17EE563

Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 **Renewable Energy Resources**

Time: 3 hrs.

Max. Marks: 100

	111	N	lote: Answer any FIVE full questions, choosing ONE full question from each n	nodule.
tice.			Module-1	
On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Any revealing of identification, appeal to evaluator and /or equations written eg, $42+8=50$, will be treated as malpractice.	1	a.	Define: i) Latitude angle ii) Declination angle iii) Hour angle	
s. tre			iv) Solar altitude angle.	(08 Marks)
age 11 be		b.	Write notes on classification of energy resources.	(08 Marks)
On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Any revealing of identification, appeal to evaluator and /or equations written eg, $42+8=50$, will be		c.	What are the factors affecting renewable energy development?	(04 Marks)
ning +8=			OR	(09 Marks)
nair , 42	2	a.	What are the advantages and limitations of renewable energy source?	(08 Marks) (08 Marks)
rer eg		b.	Describe thermal energy storage systems.	(04 Marks)
the itter		C.	Write a short note on layers of the sun.	(04 Marks)
S OI			Module-2	
line	2		With neat sketch, discuss important parts of flat plate collector.	(08 Marks)
oss	3	a.	What are the advantages and disadvantages of concentrating collectors over	,
al ci		b.	collector?	(08 Marks)
gon;		C	Write short note on solar air heating.	(04 Marks)
dia or an		C.	Write short note on solar air nearing.	
raw luato			OR	
ly d eval	4	a.	Explain working of a solar water heating system with a neat diagram.	(06 Marks)
sori I to		b.	With neat diagram, explain solar pond and write any two advantage of it.	(08 Marks)
pul		c.	Explain working of solar cooker with flat plate box type.	(06 Marks)
rs, com tion, ap		0.	Module-3	
swe	5	a.	Explain various factors in wind turbine site selection.	(06 Marks)
ır an enti		b.	Explain the various methods of hydrogen energy storage.	(08 Marks)
you of id		c.	Describe a binary cycle geothermal power plant.	(06 Marks)
pleting ealing o			OR	
rev	6	a.	With a neat diagram, explain working of double flash type geo thermal	electric power
On o			generation.	(08 Marks)
2.7		b.	Derive the expression for power developed due to wind.	(06 Marks)
Important Note :		c.	Briefly explain tank type electrolyzer of hydrogen energy production.	(06 Marks)
ant			Module-4	
port	7	a.	Classify and explain methods for obtaining energy from biomass.	(08 Marks)
Im		b.	1 1 C 1 1 - C Pia con mlant	(06 Marks)

c. Explain briefly advantages of Anaerobic digestion.

(06 Marks)

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OR Using a schematic diagram, explain the co-operating two-basin systems.	400.7.7
Explain fluidized bed gasifier, with a neat diagram. List the advantages and limitations of tidal power.	(08 Marks) (06 Marks)
	(06 Marks)
Module-5 Explain open cycle ocean thermal energy conversion technique. With a neat diagram, explain OTEC Ranking cycle.	(08 Marks)
Brief on advantage and disadvantage of sea wave power.	(06 Marks) (06 Marks)

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Module-5

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9	a.	Explain open cycle ocean thermal energy conversion technique.		(08 Marks)
	b.	With a neat diagram, explain OTEC Ranking cycle.	2.3	(06 Marks)
	C.	Brief on advantage and disadvantage of sea wave power.	Name -	(06 Marks)

10	a.	Describe the closed cycle OTEC system, with the help of diagram.	(10 Marks)
	b.	Briefly discuss about devices used for harnessing sea wave energy.	(10 Marks)