

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VII Examination-Nov/Dec.-2011

Subject code: 170205

Date: 29/11/2011

Subject Name: Alternate Fuels & 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) Explain use of LPG as fuel for I.C. engines. **07**
(b) Explain the properties of C.N.G. as engine fuels. **07**
- Q.2** (a) Explain layout of hydrogen car. **07**
(b) Write merits and limitations of Hydrogen as an automotive fuel. **07**
- OR**
- (b) Explain layout of fuel cell vehicle. **07**
- Q.3** (a) Write short note on hybrid vehicles. **07**
(b) Explain with schematic arrangement working of solar powered vehicle. **07**
- OR**
- Q.3** (a) Explain advantages and limitations of solar powered vehicle. **07**
(b) Explain modifications are required for operating SI engine on biogas. **07**
- Q.4** (a) Discuss production and storage of hydrogen. **07**
(b) Discuss engine performance and exhaust emissions using CNG. **07**
- OR**
- Q.4** (a) Compare ethanol and methanol as substitute to gasoline. **07**
(b) Enlist various vegetable oils used as an engine fuel and write its required characteristics. **07**
- Q.5** (a) Explain Wankel engine with neat sketch. **07**
(b) Explain variable compression ratio engine with neat sketch. **07**
- OR**
- Q.5** (a) Explain free piston engine with neat sketch. **07**
(b) Discuss “scope of availability of fossil fuel in future”. **07**
