

MAKE-UP EXAM

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BETCKE105/BETCK105E

First Semester B.E./B.Tech. Degree Examination, Nov./Dec. 2023 Renewable Energy Sources

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks , L: Bloom's level , C: Course outcomes.

3. VTU handbooks are permitted.

Module – 1			M	L	C
Q.1	a.	Explain the availability of Renewable Energy in India and Worldwide.	10	L2	CO1
	b.	Discuss the causes of Energy scarcing , further mention factors to be considered for solving energy crunch problems.	10	L2	CO1
OR					
Q.2	a.	Enumerate the practical difficulties in exploiting non – conventional energy sources.	10	L2	CO1
	b.	Explain and distinguish between tidal wave and ocean thermal energy.	10	L2	CO1
Module – 2					
Q.3	a.	State clearly the difference between the distributed collector system and central receiver system in solar thermal applications.	10	L2	CO2
	b.	With a neat diagram, discuss the important parts of any flat plate solar collectors.	10	L2	CO2
OR					
Q.4	a.	Enumerate the need for solar cells.	4	L2	CO2
	b.	Explain the term fill – factor and its importance as a performance parameter of a solar cell.	8	L2	CO2
	c.	With a neat diagram, explain solar pond.	8	L2	CO2
Module – 3					
Q.5	a.	Briefly discuss the availability of wind energy in India.	4	L2	CO2
	b.	Enumerate the factors to be considered for wind – turbine site selection.	8	L2	CO2
	c.	With a neat diagram, explain Drag – type vertical axis wind turbines.	8	L2	CO2
OR					
Q.6	a.	Draw the schematic representation of down – draft gasifier.	8	L2	CO3
	b.	With a neat diagram, explain working of a fixed dome type bio – gas plant.	12	L2	CO3

Module – 4					
Q.7	a.	Enumerate the problems faced in exploiting tidal energy.	4	L2	CO4
	b.	Explain the single – basin system of power generation and the simplest scheme for developing tidal power.	8	L2	CO4
	c.	Write short notes on Turbines for tidal system.	8	L2	CO4
OR					
Q.8	a.	With a neat diagram, explain the working principle of ocean thermal energy conversion.	10	L2	CO4
	b.	Explain the working principle of Open – cycle OTEC.	10	L2	CO4
Module – 5					
Q.9	a.	Explain the principle and functioning of a typical fuel cell.	10	L2	CO5
	b.	Classify the several types of fuel cells.	10	L2	CO5
OR					
Q.10	a.	Explain various Hydrogen production technologies.	10	L2	CO5
	b.	Write short notes on : i) Hydrogen Energy storage. ii) Applications of Hydrogen Energy.	10	L2	CO5
