Lesson Plan

Name of the Faculty : Smt Sudesh Sharma/ Smt Neeru

Discipline : DAA

Year : 1st Year

Subject : APPLIED SCIENCE AND MATHEMATICS

Lesson Plan : 30 Weeks

Workload (Theory/Practical) per week (in hours): Theory-03

Week	Theory	
	Lecture Day	Topic(Including assignment/test)
1st	1st	**UNIT-1**
		Introduction to physics and mathematics.
	2nd	Units of measurement in S.I system and Problems based on S.I system.
	3rd	Dimensions and use of dimensional analysis and Problems related to dimensions.
2nd	4th	**UNIT-2(Force and motion)**
		Newton's laws.
	5th	Conservation of momentum.
	6th	Work and energy forms of energy and conservation of energy.
3rd	7th	Problems related to work and energy forms of energy and conservation of energy.
	8th	Problems related to Conservation of momentum.
		Discuss Stress and Strain.
	9th	Problems related to Stress and Strain.
4th	10th	Discuss elastic modulii.
	11th	Revise unit-2 (all topics in short).
	12th	**UNIT-8(Algebra)**

		Introduction to algebra and simple problems.
5th	13th	Logarithms, laws of logarithms (without proof).
	14th	Use of logarithms to solve problems of engineering nature.
	15th	Solution of three linear simultaneous equations by elimination.
6th	16th	Binomial Theorem (without proof) for positive integral index (expansion and general term).
	17th	Binomial theorem (without proof) for any index (expansion only).
	18th	Revise Binomial theorem and Logarithms.
7th	19th	**UNIT-3(Spring mass system)**
		Introduction to Spring mass system.
	20th	Vibration of bodies; amplitude, frequency.
	21th	Energy of vibrations; free and forced vibrations.
8th	22th	Discuss Resonance theory.
		Vibration of structural members.
	23th	Problems related to Vibration of bodies; amplitude, frequency.
	24th	Revise Energy of vibrations; free and forced vibrations.
9th	25th	Revise Resonance theory and Vibration of structural members.
	26th	**UNIT-9(Mensuration)**
		Mensuration of Plane figures: Definition: Units of Measurement.
	27th	Definition and formulae of perimeter and area etc. in connection with plane figures: rectangle, square, triangle.
10th	28th	Definition and formulae of perimeter and area etc. in connection with plane figures: quadrilateral rhombus, trapezium (trapezoid), polygon.
	29th	Definition and formulae of perimeter and area etc. in connection with plane figures:circle, irregular figures (trapezoidal Rule and Simpson's Rule) (simple problems).
	30th	Problems related to trapezoidal R u l e .

11th	31th	Problems related to Simpson's Rule.
	32th	Mensuration of Solids: Definition: Units: Volume: surface
	33th	Mensuration of Solids: including curved surface area and lateral surfaces areas of solids.
12th	34th	Rectangular or parallelopiped, Cubes, Cuboids
		Prisms, Cylinders and Hollow Cylinder, Pyramid.
	35th	Frustum of right circular cone, sphere (simple problems).
	36th	Problems related to Mensuration of Solids.
13th	37th	Revise Mensuration of Solids.
	38th	**UNIT-4(Expansion of solids)**
		Introduction to Thermal stresses.
	39th	Specific heat and heat capacity.
14th	40th	Concept of thermal time lag in buildings.
	41th	Laws of thermodynamics.
	42th	Principles of heat engines.
15th	43th	Principles of refrigeration
	44th	Principles of air conditioning systems.
	45th	Humidity and its control.
16th	46th	Revise all topics of unit-9.
	47th	**UNIT-10(Trigonometry)**
		Introduction to trigonometry.
	48th	Measurement of angles in degrees and radians and their conversions.
17th	49th	Trigonometric ratios and their relations.
	50th	Allied angles (without proof).
	51th	Trigonometric tables and their use.
18th	52th	Trigonometric ratios of angles between 0 degree and 360 degrees.

	53th	Sum difference formulae and their applications.
	54th	Ratio of multiple and sub-multiple angles (2A, 3A, A/2).
19th	55th	Product formulae.
	56th	Statements of cosine rule, sine rule.
	57th	Napier's analogy, solution of triangles (simple cases, excluding ambiguous case)
20th	58th	simple problems on heights and distances. **UNIT-5(Acoustics)**
		Introduction to Acoustic.
	59th	Acoustic of buildings.
	60th	Simple calculation of reverberation times.
21th	61th	Principles of acoustic modelling.
	62th	sources of sound.
	63th	Revise all topics of unit-5 shortly.
22th	64th	**UNIT-11(Differential Calculus)**
		Meaning and scope of differentiation.
	65th	Graphical differentiation concept of Limits.
	66th	Differentiation of x^n, sin x, cos x
23th	67th	Differentiation of tan x, $\log_a x$.
	68th	Differentiation of $\log_e x$, e^x.
	69th	Differentiation of sum, product and quotient of functions.
24th	70th	Differentiation of function of a function.
	71th	Problems related to Differentiation of function.
	72th	Revise problems related to Differentiation.
25th	73th	**UNIT-6**

		Light as waves, solar energy.
	74th	solar cells and green house effects.
	75th	Colour :primary colours, colour mixing.
26th	76th	Radiant light flux, illumination.
	77th	Discuss luminar intensity, light efficiencies.
	78th	Standards of illumination.
27th	79th	**UNIT-12(Integral Calculus)**
		Integration as inverse operation of differentiation.
	80th	Graphical integration.
	81th	Simple integration by substitution.
28th	82th	Integration by parts and by partial fractions.
	83th	Evaluation of definite integrals (simple problems).
	84th	Applications such as area.
29th	85th	**UNIT-7**
		Electrical nature of matter.
	86th	Molecular forces - cohesive and adhesive forces.
	87th	Application to water proofing and wetting.
30th	88th	Revise Electrical nature of matter.
	89th	Revise Molecular forces - cohesive and adhesive forces.
	90th	Revise Application to water proofing and wetting.