1. Attempt all question each question carry equal marks.

(5X4 = 20)

A. Define compression ratio. What is its range for (a) the SI engine (b) the CI engine.

B. Name the process of heat addition in otto cycle. Draw it on P-V diagram.

C. Describe the phenomenon of detonation or knocking in SI engines.

D. What are the various performance parameters of Internal combustion engine?

SECTION-A

2(a) What are the differences between Two Stroke engine and Four Stroke Engine. (10)

(b) What is the difference between air standard cycle and fuel air cycle? (10)

3(a) If the Indicated power, Brake Power of an spark ignition engine are 12 and 9 Horse Power respectively then calculate the Friction Power and mechanical efficiency. (15)

(b) How can the efficiency of an engine is increased? (5)

4(a) What is the reason of knocking in CI engines? Explain in detail. (10)

(b) Explain the stages of combustion in SI engine with the help of diagram. (10)

SECTION-B

5(a) What do you mean by Heat Balance? Explain with example. (10)

(b) What is requirement of Testing in an IC engine? What are the basic measurements done for testing. (10)

6(a) Describe with a neat sketch the construction and working of a single stage single acting reciprocating air compressor. (10)

(b) Derive the equation for work done on a single stage compressor if clearance in compressor is assume to be zero. (10)

7(a) Draw Brayton cycle on T-s diagram and mention the processes in the diagram. (10)

(b) What is the difference between Open Cycle Gas Turbine and Closed Cycle Gas Turbine with neat diagram? (10)