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Roll No

MMTP - 105

M.E./M.Tech. I Semester

Examination, December 2014

Internal Combustion Engines & Alternate Fuels

Time : Three Hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. a) What are the main constituents of petroleum. Discuss in brief
b) Distinguish between octane number and cetane number
2. a) What is carburetion? Explain the factors which affect the process of carburetion.
b) Discuss the need of MPFI system.
3. Discuss the effect of following variables on engine knock
 - i) Compression ratio
 - ii) Mass of the induced charge
 - iii) Spark timing
 - iv) Power output
 - v) Coolant temperature.
4. a) Explain the importance of engine testing.
b) Explain the working principle of rope brake dynamometer. Discuss its merit and demerits.

5. What are the major pollutants from the exhaust of gasoline and diesel engine. Discuss the detrimental effects of these pollutants.
6. a) What are the advantages and disadvantages of stratified charge engines.
b) Explain the working of a Wankel Engine.
7. a) Discuss the necessity of alternative fuels for I.C engine.
b) Discuss the advantages and disadvantages of CNG.
8. Write short notes on any TWO
 - i) Supercharging of I.C engine
 - ii) Performance maps and its importance
 - iii) Dual fuel engine
 - iv) Ethanol as an alternative fuel.

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