Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject code: 141904
Subject Name: Non Conventional Energy Sources

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)**	Why the exploration of renewable sources of energy has become essential?	**05**
	(b)	What are the advantages and limitations of renewable energy sources?	**04**
	(c)	Explain Energy Conservation and its importance.	**05**
Q.2	**(a)**	What is Sunshine recorder? Explain with the help of diagram.	**05**
	(b)	Define Zenith angle.	**02**
	(c)	Discuss the working of Compound Parabolic Concentrator (CPC) and state its advantages and disadvantages.	**07**
		OR	
	(c)	What are the main components of a flat-plate collector? Explain function of each with sketch.	**07**
Q.3	**(a)**	Enumerate the different main applications of solar energy. Describe a Natural circulation solar water heating system.	**07**
	(b)	What is the principle of solar photovoltaic power generation? State the advantages and disadvantages of photovoltaic system.	**07**
		OR	
Q.3	**(a)**	Explain Summer Solar green house and state their advantages.	**07**
	(b)	Explain Domestic Solar Cooker (Box Type) and state the disadvantages of it.	**07**
Q.4	**(a)**	Classify the Wind Mills and explain Horizontal Axis Wind Mill.	**07**
	(b)	Explain the methods are used to control the fluctuation of power in Wind turbine.	**04**
	(c)	State the advantages and disadvantages of wind power.	**03**
		OR	
Q.4	**(a)**	Explain Fixed dome type domestic biogas plant.	**05**
	(b)	What are the factors affecting the production of Biogas.	**05**
	(c)	Define biomass and biomass energy. Discuss various biomass resources with examples.	**04**
Q.5	**(a)**	State the advantages and disadvantages of Geothermal energy.	**04**
	(b)	Discuss open cycle OTEC system with the help of a neat diagram.	**05**
	(c)	Discuss the working of single basin type tidal power plant	**05**
		OR	
Q.5	**(a)**	State the advantages and disadvantages of Magneto hydrodynamic (MHD) system.	**05**
	(b)	Define Fuel cell and state the advantages of Fuel cell over conventional power plants.	**05**
	(c)	Enumerate the application of hydrogen energy.	**04**

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