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LDRP INSTITUTE OF TECHNOLOGY AND RESEARCH GANDHINAGAR

B. E. Semester- IV

Subject Code: ME403 **Subject Name: NCES**
Date:02-03-2015 **Time: 12:00 Noon to 1:30 p.m.**
Branch: Mechanical & Automobile **Max. Marks: 30**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumption whenever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	(a)	Explain briefly sun tracking system for line focus & point focus.	(5)
	(b)	Explain with neat sketch Pyranometer for measuring global radiation	(5)
		OR	
	(b)	Explain with neat sketch Fresnel lens collector.	(5)
Q.2	(a)	Describe briefly construction and working of Compound Parabolic Concentrator	(5)
	(b)	The wind is blowing at the rate of 15m/sec having the atmospheric condition at 1 bar 310 K the wind is harnessed by a wind turbine having its efficiency of 35 % .find total power and actual power per square meter of rotor power which can be developed by the turbine assume R= 287 N.m/kg.K.	(5)
		OR	
	(a)	Determine the number of day light hours in shrinagar (Latitute 36^0 00') on 5^{th} January & 5^{th} july.	(5)
	(b)	Derive an equation for maximum power available from wind turbine.	(5)
Q.3	(a)	Describe the closed cycle OTEC power plant with neat sketch.	(5)
	(b)	State advantages and disadvantages of wind energy over other energy forms	(5)
		OR	
Q.3	(a)	Discuss the working of double basin type tidal power plant.	(5)
	(b)	Define following terms with figures: Air mass, Declination angle, solar constant, solar Azimuth angle, Angle of Incidence	(5)

Best of luck