

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2021

Subject Code:3150210

Date:17/09/2021

Subject Name:Automobile 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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Define (1) Volumetric efficiency (2) Stroke (3) Compression ratio **03**
 (b) State reason for early opening of exhaust valve and late closing of inlet valve in 4-stroke Engine. **04**
 (c) Why Diesel Engines are Called C.I engines? Differentiate between S.I & C.I. **07**
- Q.2** (a) What do you understand by the terms – Research Octane number and Motor Octane number? **03**
 (b) Explain any two compensating devices used in carburettor. **04**
 (c) Explain the working principle of a simple carburetor with a neat sketch. **07**
- OR**
- (c) With a line diagram explain the working of common rail fuel injection system. **07**
- Q.3** (a) Draw actual p-v diagram of four stroke petrol engine. **03**
 (b) Give comparison between wet sump and dry sump lubrication system. **04**
 (c) Explain construction and working of Fuel Injector with neat sketch. **07**
- OR**
- Q.3** (a) Explain the terms – Rich mixture and Lean mixture **03**
 (b) Classify the combustion chambers for C.I. engine **04**
 (c) Explain working of 4-stroke diesel engine using P-V diagram with neat sketch. **07**
- Q.4** (a) What do you mean by MPFI? Describe different types of MPFI in brief. **03**
 (b) What is Knocking? Compare the SI and CI engine knocking **04**
 (c) Describe working of Thermo-Syphon cooling system with neat sketch. **07**
- OR**
- Q.4** (a) Define scavenging. State different types of scavenging. **03**
 (b) Differentiate between Air cooling system and Water-cooling system **04**
 (c) Enlist different methods of Turbo-charging. Explain - Pulse turbo charging method. **07**
- Q.5** (a) What are the purposes of supercharging the I.C. Engine? **03**
 (b) Explain factors affecting flame propagation in S.I. Engine. **04**
 (c) Explain the stages of combustion with P- θ diagram in C.I. engines **07**
- OR**
- Q.5** (a) State important properties of SI engine fuels. **03**
 (b) Discuss Heat balance sheet for four stroke C.I. engine. **04**
 (c) Explain measurement of indicated power of multi cylinder engine by Morse test. **07**
