

Badriprasad Institute of Technology, Sambalpur

Lesson plan for Theory -4, Thermal Engineering-II

Semester & Branch: 4th Sem. Mechanical Engineering

Name of the Faculty: Mr. Pravin kumar Pathak

Total Periods- 60

No of periods /week- 4

Week	Day	Topic
1st	1st	Performance of I.C engine, Mechanical properties
	2nd	Indicated thermal efficiency
	3rd	Relative Efficiency
	4th	Brake thermal efficiency
2nd	5th	Overall efficiency
	6th	Mean effective pressure, specific fuel consumption
	7th	Air - fuel ratio, Calorific value of fuel.
	8th	Work out problems to determine efficiencies & specific fuel consumption...continue
3rd	9th	Air Compressor, its functions...continue
	10th	functions of compressor & industrial use of air compressor
	11th	Classification of air compressor
	12th	Principle of operation of air compressor
4th	13th	Parts of reciprocating Air compressor
	14th	Working principle of reciprocating Air compressor
	15th	Terminology of reciprocating compressor
	16th	Bore, Stroke, Pressure ratio free air delivered & Volumetric efficiency
5th	17th	Derivation of the work done of single stage compressor without clearance.
	18th	Derivation of the work done of two stage compressor with and without clearance.
	19th	Simple problems (without clearance only)
	20th	Revision
6th	21st	Definition & Properties of Steam
	22nd	Difference between gas & vapours.
	23rd	Formation of steam.
	24th	Representation on P-V and T-S diagram
7th	25th	Representation on H-S & T-H diagram
	26th	Use of steam table & mollier chart for finding unknown properties...continue
	27th	Use of steam table & mollier chart for finding unknown properties and numerical
	28th	Non flow & flow process of vapour...continue
8th	29th	Non flow & flow process of vapour.
	30th	Determination of the changes in properties
	31st	Numerical questions-answers
	32nd	revision
9th	33rd	Steam Generator- Boiler
	34th	Important terms for Boiler
	35th	Classification & types of Boiler.
	36th	Fire tube & Water tube Boiler.
10th	37th	Comparison between Fire tube & Water tube Boiler.

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	38th	Description & working of common boiler: Cochran boiler
	39th	Description & working of common boiler: Lancashire boiler
	40th	Description & working of common boiler: Babcock & Wilcox Boiler
11th	41st	Boiler Draught (Forced, induced & balanced)
	42nd	Boiler mountings & accessories...continue
	43rd	Boiler mountings & accessories
	44th	Class test
12th	45th	Steam Power Cycles, Carnot cycle with vapour
	46th	work & efficiency of the cycle.
	47th	Rankine cycle, Representation in P-V, T-S & h-s diagram.
	48th	Work & Efficiency of Rankine cycle.
13th	49th	Effect of Various end conditions in Rankine cycle.
	50th	Reheat cycle & regenerative Cycle.
	51st	simple numerical on Carnot vapour Cycle
	52nd	simple numerical on Rankine Cycle.
14th	53rd	Heat and Heat Transfer
	54th	Modes of Heat Transfer (Conduction, Convection, Radiation).
	55th	Fourier law of heat conduction and thermal conductivity (k)
	56th	Newton's laws of cooling
15th	57th	Radiation heat transfer Stefan, Boltzmann & Kirchhoff's law
	58th	Black body Radiation
	59th	Definition of Emissivity, absorptivity, & transmissibility
	60th	Revision and doubt class

Sign of Faculty

Sign of HOD