

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – WINTER 2013

Subject Code: 170205

Date: 03-12-2013

Subject Name: Alternative Fuels and Engines

Time: 10:30 TO 01:00

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) Explain sources of fossil fuel, scope of availability of fossil fuel in future. **06**
(b) Explain Green house effect **04**
(c) Write Emission norms as per Bharat Standard for BS-IV **04**
- Q.2** (a) Explain sources of Methanol and Ethanol, methods of its production. **07**
(b) Discuss Improvement in emission characteristics with respect to % blending of Alcohol. **07**
- OR**
- (b) Explain process of separation of Bio-diesel. **07**
- Q.3** (a) Explain layout of hydrogen car. **07**
(b) Write economics of application and advantages of liquid hydrogen as fuel for IC engine. **07**
- OR**
- Q.3** (a) Draw with neat sketch a layout for fuel cell vehicle and discuss about it. **07**
(b) Explain properties ,sources and method of production of Hydrogen. **07**
- Q.4** (a) Explain properties of LPG and CNG as engine fuels. **07**
(b) Discuss uses of Bio gas in IC engine. **07**
- OR**
- Q.4** (a) Explain layout of solar powered automobiles. **07**
(b) Discuss Eco friendly plastic fuels(EPF) **07**
- Q.5** (a) Explain advantages and limitation of electric vehicles. **07**
(b) Explain Sterling engine and free piston engine. **07**
- OR**
- Q.5** (a) Discuss Multi fuel engine. **07**
(b) Explain performance and emission characteristic of vegetable oil with addition to fuel. **07**
