Seat No.:	Enrolment No.

Subject Code: 161904

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER - VI (OLD).EXAMINATION - WINTER 2016

Date: 26/10/2016

7	•	ct Name: Alternate Energy Sources 10:30 AM to 01:00 PM Total Marks: 70 tions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	
Q.1	(a)	Differentiate – 1. Renewable vs. non-renewable energy sources. 2. Conventional vs. non-conventional energy sources.	07
	(b)	Explain – Energy conservation, energy management, energy audit, energy security.	07
Q.2	(a) (b)	What is Solar pond? Explain solar pond with schematic diagram. Explain the concept of "solar constant" and "air mass"? What is the variation of solar constant with time and what is the reason for this variation? OR	07 07
	(b)	How are the concentrating collectors classified? With the schematic diagram explain construction and working of any one.	07
Q.3	(a) (b)	Write a brief note on Darrius turbine. Explain construction and working of horizontal axis wind turbine (HAWT) with neat schematic diagram.	07 07
Q.3	(a) (b)	OR Explain working of liquid metal MHD system with the help of neat sketch. Derive expression for maximum power, maximum torque and maximum axial thrust available from a wind turbine from basic principles.	07 07
Q.4	(a) (b)	Explain selection criterion of heat exchanger in OTEC system. Write advantages and disadvantages of MHD power plant system. OR	07 07
Q.4	(a) (b)	What is the basic principle of OTEC? Explain open cycle OTEC plant. List application and prospects of geothermal energy with reference to Indian context.	07 07
Q.5	(a) (b)	What are the difficulties in tidal power development? Discuss Hydrogen as alternative fuel for automobile vehicles. OR	07 07
Q.5	(a) (b)	Write a note on tidal power plant with double basin system. How gasifiers classified? What is pyrolysis? Explain pyrolysis.	07 07

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