

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME Semester –IV Examination Dec. - 2011

Subject code: 742101

Date: 07/12/2011

Subject Name: Non Conventional Energy Conversion Systems

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 Solar constant, solar angle and solar time in brief. **07**
(b) Explain design considerations of focusing collectors. **07**
- Q.2** (a) Give various applications of solar cells. **07**
(b) Explain working of photo voltaic cell. **07**
- OR**
- (b) Explain factors affecting biogas generation. **07**
- Q.3** (a) Give classification of biomass gasifier. **07**
(b) Explain advantages of different wind energy conversion systems. **07**
- OR**
- Q.3** (a) Explain various recent trends in direct energy conversion systems. **07**
(b) Explain design considerations for fuel cells. **07**
- Q.4** (a) Explain principle of Magneto-hydrodynamic power generation. **07**
(b) Explain thermoelectric materials and their selection. **07**
- OR**
- Q.4** (a) Explain storage and transportation of hydrogen. **07**
(b) Write short note on hydrogen as alternative fuel for vehicles. **07**
- Q.5** (a) Write short note on solar radiation measurement. **07**
(b) Explain merits and limitations of biological conversion of solar energy. **07**
- OR**
- Q.5** (a) Explain site selection for wind energy conversion systems. **07**
(b) Explain spectral distribution of extraterrestrial radiation. **07**
