



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution)

(Accredited by NAAC & NBA, Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziznagar Gate, C.B. Post, Hyderabad – 500 075

DEPARTMENT OF MECHANICAL ENGINEERING

III B.Tech I Semester

THERMAL ENGINEERING LAB (A15386)

OUTCOMES: Upon the completion of the lab, the students should be able to

1	Investigate IC engines with varied parameters to evaluate the performance.
2	Evaluate engine friction and heat balance of 4-stroke SI and CI engines.
3	Determine A/F ratio, Volumetric Efficiency, Economical Speed and optimum cooling water temperature for IC engines.
4	Acquire hands on experience on the assembly & disassembly of various IC engine parts
5	Test performance of Reciprocating Air-compressor and understand the working of different types of boilers.



LIST OF EXPERIMENTS

S.NO	NAME OF THE EXPERIMENT
1	IC ENGINE VALVE /PORT TIMMING DIAGRAM
2	IC ENGINE PERFORMANCE TEST ON 4S SI ENGINE
3	IC ENGINE PERFORMANCE TEST ON 2S SI ENGINE
4	Evaluate of engine friction by conducting Morse test on 4S multi cylinder petrol engine
5	Evaluate of engine friction by conducting motoring /retardation test on 4S diesel engine



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6	HEAT Balance on I.C engines
7	Determination of A/F Ratio and volumetric efficiency on I C engine
8	Determination of economical speed test for fixed load on 4 s engine
9	Determine optimum cooling water temperature on I C engine
10	Disassembly / assembly of engines
11	Performance test on reciprocating air- compressor unit
12	Study of Boilers

LIST OF EQUIPMENTS

S.NO	NAME OF THE EQUIPMENT
1	Port timing diagram
2	Valve timing diagram
3	4S – 1 cylinder Diesel engine test rig (mechanical loading)
4	4S – 1 cylinder Petrol engine test rig (electrical loading)
5	4S – Multi cylinder Petrol engine test rig (Hydraulic loading)
6	VCR Petrol engine test rig (electrical loading)
7	2S – 1 cylinder Petrol engine test rig (electrical loading)
8	BABCOCK AND WILCOX boiler model
9	LANCASHIRE boiler model
10	2 stage reciprocating air compressor test rig
11	Disassembly and assembly of MARUTHI 800 engine