Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2013

Subject code: 713907N Date: 06-06-201.			
Subject Name: Renewable Energy System Time: 10.30 am – 01.00 pm Total Marks: 70			
Ins	1. 2.	tions: Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (b)	Explain the different parameters affecting the biogas generation. Explain the process of photosynthesis in detail.	07 07
Q.2	(a)	<ul> <li>With the help of diagram, explain the terms:</li> <li>Free &amp;Relative wind velocity</li> <li>Drag &amp; Lift forces</li> <li>Solidity</li> <li>Pitch angle &amp; Chord.</li> </ul>	07
	(b)	Explain the wind to electrical energy conversion system with neat sketch.  OR	07
	<b>(b)</b>	Discuss the merits and demerits of vertical mind mill over horizontal wind mill.	07
	(a)	Give classification of solar concentrating collectors. & Explain the compound parabolic concentrating briefly	07
	(b)	Calculate the number of daylight hours in Srinagar for 1 January and 1July take latitude of Srinagar as 34 05 N.  OR	07
Q.3	(a)	Write a shortnote on solar photovoltaic cell.	07
	(b)	Write a brief note on effect of various parameters on performance of flate plate collectors.	07
Q.4	(a) (b)	Explain various routes of biomass energy conversion to other forms of energy. Enlist the merits and short falls of floating drum type and fixed dome type biogas plant	07 07
		OR	
Q.4	(a) (b)	Discuss the application of biogas plant.  Explain downdraft gasifiers with a neat sketch.	07 07
Q.5	(a) (b)	Describe a double flashed steam system for liquid dominated system.  What are the main difference between conventional thermal power plant and geothermal power plant?	07 07
Q.5	(a)	OR Explain vapour dominated geothermal system with neat sketch.	07
<b>ν.</b>	(a) (b)	Discuss the utilization of geothermal energy.	07

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