Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV • EXAMINATION – WINTER 2013

Subject Code: 141904 **Date: 30-12-2013**

Subject Name: Non-Conventional Energy Sources

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)**	What are the convectional and non-convectional energy sources? Describe briefly.	**07**
	(b)	Explain with neat sketch various sun earth angles.	**07**
Q.2	**(a)**	Write name of solar radiation measuring instruments. Explain sunshine recorder with figure.	**07**
	(b)	Write short note 'solar pond'.	**07**
		OR	
	(b)	What is basic principle of OTEC? Explain closed cycle OTEC plant.	**07**
Q.3	**(a)**	Classify Biogas plant. Explain KVIC digester with a neat sketch	**07**
	(b)	Write short note on Devious rotor.	**07**
		OR	
Q.3	**(a)**	Discuss factors which affect the biogas production in detail.	**07**
	(b)	Describe the main consideration in selecting the site of wind energy conversion system.	**07**
Q.4	**(a)**	Calculate day length at Delhi on Dec 21st and June 21st in year 2010. Take latitude = $28^0$38' N	**07**
	(b)	State MHD principle. Explain open MHD plant with neat sketch.	**07**
		OR	
Q.4	**(a)**	Write scope for Geothermal plant in India and discuss dry steam type Geothermal power plant.	**07**
	(b)	Write short on Tidal power plant.	**07**
Q.5	**(a)**	What are liquid dominated hydrothermal resources? How these can be utilized in a high temperature wet steam system?	**07**
	(b)	Discuss : solar cell	**07**
		OR	
Q.5	**(a)**	Define: Energy Management. Write note on 'Energy Audit '	**07**
	(b)	What are the main components of a flat plate collector? Explain 'Solar Water Heating System' with neat sketch.	**07**

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