Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI • EXAMINATION - WINTER • 2014** 

Su	bject	Code: 161904 Date: 05-12-2014	
Sul	bject	Name: Alternate Energy Sources	
Tir	ne: 0	2:30 pm - 05:00 pm Total Marks: 70	
Inst	tructio	ns:	
		Attempt all questions.	
		Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
	3.	rigures to the right indicate full marks.	
Q.1	(a)	What is meant by renewable energy sources? What are the prospects of non-conventional energy sources in India?	07
	<b>(b)</b>	Define terms: Altitude angle, Incident angle, Zenith angle, Solar Azimuth angle, latitude angle, Declination angle, Hour Angle	07
Q.2	(a)	Write a short note on Darrius rotor.	07
	<b>(b)</b>	What is the basic principle of ocean thermal energy conversion (OTEC)?	07
		OR	
	<b>(b)</b>	Describe the 'closed cycle 'OTEC system, write its advantages over 'open cycle' system.	07
Q.3	(a)	How MHD systems are classified? Describe them in brief.	07
	<b>(b)</b>	What are the advantages and limitations of wave energy conversion?	07
		OR	
Q.3	(a)	Define solar constant. What is the difference between a Pyrheliometer and a Pyranometer?	07
	<b>(b)</b>	Explain energy conversation and energy audit.	07
Q.4	(a)	What are the main applications of a solar pond? Describe briefly.	07
	<b>(b)</b>	Explain the constructional detail and working of KVIC digester.	07
		OR	
Q.4	, ,	How are gasifiers classified? What is pyrolysis? What are the potential applications of the gasifier?	07
	<b>(b)</b>	What are the difficulties in tidal power developments?	07
Q.5	(a)	Classify combined cycle power generation. Explain any one in brief with neat sketch.	07
	<b>(b)</b>	Describe in brief, the different energy storage methods used in the solar system. <b>OR</b>	07
Q.5	(a) (b)	Define geothermal source. Classify and explain geothermal sources.  Describe a binary cycle system for liquid dominated system.	07 07

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