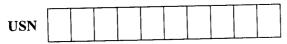
of hydrogen production.



Seventh Semester B.E. Degree Examination, Dec.2016/Jan.2017 **Non-Conventional Energy Sources**

Max. Marks:100 Time: 3 hrs.

> Note: 1. Answer any FIVE full questions, selecting atleast TWO auestions from each part.

		$\underline{\mathbf{PART}} - \mathbf{A}$	
1	a. b.	Elaborate on India's production and reserves of commercial energy sources. Enlist the merits and demerits of any three non-conventional energy sources.	(10 Marks) (10 Marks)
2	a.	With schematic representation, explain the mechanism of absorption, scattering diffuse radiation received at earth surface. What are the various instruments used for solar radiation measurements.	(00 1.200
	b. c.	pyranometer with neat sketch. Define: (i) Zenith angle (ii) Solar altitude angle (iii) Surface azimuth angle.	(06 Marks)
3	a.	Explain beam radiation and diffuse radiation. Also write the expression for tilt fa above two.	
	b.	List the different types of concentrating collectors. Explain any one of them	•
	c.	With a neat sketch explain the working principle of solar pond.	(07 Marks)
4	a.	Explain the heat transfer process in LFPC with neat sketch and also write ene equation, explaining each term in it.	,
	b.	equation, explaining each term in it. List and discuss the various parameters that affect the performance of the collect	or. (12 Marks)
5	a. b.	of 15 m/s at 1500 and 1 SIG alin, pressure. The tare	(08 Marks) Sine diameter ind turbine is
		considered. Calculate the following: (i) Total power density in the wind stream (iii) A reasonally obtainable power density (v) Torque at maximum efficiency Assume $R = 0.287$ kJ/kg K, $\eta = 35\%$.	
(b	Explain briefly the harnessing of Tidal Energy. Explain with a sketch, the closed Rankine cycle OTEC system.	(06 Marks (08 Marks (06 Marks
		Explain the constructional details and working of KVIC digester. Explain the following: (i) Photo synthesis (ii) Energy plantation. What are the different methods of hydrogen production? Describe the more possible.	(10 Marks (10 Marks

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(10 Marks) Explain briefly the methods of hydrogen storage and transportation.