
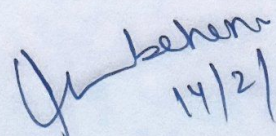
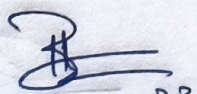


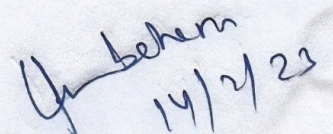
Discipline: <u>MECHANICAL</u>	Semester: <u>4th</u>	Name of the Teaching Faculty: <u>ER. LITU BEHERA</u> <u>Lecturer Mechanical</u>
Subject: THERMAL ENGINEERING- II	No. of days/per week class allotted: 4	Semester From date: 14/02/2023 To date: No of weeks: 15
Week	Class Day	Theory Topics:
1st	1st	1. Performance of I.C engine 1.1 Define mechanical efficiency, Indicated thermal efficiency
	2nd	Relative Efficiency, brake thermal efficiency overall efficiency
	3rd	Mean effective pressure & specific fuel consumption.
	4th	1.2 Define air-fuel ratio & calorific value of fuel.
2nd	1st	1.3 Work out problems to determine efficiencies & specific fuel consumption.
	2nd	Revision of Chapter-1
	3rd	Previous year question solutions
	4th	Air Compressor
3rd	1st	2.1 Explain functions of compressor & industrial use of compressor air
	2nd	2.2 Classify air compressor & principle of operation.
	3rd	2.3 Describe the parts and working principle of reciprocating Air compressor.
	4th	2.4 Explain the terminology of reciprocating compressor such as bore, stroke,
4th	1st	Pressure ratio free air delivered & volumetric efficiency.
	2nd	2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered & volumetric efficiency.
	3rd	2.5 Derive the work done of single stage & two stage compressor with and without clearance.
	4th	2.6 Solve simple problems (without clearance only)
5th	1st	Revision of Chapter-2
	2nd	Previous year question solutions
	3rd	Properties of Steam
	4th	3.1 Difference between gas & vapours.


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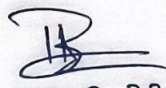

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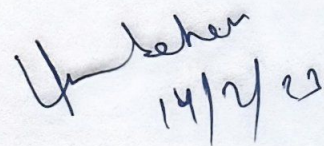
6 th	1 st	3.2 Formation of steam.
	2 nd	3.3 Representation on P-V, T-S, H-S, & T-H diagram.
	3 rd	3.4 Definition & Properties of Steam.
	4 th	3.5 Use of steam table & mollier chart for finding unknown properties.
7 th	1 st	3.6 Non flow & flow process of vapour.
	2 nd	3.7 P-V, T-S & H-S, diagram.
	3 rd	3.8 Determine the changes in properties
	4 th	solve simple numerical.
8 th	1 st	Revision of Chapter-3
	2 nd	Previous year question solutions
	3 rd	Steam Generator
	4 th	4.1 Classification & types of Boiler.
9 th	1 st	4.2 Important terms for Boiler.
	2 nd	4.3 Comparison between fire tube & Water tube Boiler.
	3 rd	4.4 Description & working of common boilers (Cochran, Lancashire)
	4 th	4.4 Description & working of common boilers (Babcock & Wilcox Boiler)
10 th	1 st	4.5 Boiler Draught (Forced, induced & balanced)
	2 nd	4.6 Boiler mountings & accessories
	3 rd	Revision of Chapter-4
	4 th	Previous year question solutions


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11 th	1 st	Steam Power Cycles 5.1 Carnot cycle with vapour.
	2 nd	5.2 Derive work & efficiency of the cycle.
	3 rd	5.3 Rankine cycle.
	4 th	5.3.1 Representation in P-V, T-S & h-s diagram.
12 th	1 st	5.3.2 Derive Work & Efficiency.
	2 nd	5.3.3 Effect of Various end conditions in Rankine cycle.
	3 rd	5.3.4 Reheat cycle & regenerative Cycle.
	4 th	5.4 Solve simple numerical on Carnot vapour Cycle.
13 th	1 st	5.4 Solve simple numerical on Rankine Cycle.
	2 nd	Revision of Chapter-5
	3 rd	Previous year question solutions
	4 th	6.1 Modes of Heat Transfer Conduction
14 th	1 st	6.1 Modes of Heat Transfer Convection
	2 nd	6.1 Modes of Heat Transfer Radiation
	3 rd	6.2 Fourier law of heat conduction and thermal conductivity (k).
	4 th	6.3 Newton's laws of cooling.
15 th	1 st	6.4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem.
	2 nd	6.5 Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.
	3 rd	Revision of Chapter-6
	4 th	Previous year question solutions


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