Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY M.E. – SEMESTER – IV EXAMINATION – OCTOBER 2012

Subject code: 742101 Date: 25-10-2		2	
Sub	Subject Name: Non-Conventional Energy Conversion Systems		
Time: 2:30 pm – 5:00 pm Total Marks: 7)	
Inst	Instructions:		
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Define the following term: (1) Solar Constant (2) Declination (3) Altitude Angle (4) Hour Angle (5) Zenith Angle (6) Beam Radiation (7) Global Radiation	07
	(b)		07
Q.2	(a)	State the main component of flat plate collector? Explain the working of a liquid flat plate collector?	07
	(b)	Write a short note on Photo Voltaic Cell?	07
	(b)	OR Explain Focusing on concentrating collectors, their advantages and disadvantages over flat plate collector.	07
Q.3	(a) (b)	Discuss the factor affecting the Biogas Production in Detail. Discuss the factors affecting site selection of wind mills. OR	07 07
Q.3	(a) (b)		07 07
Q.4	(a)	Explain MHD power Generation. State design problems, advantages and disadvantages associated with MHD.	07
	(b)	Explain principle of operation and design consideration of fuel cells OR	07
Q.4	(a) (b)	Explain advantages, disadvantages and application of fuel cell. Explain hydrogen as alternative fuel.	07 07
Q.5	(a) (b)	Explain storage and transportation of Hydrogen Fuel. Discuss advantages and disadvantages of biological conversion of solar energy. OR	07 07
Q.5	(a) (b)	Discuss Recent trends in direct energy conversion systems.	07 07
