

Lesson Plan

Discipline: Mechanical, Semester: 4TH, Name of Faculty : SRITAM ROUT

Subject:

Thermal
Engineering-II

**No. of days/
week Class
allotted: 4**

Semester From Date: 10.03.2022 To date : 30.06.2022

Week	Class Day	Theory
1st	1st	Introduction to subject
	2nd	Performance of I.C engine Define mechanical efficiency
	3rd	Indicated thermal efficiency
	4th	Relative Efficiency, brake thermal efficiency overall efficiency
2nd	1st	Mean effective pressure & specific fuel consumption.
	2nd	Define air-fuel ratio & calorific value of fuel
	3rd	Work out problems to determine efficiencies & specific fuel consumption
	4th	Work out problems to determine efficiencies & specific fuel consumption
3rd	1st	Air Compressor Explain functions of compressor
	2nd	industrial use of compressor air
	3rd	Classify air compressor & principle of operation.
	4th	Describe the parts of reciprocating Air compressor
4th	1st	Working principle of reciprocating Air compressor
	2nd	Explain the terminology of reciprocating compressor
	3rd	bore, stroke, pressure ratio free air delivered & Volumetric efficiency.
	4th	Derive the work done of single stage with and without clearance.
5th	1st	Derive the work done of two stage compressor with and without clearance.
	2nd	Solve simple problems (without clearance only)
	3rd	Solve simple problems (without clearance only)
	4th	UNIT TEST
6th	1st	Properties of Steam Difference between gas & vapours.
	2nd	Formation of steam
	3rd	Formation of steam.
	4th	Representation on P-V, T-S diagram.
7th	1st	Representation on H-S, & T-H diagram.
	2nd	Definition & Properties of Steam.
	3rd	Use of steam table for finding unknown properties.

	4th	Use of mollier chart for finding unknown properties.
8th	1st	Non flow & flow process of vapour.
	2nd	P-V, T-S & H-S, diagram.
	3rd	Determine the changes in properties & solve simple numerical.
	4th	UNIT TEST
9th	1st	Steam Generator Classification & types of Boiler.
	2nd	Classification & types of Boiler.
	3rd	Important terms for Boiler.
	4th	Comparison between fire tube & Water tube Boiler.
10th	1st	Comparison between fire tube & Water tube Boiler.
	2nd	Description & working of Cochran, Lancashire Boiler
	3rd	Description & working of Babcock & Wilcox Boiler
	4th	Boiler Draught (Forced, induced & balanced)
11th	1st	Boiler Draught (Forced, induced & balanced)
	2nd	Boiler mountings & accessories.
	3rd	Boiler mountings & accessories.
	4th	Unit test
12th	1st	Steam Power Cycles Carnot cycle with vapour
	2nd	Rankine cycle, Representation in P-V, T-S & h-s diagram.
	3rd	Derive Work & Efficiency.
	4th	Effect of Various end conditions in Rankine cycle.
13th	1st	Reheat cycle & regenerative Cycle.
	2nd	Solve simple numerical on Carnot vapour
	3rd	Solve simple numerical on Rankine Cycle.
	4th	Unit test
14th	1st	Heat Transfer Modes of Heat Transfer (Conduction)
	2nd	Modes of Heat Transfer (Convection, Radiation)
	3rd	Fourier law of heat conduction
	4th	thermal conductivity (k).
15th	1st	Newton's laws of cooling.
	2nd	Radiation heat transfer (Stefan law)
	3rd	Radiation heat transfer (Boltzmann & Kirchhoff's law)
	4th	Black body Radiation, Definition of Emissivity
16th	1st	absorptivity, & transmissibility.
	2nd	Overall subject revision

	3rd	Previous year question answer discussion
	4th	Previous year question answer discussion

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