

22603

M. Tech. Ist Semester (M.E.) (CBCS Scheme)
Examination, November-2023

IC ENGINE COMBUSTION AND POLLUTION

Paper-MTME21C3

Time allowed : 3 hours]

[Maximum marks : 100

Note: Question No. 1 is compulsory. Attempt total five questions selecting one question from each section. All questions carry equal marks.

1. (a) Explain Laws of Thermodynamics. 5
- (b) Air Pollution due to Engine emission. 5
- (c) Explain Flame stabilization. 5
- (d) Explain Detonation Velocity. 5

Unit-I

2. (a) What are the different properties of S.I and C.I Engine fuel? 10
- (b) What are the different types of hydrocarbon in petroleum fuel? 10
3. Explain fuel and air cycle analysis and also the thermodynamics of Combustion. 20

Unit-II

4. Explain the following:
 - (a) Laminar Premixed Flame 10
 - (b) Turbulent Flame propagation 10

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5. What is combustion? Explain Different combustion modes and types of flame. 20

Unit-III

6. What is detonation? Explain Principle, characteristics, structure of detonation waves. 20
7. Explain effect of pollutant emissions from premixed combustion and from non-premixed combustion. 20

Unit-IV

8. Explain the following: 20
- (a) Orset Apparatus
 - (b) Infrared Analyzer
9. (a) Explain the determination of Air Fuel Ratio. 10
- (b) Explain infrared Analyzer. 10