

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014****Subject Code: 170205****Date: 31-05-2014****Subject Name: Alternative Fuels and Engines****Time: 02:30 pm - 05:00 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) Discuss Free piston Engine. **07**
(b) Explain advantages and limitation of electric vehicles. **07**
- Q.2** (a) Discuss uses of Bio diesel in IC engine. **07**
(b) Compare various parameters of three different Alternative fuel. **07**
- OR**
- (b) Explain layout of solar powered automobiles. **07**
- Q.3** (a) Enlist factors affecting biogas formation. **07**
(b) Write short note on Esterification. **07**
- OR**
- Q.3** (a) Compare LPG, CNG and gasoline fuel on cost and safety. **07**
(b) Discuss advantages and disadvantage of Liquid Hydrogen as fuel for IC engine. **07**
- Q.4** (a) Discuss about Carbon foot print and Carbon credit calculation. **07**
(b) Explain various properties of methanol and ethanol as engine fuel. **07**
- OR**
- Q.4** (a) With neat sketch discuss construction and working of electric vehicle. **07**
(b) Write short note on variable compression engine. **07**
- Q.5** (a) Is it possible to use Di- Methyl Ether (DME) as alternative fuel in I.C. engine? Explain in detail. **07**
(b) Explain effects of various constitutes of Exhaust gas emission on Environment and human health. **07**
- OR**
- Q.5** (a) Explain process of separation of Bio-diesel. **07**
(b) Discuss about Fuel cell vehicle with sketch. **07**
