

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV • EXAMINATION – WINTER 2013

Subject Code: 141904**Date: 30-12-2013****Subject Name: Non-Conventional Energy Sources****Time: 02:30 pm to 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) What are the convectional and non-convectional energy sources? Describe briefly. **07**
- (b) Explain with neat sketch various sun earth angles. **07**
- Q.2** (a) Write name of solar radiation measuring instruments. Explain sunshine recorder with figure. **07**
- (b) Write short note 'solar pond'. **07**
- OR**
- (b) What is basic principle of OTEC? Explain closed cycle OTEC plant. **07**
- Q.3** (a) Classify Biogas plant. Explain KVIC digester with a neat sketch **07**
- (b) Write short note on Devious rotor. **07**
- OR**
- Q.3** (a) Discuss factors which affect the biogas production in detail. **07**
- (b) Describe the main consideration in selecting the site of wind energy conversion system. **07**
- Q.4** (a) Calculate day length at Delhi on Dec 21st and June 21st in year 2010. Take latitude = 28°38' N **07**
- (b) State MHD principle. Explain open MHD plant with neat sketch. **07**
- OR**
- Q.4** (a) Write scope for Geothermal plant in India and discuss dry steam type Geothermal power plant. **07**
- (b) Write short on Tidal power plant. **07**
- Q.5** (a) What are liquid dominated hydrothermal resources? How these can be utilized in a high temperature wet steam system? **07**
- (b) Discuss : solar cell **07**
- OR**
- Q.5** (a) Define: Energy Management. Write note on 'Energy Audit ' **07**
- (b) What are the main components of a flat plate collector? Explain 'Solar Water Heating System' with neat sketch. **07**
