nd	Vector multiplication (scalar product and vector product of vectors).
	3rd	Concept of Rest & Motion, Displacement, Speed, Velocity, Acceleration & Force (Definition, formula, dimension & SI units).
	4th	Equations of motion under gravity (upward and downward motion).
3rd	1st	Circular motion : Angular displacement, Angular velocity and Angular acceleration (definition , formula & SI units).
	2nd	Relation between – (i) Linear & Angular velocity , (ii) Linear & Angular acceleration.
	3rd	Define Projectile, Examples of Projectile.
	4th	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.
4th	1st	Work- Definition, Formula & SI units, Friction- Definition & concept.
	2nd	Types of Friction (Static, Dynamic), Limiting friction (Definition with Concept).
	3rd	Laws of Limiting friction (Only statement, No experimental Verification).
	4th	Coefficient of Friction – Definition & Formula, Simple Numericals.
5th	1st	Methods to reduce friction.
	2nd	Newton's law of Gravitation – Statement and Explanation.
	3rd	Universal gravitational constant (G)- Definition, unit & dimension. Acceleration due to gravity (g)- Definition & Concept.
	4th	Definition of mass and weight. , Relation between g and G.

6th	1st	Variation of g with altitude and depth (No derivation- only Explanation).
	2nd	Kepler's laws of Planetary motion.
	3rd	Simple Harmonic Motion (SHM) - Definition & Examples.
	4th	Expression for displacement , velocity, acceleration of a body or Particle in SHM.
7th	1st	Wave motion – Definition & Concept. , Transverse & Longitudinal Wave motion- Definition, examples & comparison.
	2nd	Definition of different Wave Parameters(Amplitude, Wavelength, Frequency, Time period.)
	3rd	Derivation of relation between Velocity, Frequency and Wavelength of a wave.
	4th	Ultrasonics - Definition, Properties & Applications.
8th	1st	Heat and Temperature – Definition & Difference. Units of Heat (FPS, CGS , MKS & SI).
	2nd	Specific Heat (concept, definition, unit, dimension and simple Numerical), Change of state(concept), Latent heat(concept, Definition, unit, dimension and simple numerical).
	3rd	Thermal Expansion – Definition & Concept.
	4th	Expansion of Solids(concept), Coefficient of linear, superficial and Cubical expansions of solids – definition & units.
9th	1st	Relation between α , β & γ .
	2nd	Work & Heat – Concept & Relation. Joule's Mechanical Equivalent of Heat. (Definition, Unit).
	3rd	First law of Thermodynamics (Statement & concept only)
	4th	Reflection & Refraction – Definition. Laws of reflection & refraction (Statement only).
10th	1st	Refractive index – Definition, Formula & Simple numerical.
	2nd	Critical angle & Total internal reflection – Concept, Definition & Explanation, Refraction through Prism (Ray diagram & Formula).
	3rd	Fiber Optics – Definition, Properties & Applications.
	4th	Electrostatics- Definition & Concept. , Statement & Explanation of Coulomb's la w, Definition of Unit Charge.
11th	1st	Absolute & Relative Permittivity – Definition, Relation & unit. Electric potential & Electric potential difference (Definition, formula & SI units), Electric field, Electric field Intensity (E)- Definition, Formula & unit.
	2nd	Capacitance – Definition, formula & unit , Series & Parallel combination Of Capacitors (Formula for total capacitance), Simple numerical.
	3rd	Magnet, Properties of a magnet.
	4th	Coulomb's law in Magnetism – Statement & Explanation, Unit Pole.
12th	1st	Magnetic field , Magnetic field intensity (H)- (Definition, formula & SI unit), Magnetic lines of force (Definition & properties).
	2nd	Magnetic Flux (Φ) & Magnetic flux Density (B) – Definition, formula & unit.
	3rd	Electric current – Definition, formula & SI units.
	4th	Ohm's law and its applications.

13th	1st	Series & Parallel combination of Resistors (Formula for total resistance and simple numericals).
	2nd	Kirchhoff's laws (Statement & Explanation with diagram).
	3rd	Application of Kirchhoff's laws to Wheatstone bridge.
	4th	Balanced condition of Wheatstone's bridge – Condition of Balance (Equation).
14th	1st	Electromagnetism – Definition & concept.
	2nd	Force acting on a current carrying conductor placed in a uniform Magnetic field, Fleming's Left hand rule.
	3rd	Faraday's laws of Electromagnetic Induction (Statement only), Lenz's Law (Statement).
	4th	Fleming's Right hand rule.
15th	1st	Comparison between Fleming's right hand rule and Fleming's left hand rule.
	2nd	LASER & laser beam (Concept & Definition), Principle of LASER (Population Inversion & Optical Pumping).
	3rd	Properties & Applications of LASER.
	4th	Wireless Transmission – Ground Waves, Sky waves, Space waves (Concept & Definition).
16th	1st	Revision of Chapter – 01 & 02
	2nd	Revision of Chapter- 03 & 04
	3rd	Revision of Chapter- 05 & 06
	4th	Revision of Chapter- 07 & 08
17th	1st	Revision of Chapter – 09 & 10
	2nd	Revision of Chapter – 11 & 12
	3rd	Discussion of Probable Questions & Answers (1)
	4th	Discussion of Probable Questions & Answers (2)
18th	1st	Discussion of Probable Questions & Answers (3)
	2nd	Discussion of Probable Questions & Answers (4)
	3rd	Discussion of Probable Questions & Answers (5)
	4th	Discussion of Probable Questions & Answers (6)