Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2014

Subject code: 713907N **Date: 21-06-2014**

Subject Name: Renewable Energy System

Time: 02:30 pm - 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)**	Explain the Sun as present and future source of Energy.	**07**
	(b)	What are the different types of renewable energy sources and their availability in Indian context?	**07**
Q.2	**(a)**	Write a note on beam and diffuse radiation.	**07**
	(b)	What are the different methods of solar energy storage?	**07**
		OR	
	(b)	Analyze the aerodynamic forces acting on the blade in wind energy.	**07**
Q.3	**(a)**	What consideration should be taken care for Digester Design?	**07**
	(b)	Write a note on Bio-gas from plant waste and its issues.	**07**
		OR	
Q.3	**(a)**	Explain the classification of Bio-gas plants in brief.	**07**
	(b)	What are the advantages and disadvantages of geothermal energy?	**07**
Q.4	**(a)**	Explain the application of wind energy with illustrations.	**07**
	(b)	Describe the types of OTEC power plants with working in brief.	**07**
		OR	
Q.4	**(a)**	Write a note on wave energy conversion machines.	**07**
	(b)	Explain various aspects of wind turbine design.	**07**
Q.5		Write a note on any two :-	**14**

1. Economics and viability of wind farm.
2. Aerobic and anaerobic bioconversion processes.
3. Removal of H_2O ans CO_2 in biomethanation.
4. Thermo-chemical conversion in bio-mass.

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