Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– VII • EXAMINATION – WINTER 2014

Subject Code: 170505 **Date:29/11/ 2014**

Subject Name: Energy Technology

Time: 10:30am TO 01:00 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)**	Give detailed classification of energy sources: renewable and non-renewable sources, primary and secondary sources.	**07**
	(b)	Write a brief note on types, analysis and properties of coal.	**07**
Q.2	**(a)**	Classify different types of solar collectors and explain any one in detail.	**07**
	(b)	Discuss gasification and liquefaction of solid fuels.	**07**
		OR	
	(b)	Define solar constant and discuss solar energy storage system in brief.	**07**
Q.3	**(a)**	Classify WEC systems and explain its working with neat sketch.	**07**
	(b)	Enlist different geothermal resources and explain heat extraction from hot dry rocks.	**07**
		OR	
Q.3	**(a)**	Describe working of vapor dominated power plant from geothermal energy source.	**07**
	(b)	Discuss different biomass conversion technologies in detail.	**07**
Q.4	**(a)**	Explain the phases involved in generation of biogas from biomass and factors affecting the same.	**07**
	(b)	Discuss working principle and advantages of “closed cycle” OTEC system.	**07**
		OR	
Q.4	**(a)**	Define and classify fuel-cell. Explain any one in detail with applications.	**07**
	(b)	State properties of hydrogen and discuss the methods of hydrogen production.	**07**
Q.5	**(a)**	Write a note on methods of utilizing tidal energy and its storage.	**07**
	(b)	What is nuclear fission and fusion? Explain the components of nuclear reactor with neat figure.	**07**
		OR	
Q.5	**(a)**	Explain working of MHD system and discuss its advantages and disadvantages.	**07**
	(b)	Explain working of boiling water nuclear reactor power plant in detail.	**07**

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