

Roll No.

24260

**B. Tech. 5th Semester (ME)
Examination – February, 2022**

**INTERNAL COMBUSTION ENGINES AND GAS
TURBINES**

Paper : ME-307-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting one question from each Section. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) List out any two demerits of hydrogen fuel. 5
- (b) How pollution is controlled in SI engine? 5
- (c) Define mean effective pressure. 5

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(d) Define octane number of a fuel and antiknock index. 5

SECTION - A

2. Distinguish between physical delay and chemical delay in CI engine combustion. What do you mean by Lean Burn Engines ? 20

3. Explain : 20

(i) Types of inject systems

(ii) Types of ignition systems

(iii) Spark plug

SECTION - B

4. What are the methods by which hydrogen can be used in SI engines ? Explain. Explain the working principle of stratified charge engines. 20

5. (a) Discuss briefly the phenomenon of knock in SI engines. 10

(b) What are the knock limited parameters in SI engines ? Explain. 10

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SECTION - C

6. Discuss in detail any two types of driving cycles used in emission measurement. 20

7. With diagrams, explain the various types of air motion created in CI engine combustion chambers. 20

SECTION - D

8. Explain : 20

(a) Rotary Compressors

(b) Centrifugal Compressors

(c) Axial flow Compressor

9. Describe in detail the idle system and altitude compensation in a modern carburetor. 20

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