Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV EXAMINATION – WINTER 2015

Subject Code: 140904 **Date:06/01/2016**

Subject Name: Energy Systems

Time: 02:30pm to 05:00pm **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 the essential factors to be considered for the site selection of Hydro electrical power plant.	**07**
	(b)	Discuss the applications of Diesel power plant.	**07**
Q.2	**(a)**	Draw the neat sketch of a Nuclear reactor and state function of each component.	**07**
	(b)	Discuss the working of a Gas turbine power plant with help of schematic diagram.	**07**
		OR	
	(b)	Explain the functions of following components of Steam power plant. (i) Air preheater (ii) Super heater (iii) Electrostatic precipitator (iv) Cooling tower.	**07**
Q.3	**(a)**	Write a short note on horizontal axis type Wind turbine with the help of neat sketches.	**07**
	(b)	State different types of solar collector. Explain any one of them in detail.	**07**
		OR	
Q.3	**(a)**	Discuss the grid connected wind energy conversion system with the help of schematic diagram.	**07**
	(b)	What is Solar pond? Discuss the working of Solar pond with necessary diagram.	**07**
Q.4	**(a)**	Explain Solar distillation system.	**07**
	(b)	Explain principle of operation of fuel cell. Explain any one in detail.	**07**
		OR	
Q.4	**(a)**	Explain natural convection solar dryer with neat sketch.	**07**
	(b)	Classify fuel cell on different basis.	**07**
Q.5	**(a)**	Discuss applications of Hydrogen energy.	**07**
	(b)	Discuss the working of Double basin type tidal power plant.	**07**
		OR	
Q.5	**(a)**	Explain the principle of Ocean thermal energy conversion and discuss Claude cycle OTEC system in brief.	**07**
	(b)	Explain floating drum type Biogas plant. List its merits and demerits.	**07**

****