

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-II Examination July 2010

Subject code: 721102**Subject Name: Alternate Fuels And Energy****Date: 06 /07 /2010****Time: 11.00am – 1.30pm****Total Marks: 60****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 and CNG as fuel for I.C. Engine. **06**
 (b) Discuss use of hydrogen as fuel for I.C. Engine. **06**
- Q.2** (a) Discuss briefly availability and comparative properties of various alternate engine fuels. **06**
 (b) Explain use of biogas in automotive engines. **06**
- OR**
- (b) Discuss use of dual fuel systems in I.C. Engine. **06**
- Q.3** (a) Describe with a neat sketch working of electric vehicle. **06**
 (b) Explain with a neat sketch the hybrid vehicle. **06**
- OR**
- Q.3** (a) Explain advantages of alcohol fueled engines compared with gasoline engine. **06**
 (b) Explain use of alcohols and gasoline blends and modifications required in engine to use them. **06**
- Q.4** (a) Compare ethanol and methanol as substitute to gasoline. **06**
 (b) Explain with a neat sketch the working of solar powered vehicle. **06**
- OR**
- Q.4** (a) Enlist various vegetable oils used as a engine fuel and write its required characteristics. **06**
 (b) What modifications are required with the engine if LPG is used as substitute fuel ? **06**
- Q.5** (a) Explain modifications required for operating a S.I. Engine on biogas. **06**
 (b) Explain problems when methanol is used as engine fuel and its possible solution. **06**
- OR**
- Q.5** (a) Write advantages and disadvantages of CNG as an automobile fuel. **06**
 (b) Define LPG and LNG. What are the properties of LPG which are in its favor to use it as a substitute fuel for S.I. Engine. **06**
