

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-IV • EXAMINATION – SUMMER 2013****Subject Code: 140904****Date: 17-06-2013****Subject Name: Energy System****Time: 10:30am – 01:00pm****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) Discuss factor for site selection for hydro power station **07**  
(b) Draw and explain schematic diagram of thermal power station in brief **07**
- Q.2** (a) Describe schematic arrangement of diesel power plant and explain each component. **07**  
(b) Discuss main component of nuclear reactor and their function with neat sketch **07**
- OR**
- (b) Draw and explain closed cycle gas turbine power plant **07**
- Q.3** (a) Discuss fully grid connected wind energy conversion system **07**  
(b) Draw and explain vertical axis wind turbine and also discuss merits over horizontal axis wind turbine **07**
- OR**
- Q.3** (a) Explain construction and function of liquid flat plate collector with neat sketch **07**  
(b) Give advantage of solar water heating system and explain forced circulation solar heating system with block diagram **07**
- Q.4** (a) Give brief note on solar dryer with neat sketch **07**  
(b) Discuss advantages of solar photovoltaic system and draw basic solar PV system **07**
- OR**
- Q.4** (a) Enlist major component in solar pumping system Explain function of any two component with diagram **07**  
(b) Discuss advantage of fuel cell and Classify the types of fuel cells **07**
- Q.5** (a) Discuss tidal energy, its limitation and availability in India **07**  
(b) Draw and explain components of closed ocean thermal energy conversion system **07**
- OR**
- Q.5** (a) Discuss the different bio fuels derived from biogas **07**  
(b) Draw and explain construction of any one type bio gas plant in detail **07**

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