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| **Discipline:-**  **Math & Science** | **Semester:-**  **1st**  **Branch:-**  **Civil** |  | **Chapter** | **LESSON PLAN**  **Name of the Teaching Faculty:**  **Rosan Kumar Pardia, Lect. In Physics**  **Session:2023-24(W)**  **Date:16.08.2023-11.12.2023** |
| **Subject:-**  **Engineering Physics** | **No. of Days/Week class allotted:60** |  |  |  |
| **Week** | **Class Day** | **Date** |  | **Theory Topics** |
| 1st | 1 | 16.08.2023 | 1 | Physical quantities, Definition of fundamental and derived units, Systems of units (MKS, CGS, FPS & SI units). |
|  | 2 | 17.08.2023 |  | Definition of Dimension & Dimensional formula of physical quantities. |
|  | 3 | 18.08.2023 |  | Dimensional equations and Principle of homogeneity, Checking the Dimensional correctness of Physical relations. |
|  | 4 | 19.08.2023 | 2 | Scalar & Vector quantities (Definition & concept), Representation of a Vector-examples, Types of vectors. |
| 2nd | 1 | 23.08.2023 |  | Triangle & Parallelogram law of vector Addition (Statement only), Simple numerical, Resolution of vectors-Simple numerical. |
|  | 2 | 24.08.2023 |  | Vector multiplication (scalar product and vector product of vectors). |
|  | 3 | 25.08.2023 | 3 | Concept of Rest & Motion, Displacement, Speed, Velocity, Acceleration & Force (Definition, formula, dimension & SI units). |
|  | 4 | 26.08.2023 |  | Equations of motion under gravity (upward and downward motion). |
| 3rd | 1 | 31.08.2023 |  | Circular motion: Angular displacement, Angular velocity and Angular acceleration (definition, formula & SI units). |
|  | 2 | 01.09.2023 |  | Relation between – (i) Linear & Angular velocity, (ii) Linear & Angular acceleration. |
|  | 3 | 02.09.2023 |  | Define Projectile, Examples of Projectile. |
|  | 4 | 07.09.2023 |  | 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 | 1 | 08.09.2023 | 4 | Work- Definition, Formula & SI units, Friction- Definition & concept. |
|  | 2 | 09.09.2023 |  | Types of Friction (Static, Dynamic), Limiting friction (Definition with Concept). |
|  | 3 | 13.09.2023 |  | Laws of Limiting Friction (Only statement, No Experimental Verification). |
|  | 4 | 14.09.2023 |  | Coefficient of Friction – Definition & Formula, Simple Numerical. |
| 5th | 1 | 15.09.2023 |  | Methods to reduce friction. |
|  | 2 | 16.09.2023 | 5 | Newton’s law of Gravitation – Statement and Explanation. |
|  | 3 | 21.09.2023 |  | Universal gravitational constant (G)- Definition, unit & dimension. Acceleration due to gravity (g)- Definition & Concept. |
|  | 4 | 22.09.2023 |  | Definition of mass and weight., Relation between g and G. |
| 6th | 1 | 23.09.2023 |  | Variation of g with altitude and depth (No Derivation-Only Explanation). |
|  | 2 | 27.09.2023 |  | Kepler’s laws of Planetary motion. |
|  | 3 | 28.09.2023 | 6 | Simple Harmonic Motion (SHM) - Definition & Examples. |
|  | 4 | 30.09.2023 |  | Expression for displacement, velocity, acceleration of a body or Particle in SHM. |
| 7th | 1 | 04.10.2023 |  | Wave motion – Definition & Concept., Transverse & Longitudinal Wave motion- Definition, examples & comparison. |
|  | 2 | 05.10.2023 |  | Definition of different Wave Parameters (Amplitude, Wavelength, Frequency, Time period.) |
|  | 3 | 06.10.2023 |  | Derivation of relation between Velocity, Frequency and Wavelength of a wave. |
|  | 4 | 07.10.2023 |  | Ultrasonics - Definition, Properties & Applications. |
| 8th | 1 | 11.10.2023 | 7 | Heat and Temperature – Definition & Difference. Units of Heat (FPS, CGS, MKS & SI). |
|  | 2 | 12.10.2023 |  | Specific Heat (concept, definition, unit, dimension and simple Numerical), Change of state(concept), Latent heat (concept, Definition, unit, dimension and simple numerical). |
|  | 3 | 13.10.2023 |  | Thermal Expansion – Definition & Concept. |
|  | 4 | 14.10.2023 |  | Expansion of Solids(concept), Coefficient of linear, superficial and Cubical expansions of solids – definition & units. |
