

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI(OLD) – EXAMINATION – SUMMER 2019**

**Subject Code:161902**

**Date:16/05/2019**

**Subject Name: Internal Combustion Engines**

**Time:10:30 AM TO 01:00 PM**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define IC Engine. Give Comparison between external & internal combustion engine **07**  
(b) Explain Effect of variable specific heat on air standard cycles of diesel Cycle with P-V & T-S diagram. **07**
- Q.2** (a) Derive the equation for air standard efficiency of a Otto cycle. **07**  
(b) Define following terms. **07**  
1. Compression Ratio.  
2. Clearance volume  
3. Calorific value. (C.V.)
- OR**
- (b) Define adiabatic flame temperature & explain it with a neat sketch. **07**
- Q.3** (a) Explain construction & working of Boy's gas Calorimeter with neat sketch. **07**  
(b) Write Requirements of a good carburetor. Explain working of a simple carburetor. **07**
- OR**
- Q.3** (a) MPFI system for modern Automobile Engines- explains its types with a neat sketch. **07**  
(b) What are different types of fuel injection system? Explain CRDI system for diesel engine. **07**
- Q.4** (a) Explain Types of ignition system & advantages & disadvantages of Battery Coil ignition system. **07**  
(b) Define supercharging. Explain any one method of supercharging of IC engine with neat sketch. **07**
- OR**
- Q.4** (a) Define combustion. Explain combustion phenomena of SI engine with P- $\theta$  diagram. **07**  
(b) Write short note on effect of Engine variable on flame propagation. **07**
- Q.5** (a) Why governing system is required for IC engine? Explain Hit and Miss governing method for Gas Engine with neat sketch. **07**  
(b) What do you mean by turbocharging? Explain in detail the working of pulse turbocharging. (Buchi Type) **07**
- OR**
- Q.5** (a) Explain the Rope brake dynamometer method for measurement of brake power (B.P.) **07**  
(b) Write down steps for performance test of IC Engine in laboratory. **07**

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