

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

Subject Code: 140904**Date: 30-12-2013****Subject Name: Energy System****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) Explain Nuclear Power Station with neat sketch. **07**
(b) How site for hydro electric plant is chosen? **07**
- Q.2** (a) What are the main component and auxiliary component of gas turbine plants? Explain it. **07**
(b) Explain the function and location of following equipments with respect to thermal power plant **07**
(I) Super heater (II) Electrostatic Precipitator (III) Economizer (IV) Condenser (V) I.D. Fan (VI) F.D. Fan (VII) Exciter
OR
(b) Classify different types of nuclear reactors. **07**
- Q.3** (a) Define following with diagram for solar – earth system **07**
Solar azimuth angle
Zenith angle
Declination angle
Hour angle.
Angle of incidence.
(b) Explain solar photovoltaic system in detail. **07**
OR
- Q.3** (a) Discuss the grid connected wind energy conversion system with the help of schematic diagram. **07**
(b) List applications and limitations of wind energy system. **07**
- Q.4** (a) List types of fuel cells. Explain any one in details. **07**
(b) Explain scattering of Solar radiation by the atmosphere. **07**
OR
- Q.4** (a) Explain Solar drying system **07**
(b) Which methods are used to control the fluctuation of power in wind turbine projects? **07**
- Q.5** (a) Discuss the methods by which the biogas can be used in diesel engines. What are its advantages? **07**
(b) Explain principle of Ocean Thermal Energy Conversion. Discuss resources for power plant based on Ocean energy in India. **07**
OR
- Q.5** (a) Explain various factors to be consider while designing biogas gasifire. **07**
(b) Discuss site selection for steam power station. **07**
