

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014****Subject Code: 170505****Date: 31-05-2014****Subject Name: Energy Technology****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) What is meant by renewable energy sources? Explain in brief how these energy sources are utilized with special reference to Indian context. **07**

(b) What are the advantages & disadvantages of geothermal energy forms? **07**

Q.2 (a) Describe solar pond briefly. What are the main applications of a solar pond? **07**

(b) What is Biomass? Classify the Biogas plant and Explain any one in detail? **07**

OR

(b) List the factors affecting the site selection for wind energy farm. **07**

Q.3 (a) List the different types of concentrating collectors for solar energy? Describe parabolic trough collector in detail. **07**

(b) Explain any one method of obtaining energy from tides? **07**

OR

Q.3 (a) Describe an MHD open cycle system. What are the main advantages of an MHD power generation? **07**

(b) Describe the 'closed cycle' OTEC system, with its advantages over 'open cycle' system **07**

Q.4 (a) What is proximate and ultimate analysis of coal? Define caking & coking of coal **07**

(b) What is washing of coal? Describe washability curve in detail. **07**

OR

Q.4 (a) Explain the basic components involved in wind energy conversion? **07**

(b) What is electrolysis? Describe the most popular method of hydrogen production? **07**

Q.5 (a) What are the main conditions for thermonuclear fusion? Explain in brief any one nuclear reactor? **07**

(b) What is a fuel cell? Describe the principle of working of a fuel cell with reference to H₂-O₂ cell. **07**

OR

Q.5 (a) What is meant by anaerobic digestion? Explain briefly the factors affecting bio-digestion?. **07**

(b) List the various methods of production of Hydrogen from different sources? **07**
