BME654B

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Model Question Paper 2022-23 (CBCS Scheme)
Sixth Semester B.E. Degree Examination (Mechanical Engineering)

RENEWABLE ENERGY POWER PLANTS

TIME: 03 Hours **Max.Marks:100**

Note: 1. Answer any FIVE full questions, choosing at least ONE question from each MODULE
2. M: Marks, L: Bloom's level, C: Course outcomes.

		Module -1	M	L	C
Q1	a.	Explain the need of non-conventional energy sources.	10	L2	CO1
	b.	List advantages and disadvantages of renewable energy resources.	10	L2	CO1
		OR			
Q2	a.	With schematic representation explain mechanism of absorption, scattering beam and diffused radiation received at Earth's surface	10	L2	CO1
	b.	Explain spectral distribution of extra-terrestrial radiation.	10	L2	CO1
		Module- 2			
Q3	a.	Explain with a neat sketch working of pyranometer.	10	L2	CO2
	b.	With a neat sketch explain working of liquid flat plate collector.	10	L2	CO2
		OR			
Q4	a.	Explain the working principle and I-C Characteristics of Solar PV Cell.	10	L2	CO2
	b.	Discuss how regular operation, maintenance, and performance monitoring contribute to the long-term reliability of a solar power plant.	10	L2	CO2
		Module - 3			
Q5	a.	List types of wind mills. Explain Horizontal Axis Wind Machine.	12	L2	CO3
	b.	Describe the main consideration in selecting the site for wind generator.	08	L2	CO3
		OR			
Q6	a.	Describe construction and working principle of geothermal energy with schematic diagram.	12	L2	CO3
	b.	List and explain the problems associated with Geothermal System operations.	08	L2	CO3
		Module - 4			
Q7	a.	Explain with a sketch double basin tidal power plant.	10	L2	CO4
	b.	What are the advantages and limitations of tidal energy?	10	L2	CO4
		OR			
Q8	a.	With the neat sketch explain the working principle of OTEC power station. (Closed cycle)	10	L2	CO4
	b.	What are the problems associated with OTEC?	10	L2	CO4
		Module - 5			
Q9	a.	Explain the biomass sources for biogas generation.	10	L2	CO5
	b.	Sketch and explain the working of a floating dome type biogas plant used in India.	10	L2	CO5
		OR			
Q10	a.	Describe the main sources from which hydrogen can be obtained for energy use.	10	L2	CO5
	b.	Explain the basic principle behind biochemical production of hydrogen.	10	L2	CO5