

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 140904****Date: 31/05/2012****Subject Name: Energy Systems****Time: 10:30 am – 01:00 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 the function of following equipments for Steam Power station : (i) Air preheater (ii) Superheater (iii) Economiser (iv) Cooling tower (v) Electrostatic Precipitator (vi) Pulverizer (vii) Alternator. **07**
- (b) Discuss choice of site for Hydro Electric Power station. **07**
- Q.2** (a) Explain function of main components of a Nuclear Reactor with neat sketch. **07**
- (b) Discuss applications of Diesel Power station. **07**
- OR
- (b) State advantages and disadvantages of Gas Turbine Power station. **07**
- Q.3** (a) Explain principle of Wind Energy System. Also list disadvantages of wind energy. **07**
- (b) Explain Grid connected Wind Energy Conversion System. **07**
- OR
- Q.3** (a) Explain principle of Fuel cells. Also state its advantages. **07**
- (b) Explain Hydrogen storage systems. **07**
- Q.4** (a) Explain liquid Flat Plate Solar Collector. Also explain Solar Air heater using it. **07**
- (b) Explain Solar Distillation system. **07**
- OR
- Q.4** (a) Explain medium temperature Solar Power Plant with neat sketch. **07**
- (b) State types of Solar Dryers and explain any one solar dryer with neat sketch. **07**
- Q.5** (a) Explain coal handling plant in detail for Steam Power station. **07**
- (b) Explain floating drum type Biogas plant. List its merits and demerits. **07**
- OR
- Q.5** (a) Explain Anderson cycle Ocean Thermal Energy Conversion (OTEC) system. State advantages and disadvantages of OTEC. **07**
- (b) Explain Tidal power plant with diagram. **07**