| 9th | 1 | 18.10.2023 |  | Relation between α, β & γ. |
|  | 2 | 19.10.2023 |  | Work & Heat – Concept & Relation. Joule’s Mechanical Equivalent of Heat. (Definition, Unit). |
|  | 3 | 20.10.2023 |  | First law of Thermodynamics (Statement & concept only). |
|  | 4 | 25.10.2023 | 8 | Reflection & Refraction – Definition. Laws of reflection & refraction (Statement only). |
| 10th | 1 | 26.10.2023 |  | Refractive index – Definition, Formula & Simple numerical. |
|  | 2 | 27.10.2023 |  | Critical angle & Total internal reflection – Concept, Definition & Explanation, Refraction through Prism (Ray diagram & Formula). |
|  | 3 | 28.10.2023 |  | Fiber Optics – Definition, Properties & Applications. |
|  | 4 | 01.11.2023 | 9 | Electrostatics- Definition & Concept., Statement & Explanation of Coulomb’s law, Definition of Unit Charge. |
| 11th | 1 | 02.11.2023 |  | Absolute & Relative Permittivity – Definition, Relation & unit. Electric potential & Electric potential difference (Definition, formula & SI units), Electric field, Electric field Intensity (E)- Definition, Formula & unit. |
|  | 2 | 03.11.2023 |  | Capacitance – Definition, formula & unit, Series & Parallel combination Of Capacitors (Formula for total capacitance), Simple numerical. |
|  | 3 | 04.11.2023 |  | Magnet, Properties of a magnet. |
|  | 4 | 08.11.2023 |  | Coulomb’s law in Magnetism – Statement & Explanation, Unit Pole. |
| 12th | 1 | 09.11.2023 |  | Magnetic field, Magnetic field intensity (H)- (Definition, formula & SI unit), Magnetic lines of force (Definition & properties). |
|  | 2 | 10.11.2023 |  | Magnetic Flux (Ф) & Magnetic flux Density (B) – Definition, formula & unit. |
|  | 3 | 11.11.2023 | 10 | Electric current – Definition, formula & SI units. |
|  | 4 | 15.11.2023 |  | Ohm’s law and its applications. |
| 13th | 1 | 16.11.2023 |  | Series & Parallel combination of Resistors (Formula for total resistance and simple numerical). |
|  | 2 | 17.11.2023 |  | Kirchhoff’s laws (Statement & Explanation with diagram). |
|  | 3 | 18.11.2023 |  | Application of Kirchhoff’s laws to Wheatstone bridge. |
|  | 4 | 22.11.2023 |  | Balanced condition of Wheatstone’s bridge – Condition of Balance (Equation). |
| 14th | 1 | 23.11.2023 | 11 | Electromagnetism – Definition & Concept. |
|  | 2 | 24.11.2023 |  | Force acting on a current carrying conductor placed in a uniform Magnetic field, Fleming’s Left-hand rule. |
|  | 3 | 25.11.2023 |  | Faraday’s laws of Electromagnetic Induction (Statement only), Lenz’s Law (Statement). |
|  | 4 | 29.11.2023 |  | Fleming’s Right hand rule. |
| 15th | 1 | 30.11.2023 |  | Comparison between Fleming’s right hand rule and Fleming’s Left-Hand Rule. |
|  | 2 | 01.12.2023 | 12 | LASER & laser beam (Concept & Definition), Principle of LASER (Population Inversion & Optical Pumping). |
|  | 3 | 02.12.2023 |  | Properties & Applications of LASER. |
|  | 4 | 06.12.2023 |  | Wireless Transmission – Ground Waves, Sky waves, Space waves (Concept & Definition). |
| 16th | 1 | 07.12.2023 |  | Revision & Probable question discussion |
|  | 2 | 08.12.2023 |  | Revision & Probable question discussion |
|  | 3 | 09.12.2023 |  | Revision & Probable question discussion |

**Signature of the Faculty** **Signature of the HOD**

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| **Discipline:-**  **Math & Science** | **Semester:-**  **1st**  **Branch:-**  **Mechanical** |  | **Chapter** | **LESSON PLAN**  **Name of the Teaching Faculty:**  **Rosan Kumar Pardia, Lect. In Physics**  **Session:2023-24**  **Date:16.08.2023-11.12.2023** |
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| 15th | 1 | 04.12.2023 |  | Comparison between Fleming’s right hand rule and Fleming’s Left-Hand Rule. |
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|  | 4 | 08.12.2023 |  | Wireless Transmission – Ground Waves, Sky waves, Space waves (Concept & Definition). |
| 16th | 1 | 11.12.2023 |  | Revision & Probable question discussion |

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