CBCS SCHEME

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BETCK205E

Second Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
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.

		Module – 1	M	L	C
Q.1	a.	Explain India's production and reserves of commercial energy sources with a pie chart.	6	L2	CO1
	b.	Write a brief note on tidal energy and ocean thermal energy.	8	L1	CO1
	c.	Write a brief note on Internet of energy.	6	L1	CO1
		OR			
Q.2	a.	List any five reasons for need for non – conventional energy sources.	5	L1	CO1
	b.	Discuss how biomass energy and geothermal energy can be utilized effectively.	8	L2	CO1
	c.	Discuss the principles of renewable energy.	7	L2	CO1
		Module – 2			
Q.3	a.	With a neat graph, explain solar radiation data on one clear sunny day.	6	L2	CO2
	b.	With a neat sketch, explain the working of pyrometer and sunshine recorder.	8	L2	CO2
	c.	Explain the advantages and disadvantages of solar photo voltaic system.	6	L2	CO2
		OR			
Q.4	a.	Explain the construction of a flat plate collector with a neat sketch.	7	L2	CO2
	b.	With neat sketches, explain slope angle, surface azimuth angle and angle of incidence.	8	L2	CO2
	c.	With a neat sketch, explain the working of pyrheliometer.	5	L2	CO2
		Module – 3			
Q.5	a.	How is wind generated on earth? With a neat sketch, explain the basic construction of a wind turbine.	8	L2	CO3
	b.	Explain the photosynthesis process.	6	L2	CO3
	c.	Explain the downdraft gasifier with neat diagram.	6	L2	CO3
		OR			

Q.6	a.	Explain availability of wind energy in India and major problems associated with wind power.	8	L2	CO3
	b.	Explain the working of savonius wind mill with neat diagram.	7	L2	CO3
	c.	With a neat sketch, explain the working of a gobar gas plant.	5	L2	CO3
		Module – 4			
Q.7	a.	Discuss the fundamental characteristics of tidal power plant.	6	L2	CO4
	b.	Explain the power generation by open cycle OTEC with neat diagram.	8	L2	CO4
	c.	Discuss the advantages and disadvantages associated with OTEC.	6	L2	CO4
		OR			
Q.8	a.	Explain the power generation by Anderson cycle OTEC with neat diagram.	8	L2	CO4
	b.	Discuss the advantages and disadvantages of tidal power plant.	6	L2	CO4
	c.	Discuss the problems associated with OTEC.	6	L2	CO4
		Module – 5			
Q.9	a.	Explain hydrogen generation by electrolysis process with neat diagram.	6	L2	CO5
	b.	Discuss the pros and cons of hydrogen usage of fuel.	6	L2	CO5
	c.	Explain the concept of zero energy building with neat diagram.	8	L2	CO5
		OR			
Q.10	a.	Discuss the applications of hydrogen energy.	6	L2	CO5
	b.	Explain the power generation by fuel cell with neat diagram.	8	L2	CO5
	c.	Write a brief note on hydrogen energy storage.	6	L1	CO5

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