

Roll No _____

Examination May-2014

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AE-202

Internal Combustion Engines

Paper ID- A0780

Time allowed : 3 Hrs.

Max. Marks: 60

Note: Section A is compulsory, attempt any 4 questions from section B & Attempt any 2 questions from section C.

Section A

2X10=20

1. I. What is an air standard efficiency?
- II. What is scavenging?
- III. What are the functions of piston rings?
- IV. What is performance number?
- V. What is carburettor?
- VI. What is the difference between 'direct injection' and 'indirect injection'?
- VII. How is 'engine friction' defined?
- VIII. What are additives?
- IX. Why is cooling necessary for I.C. Engines?
- X. What is meant by ignition delay?

Section B

5X4=20

2. Discuss the difference between ideal and actual valve timing diagrams of a diesel engine?
3. A diesel engine has compression ratio of 15 and heat addition at constant pressure takes place at 6% of stroke. Find the air standard efficiency of the engine. Take γ for air as 1.4.
4. Explain the difference between pre-ignition, auto-ignition and detonation.
5. Explain with a neat sketch 'thermostat cooling' method of cooling I.C. Engines.
6. Explain briefly supercharging of C.I. engines.

Section C

10X2=20

7. I. Compare the relative advantages and disadvantages of four stroke and two stroke cycle engines. 5
- II. With the help of neat sketch describe the construction and working of a solex carburettor. 5
8. Explain the combustion phenomenon of C.I. Engines and describe various phases of C.I. Engine combustion.
9. Explain briefly the following:
 - I. Direct frictional losses
 - II. Valve throttling losses
 - III. Combustion chamber pump loss
 - IV. Blowby losses