

Total No. of Questions :8]

[Total No. of Printed Pages :2

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Roll No

ME-604**B.E. VI Semester**

Examination, June 2017

Internal Combustion Engines**Time : Three Hours****Maximum Marks : 70**

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.

1. A single cylinder, 4 stroke oil engine having a displacement volume of 730cc in tested at 400 rpm. When subjected to a braking torque of 55 N-m, the mean effective pressure from the indicator diagram is found to be 990 kPa. Determine the
 - i) Indicated power
 - ii) Brake power
 - iii) Mechanical efficiency of the engine and
 - iv) Power lost in friction.
2. What is the effect of percentage change in the efficiency of otto cycle having a compression ratio of 9, if the specific heat at constant volume increases by 1%.
3. What is detonation? What are its effect? Which factors promote detonation and how can it be minimized or a avoided.
4. Describe various types of combustion chambers employed in different S.I. engines. Discuss their salient features also.

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[2]

5. Sketch and explain the construction and working of divided type combustion chambers. Discuss their advantages and disadvantages.

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6. Several provisions to avoid knocking in C.I. engines create more knock in S.I. engines. Comment with illustration.
7. Describe a battery ignition system with the help of a neat sketch.
8. Answer any four of the following:
 - a) What are the differences between air standard cycles and fuel air cycles?
 - b) How does a flame front propagate? Discuss the factors that effect the flame speed?
 - c) Explain the stages of combustion in a C.I. engine.
 - d) Sketch and explain the fuel consumption loop in S.I. engine.
 - e) What are the supercharging limits for S.I. engine and C.I. engine?
 - f) Explain the thermodynamic cycle of a super charged I.C. engine.

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