

B. Tech 8th Semester Mechanical Engineering**Subject: I C Engines Lab****Topic - Report Writing For The Subject Of I C Engines Laboratory – 28-04-2020**

Prepare the lab report to be submitted for the evaluation of the subject of I C Engines Laboratory with the following Study based write ups:

1. Draw and label the below mentioned three models and explain the working of each model:
 - a. Study of 4 stroke cycle spark ignition engine model
 - b. Study of 4 stroke cycle compression ignition engine model
 - c. Study of 2 stroke cycle spark ignition engine model.
2. Draw and label the single cylinder diesel engine in cut section and explain its working.
3. Draw and label the following components of internal combustion engines.
Cylinder block, Cylinder Head, Crank Case, Piston, Piston Rings, Connecting Rod, Big end bearing of the connecting rod, Small end bearing of the connecting rod, Crank shaft, Main bearings of the crank shaft, Fuel injection system for the C.I engine, Fuel supply system for C.I engine, Air supply system for the C.I. engine.
4. Description and working principle of the Instrumentation used for the following measurements needed for engine testing on a test rig.
 - a. Measurement of air consumption.
 - b. Measurement of fuel consumption.
 - c. Measurement of engine torque.
 - d. Measurement of engine speed.
 - e. Measurement of engine power.
 - f. Computerized data acquisition system based recording of the in-cylinder pressure versus crank angle and in-cylinder pressure versus cylinder volume data and graphs for the engine.
[P- θ and P-V diagrams] – [Hint – Piezo-electric pressure transducer and Crank Angle Encoder]
5. Description and working principle of the 5 Gas Exhaust Gas Analyzer based Instrumentation used for measurement of the following emissions from the internal combustion engines on test rigs.
 - a. Measurement of CO emissions in the exhaust gas of the engine.
 - b. Measurement of CO₂ emissions in the exhaust gas of the engine.
 - c. Measurement of HC emissions in the exhaust gas of the engine.
 - d. Measurement of NO_x emissions in the exhaust gas of the engine.
 - e. Measurement of excess O₂ in the exhaust gas of the engine.

Dated: 28-04-2020

Prof M Marouf Wani

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