

**GUJARAT TECHNOLOGICAL UNIVERSITY****M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014****Subject code: 1723007****Date: 25-06-2014****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) Describe with a neat sketch the working of wind energy conversion system (WECS) with main components. **07**  
(b) Discuss National energy strategies in detail. **07**
- Q.2** (a) Explain analysis of coal & its calorific value. **07**  
(b) List the various parameters for selecting the site for wind power plant. List the advantage of wind energy over solar energy. **07**
- OR**
- (b) Discuss the merits & demerits of Vertical axis wind mill over Horizontal axis wind mill. **07**
- Q.3** (a) Explain liquid flat plate collector with an example. **07**  
(b) Define the following term: **07**  
(i) Declination angle (ii) Hour angle (iii) Zenith angle (iv) Latitude angle  
(v) Solar constant (vi) Beam radiation (vii) Angle of incidence
- OR**
- Q.3** (a) Discuss Merits & Demerits of Concentrating collector over flat plate collector. **07**  
(b) Explain solar distillation system in detail. **07**
- Q.4** (a) Explain updraft gasifiers with a neat sketch. **07**  
(b) Explain vapour dominated geothermal system with a neat sketch. **07**
- OR**
- Q.4** (a) Explain the different parameters affecting on the biogas generation. **07**  
(b) Discuss the utilization of geothermal energy. **07**
- Q.5** (a) Discuss principle of tidal power generation & explain advantages of tidal power generation. **07**  
(b) Explain classification of Fuel cells in detail. **07**
- OR**
- Q.5** (a) Explain application of tidal energy also discuss problems in tidal energy **07**  
(b) Write a short note on Hydrogen-Oxygen Fuel cell. **07**

\*\*\*\*\*