

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E -IVth SEMESTER-EXAMINATION – MAY- 2012****Subject code: 742101****Date: 12/05/2012****Subject Name: Non Conventional Energy Conversion Systems****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) Explain design considerations for flat plate collectors. **07**
(b) Explain construction of photo voltaic cell. **07**
- Q.2** (a) Write short note on solar radiation measurement. **07**
(b) Give various applications of solar cells. **07**
- OR**
- (b) Explain solar constant, solar angle and solar time in brief. **07**
- Q.3** (a) Give classification of biogas plants and explain any one of them with neat sketch. **07**
(b) Explain various types of thermoelectric materials and their selection. **07**
- OR**
- Q.3** (a) Write short note on site selection for biogas plants. **07**
(b) Explain fuel properties of biogas. **07**
- Q.4** (a) Enlist hydrogen production methods and explain any one of them in detail. **07**
(b) Write short note on hydrogen as alternative fuel for vehicles. **07**
- OR**
- Q.4** (a) Give merits and limitations of different wind energy conversion systems. **07**
(b) Explain various recent trends in direct energy conversion systems. **07**
- Q.5** (a) Explain principle of Magneto-hydrodynamic power generation. **07**
(b) Explain various design considerations of fuel cells. **07**
- OR**
- Q.5** (a) Explain in brief merits and limitations of solar cells. **07**
(b) Explain factors affecting biomass generation. **07**
