

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV (OLD) EXAMINATION – WINTER 2018****Subject Code:140904****Date: 12/12/2018****Subject Name: Energy Systems****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) Draw and Explain the schematic arrangement of Thermal Power Plant. **07**
(b) Explain the working of different parts of a hydro power plant in detail. **07**
- Q.2** (a) Explain Nuclear Power plant with neat sketch. **07**
(b) Discuss the essential factors to be considered for the site selection of hydro power plant. **07**
- OR**
- (b) Explain the working principle and construction of a closed cycle gas turbine power plant. **07**
- Q.3** (a) Discuss applications of Diesel Power station. **07**
(b) Discuss the essential factors to be considered for the site selection of Nuclear Power Plant. **07**
- OR**
- Q.3** (a) Explain the working principle of wind energy systems. Also list its advantages and disadvantages. **07**
(b) Compare horizontal axis wind turbine with vertical axis wind turbine. **07**
- Q.4** (a) Explain solar photovoltaic system and also explain its use in solar pumping. **07**
(b) List out the different types of solar collector. Explain the different types of flat plat collectors in brief. **07**
- OR**
- Q.4** (a) Define fuel cell. Explain the principle and operation of fuel cell technology. **07**
(b) What is Solar Pond? Discuss the working of solar pond with neat sketch. **07**
- Q.5** (a) Explain various factors to be consider while designing biogas gasifier. **07**
(b) Explain Hydrogen storage systems. **07**
- OR**
- Q.5** (a) With diagram explain working of open cycle Ocean thermal energy conversion systems (OTEC) systems. **07**
(b) Explain Tidal power plant with diagram. **07**
