CBCS SCHEME

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BETCKE105/BETCK105E

First Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Renewable Energy Sources

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Briefly explain the following principles of renewable energy, energy and sustainable development and renewable energy and social implications.	10	L2	CO1
	b.	Discuss the renewable energy availability in India and Worldwide.	10	L2	CO1
		OR			
Q.2	a.	With neat sketch, briefly explain (i) Solar energy (ii) Wind energy	10	L2	CO1
	b.	Explain in detail the concept of Internet of Energy.	10	L2	CO1
		Module – 2			
Q.3	a.	With the help of neat sketch, explain the construction and working of pyrheliometer.	10	L2	CO2
	b.	With the help of neat sketch, explain solar flat plate collector.	10	L2	CO2
		OR			
Q.4	a.	Explain the principle and working of solar photo voltaic cell with the help of neat sketch.	10	L2	CO2
	b.	List the advantages, disadvantages and applications of solar photovoltaic cell.	10	L2	CO2
		Module – 3			
Q.5	a.	Explain with neat sketch the basic components of the wind energy conversion system.	10	L2	CO3
	b.	Compare horizontal axis and vertical axis window turbines.	05	L2	CO3
	c.	List the major problem associated with wind energy conversion systems.	05	L2	CO3
		OR			
Q.6	a.	Explain in detail the photosynthesis process.	10	L2	CO3
	b.	With the help of neat diagram, explain downdraft gasifier.	10	L2	CO3
		Module – 4			
Q.7	a.	Explain with a neat sketch single basin and double basin tidal power plant.	10	L2	CO4
	b.	Explain the advantages and disadvantages of tidal power plant.	10	L2	CO4
		OR			
Q.8	a.	With the help of neat sketch, explain the principle of working of OTEC.	10	L2	CO4
	b.	Explain the different problem associated with OTEC.	10	L2	CO4
		Module – 5			
Q.9	a.	Explain the different classification of fuel cells.	08	L2	CO5
	b.	Explain the concept of zero energy.	06	L2	CO5
	c.	Define and explain a fuel cell.	06	L2	CO5
		OR			
Q.10	a.	With the help of neat diagram, explain electrolysis method of producing hydrogen (H_2).	10	L2	CO1
	b.	List the advantages and problem associated with hydrogen energy.	05	L2	CO1
	c.	List the application of Hydrogen energy.	05	L2	CO1

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