

LESSON PLAN	
JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA	
Name of the Faculty: BABITA PADHI	Academic Year:
Course Code.: Th.2a.	Course Name: Engineering Physics
Program: Diploma first year	Branch: Civil, Mechanical & Electrical, ETC, IT
Year/Semester: Ist & IInd sem	Section: A,B,C & D,E,F

Sl. No.	Period	Time (min)	Unit	Topic to be Covered	Teaching Method
1.	1.	55	1	Physical quantities definition and concept, fundamental & derived units, systems of units.	Chalkboard
2.	2.	55		Definition of dimension and dimensional formulae of physical quantities, principle of homogeneity.	Chalkboard
3.	3.	55		Dimensional equations and Principle of homogeneity. Checking the dimensional correctness of Physical relations.	Chalkboard
4.	4.	55	2	Scalar and Vector quantities, Representation of vectors types of vectors.	Chalkboard
5.	5.	55		Triangle and Parallelogram law of vector Addition Resolution of Vectors.	Chalkboard
6.	6.	55		Simple Numerical on Horizontal and Vertical components, Scalar and vector product of vectors, properties.	Chalkboard
7.	7.	55	3	Concept of Rest and Motion, Displacement, Speed, Velocity, Acceleration.	Chalkboard
8.	8.	55		Force, numerical Equations of Motion under Gravity	Chalkboard
9.	9.	55		Angular displacement, Angular velocity and Angular acceleration. Relation between –Linear & Angular velocity, Linear & Angular acceleration.	Chalkboard
10	10.	55		Projectile, Equation of Trajectory, Time of Flight, Maximum Height.	Chalkboard
11	11.	55		Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range.	Chalkboard
12	12.	55	4	Work – Definition, Formula & SI units, Friction – Definition & Concept.	Chalkboard
13	13.	55		Types of friction- Static, dynamic, Limiting Friction.	Chalkboard
14	14.	55		Laws of Limiting Friction, Coefficient of Friction – Definition & Formula.	Chalkboard
15	15.	55		Simple Numerical, Methods to reduce friction.	Chalkboard
16	16.	55	5	Newton's Laws of Gravitation – Statement	Chalkboard
17	17.	55		Gravitational Constant (G)- Definition, Unit and Dimension. Acceleration due to gravity (g).	Chalkboard
18	18.	55		Class Test up to 4 <sup>th</sup> unit	Chalkboard
19	19.	55		Definition of mass and weight, Relation between g and G. Variation of g with altitude and depth.	Chalkboard
20	20.	55		Kepler's Laws of Planetary Motion.	Chalkboard
21	21.	55	6	Simple Harmonic Motion (SHM) - Definition & Examples.	Chalkboard

22	22.	55		Expression for displacement, velocity, acceleration of a body/ particle in SHM.	Chalkboard
23	23.	55		Wave motion – Definition & Concept. Transverse and Longitudinal wave motion – Definition, Examples & Comparison.	Chalkboard
24	24.	55		Definition of different wave parameters (Amplitude, Wavelength, Frequency, Time Period. Derivation of Relation between Velocity, Frequency and Wavelength of a wave.	Chalkboard
25	25.	55		Applications of Ultrasonic as assignment and revision of previous topic.	Chalkboard
26	26.	55	7	Heat and Temperature – Definition & Difference Units of Heat, Specific Heat (concept, definition, unit, dimension and simple numerical).	Chalkboard
27	27.	55		Thermal Expansion – Definition & Concept, Expansion of Solids.	Chalkboard
28	28.	55		Coefficient of linear, superficial and cubical expansions of Solids – Definition & Units, Relation between $\alpha$ , $\beta$ & $\gamma$	Chalkboard
29	29.	55		Change of state and latent heat and simple numerical.	Chalkboard
30	30.	55		Work and Heat - Concept & Relation, Joule's Mechanical Equivalent of Heat (Definition, Unit)	Chalkboard
31	31.	55		First Law of Thermodynamics.	Chalkboard
32	32.	55	8	Smart class regarding Optics.	Smart TV
33	33.	55		Reflection & Refraction – Definition, Laws of reflection and refraction, Refractive index – Definition, Formula & Simple numerical (Ray Diagram) & formula.	Chalkboard
34	34.	55		Critical Angle and Total internal reflection – Concept, Refraction through Prism.	Chalkboard
35	35.	55		Fibre Optics – Definition, Properties & Applications. Doubt clear.	Chalkboard
36	36.	55	9	Electrostatics – Definition & Concept, Statement & Explanation of Coulombs laws,	Chalkboard
37	37.	55		Definition of Unit charge, Absolute & Relative Permittivity ( $\epsilon$ ).	Chalkboard
38	38.	55		Electric potential and Electric Potential difference ,Electric field, Electric field intensity (E) , Capacitance concept.	Chalkboard
39	39.	55		Series and Parallel combination of Capacitors, Formula for effective capacitance & Simple numerical)	Chalkboard
40	40.	55		Magnet, Properties of a magnet. Coulomb's Laws in Magnetism – Statement & Explanation, Unit Pole.	Chalkboard
41	41.	55		Magnetic field, Magnetic Field intensity (H) - Magnetic lines of force ( Definition and Properties)Magnetic Flux ( $\Phi$ ) & Magnetic Flux Density (B) concept.	Chalkboard
42	42.	55	10	Electric Current – Definition, Formula & SI Units. Ohm's law, and its applications.	Chalkboard
43	43.	55		Concept of resistance,	Chalkboard

				Series and Parallel combination of resistors.	
44	44.	55		Kirchhoff's laws, and recalling of previous class concept.	Chalkboard
45	45.	55		Application of Kirchhoff's laws to Wheatstone bridge - Balanced condition of Wheatstone's Bridge – Condition of Balance.	Chalkboard
46	46.	55	11	Electromagnetism – Definition & Concept.	Chalkboard
47	47.	55		Force acting on a current carrying conductor placed in a uniform magnetic field.	Chalkboard
48	48.	55		Faraday's Laws of Electromagnetic Induction, Lenz's Law	Chalkboard
49	49.	55		Fleming's Left Hand Rule, Fleming's Right Hand Rule 11.6 Comparison between Fleming's Right Hand Rule and Fleming's Left Hand Rule.	Chalkboard
50	50.	55	12	LASER & laser beam (Concept and Definition), Principle of LASER (Population Inversion & Optical Pumping) Properties & Applications of LASER	Chalkboard
51	51.	55		Wireless Transmission – Ground Waves, Sky Waves, Space Waves ( Concept & Definition)	Chalkboard
52	52.	55		Doubt class and discussing previous year question paper.	Chalkboard
53	53.	55		Doubt class and discussing previous year question paper.	Chalkboard
54	54.			Revision of unit-1&2	Chalkboard
55	55.			Revision of unit-4&5	Chalkboard
56	56.			Revision of unit-6&7	Chalkboard
57	57.			Revision of unit-8&9	Chalkboard
58	58.			Revision of unit-10,11&12	Chalkboard
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