

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – WINTER 2013****Subject Code: 150201****Date: 02-12-2013****Subject Name: Automobile Engines****Time: 10.30 am - 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) Differentiate between LPG and CNG as fuel for I.C. engine. **07**
(b) Explain with neat sketch the working of stratified charge engine. State also the advantage and disadvantage for same. **07**
- Q.2** (a) Differentiate between 4- stroke C.I. engine and S.I. engine with respect to parameters like thermodynamic cycle, compression ratio, air fuel ratio, ignition system, operating speed, piston speed, governing, operating compression temperature and pressure, thermal efficiency, distribution of fuel, supercharging, weight to power ratio, noise and vibration, S.F.C., and applications **07**
(b) Explain Multi point fuel injection system. **07**
- OR**
- (b) Explain Common rail Diesel injection system. **07**
- Q.3** (a) Distinguish between air and water cooling of an IC engines. **07**
(b) State the type of lubrication system. Explain the working of pressure feed lubrication system with neat sketch. **07**
- OR**
- Q.3** (a) Differentiate between wet sump and dry sump lubrication system. **07**
(b) Explain the working of Orsat apparatus for exhaust gas analysis. **07**
- Q.4** (a) Explain with neat sketch the working of simple carburetor. State its limitations. **07**
(b) Differentiate between supercharging and turbo-charging of an IC engine. **07**
- OR**
- Q.4** (a) Define the following IC engine performance parameters: 1) Brake power 2) Air standard efficiency 3) Volumetric efficiency 4) Brake specific fuel consumption. **07**
(b) Explain the stages of combustion with P- θ diagram in C.I. engines. **07**
- Q.5** (a) Abnormal combustion knock produced by surface ignition in S.I. engines is more harmful than normal combustion knock.—justify the statement. **07**
Write in brief about additives for diesel engine fuels.
(b) Explain the effects of Pollutants on environment from gasoline engines and its control. **07**
- OR**
- Q.5** (a) Classify the combustion chambers of C.I. engines. Explain with neat sketch the working of “M” combustion chamber. **07**
(b) Explain the over-cooling and under-cooling of an I.C. engine with its merits and demerits. Explain the various properties of lubricants of an I.C. engines. **07**
