Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-IV Remedial Examination Nov/ Dec. 2010

Subject code:140904 **Subject Name: Energy Systems**

Date: 08 / 12/ 2010 **Time: 03.00 pm – 05.30 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 nuclear power plant with diagram.	**07**
	(b)	Explain the function and location of following equipments with respect to thermal power plant (I) Super heater (II) Electrostatic Precipitator (III) Economizer (IV) Condenser (V) I.D. Fan (VI) F.D. Fan (VII) Exciter	**07**
Q.2	**(a)**	(1) What is chain reaction?	**03**
		(2) What is meant by water hammering effect? How it is minimized with the help of surge tank?	**04**
	(b)	Discuss the essential factors to be considered for the site selection of hydro electrical power plant.	**07**
		OR	
	(b)	Write notes on "Pumped Storage Hydro Electric power plant"	**07**
Q.3	**(a)**	Discuss the working of a Gas turbine power plant with the help of schematic diagram.	**07**
	(b)	Draw the typical lay out of thermal power plant and describe the function of a coal handling plant.	**07**
		OR	
Q.3	**(a)**	What is Solar Collector? State various types of solar collector. Explain any one of them.	**07**
	(b)	What is Solar Pond? Discuss the working of solar pond with neat sketch.	**07**
Q.4	**(a)**	Discuss the methods of Site selections for locating the Wind Mills	**07**
	(b)	Explain Wind Power Generation with schematic diagram.	**07**
		OR	
Q.4	**(a)**	Explain scattering of Solar radiation by the atmosphere.	**05**
	(b)	If the angle of declination on a particular day is $+18.25^{o}$, which is the date assuming leap year?	**04**
	(c)	Discuss the applications of Diesel Power Plant.	**05**
Q.5	**(a)**	List out the applications of Solar Energy. Explain any one with neat sketch.	**07**
	(b)	Enumerate applications of hydrogen energy.	**03**
	(c)	Which methods are used to control the fluctuation of power in wind turbine projects ?	**04**
		OR	
Q.5	**(a)**	Explain Energy conversion process for Ocean Thermal Energy.	**04**
	(b)	Write a note on (I) Bio mass Energy Conversion (II) Fuel Cell	**10**

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