Model Question Paper-2 with effect from 2022-23 (CBCS Scheme)

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Sixth Semester B.E. Degree Examination
Renewable Energy Power Plants

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

Note: 01.Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
02. M: Marks, L: Blooms Level, C: Course outcomes
03. Assume missing data suitably

		Module-1	M	L	C
Q.01	**a**	Explain briefly different renewable and non-renewable energy sources.	**10**	**L2**	**CO1**
	b	Justify the statement "Indian economy is depends on energy".	**10**	**L2**	**CO1**
		OR			
Q.02	**a**	Illustrate the radiation data collection with suitable graphs.	**10**	**L2**	**CO1**
	b	Sketch and explain the Pyrheliometer.	**10**	**L2**	**CO1**
		Module-2			
Q.03	**a**	Define the following: (i) Solar altitude (ii) Declination angle (iii) Zenith angle (iv) Hour angle (v) Surface azimuth angle	**10**	**L1**	**CO2**
	b	Analyze with a sketch, the working of flat plat collector.	**6**	**L3**	**CO2**
	c	Explain the thermal energy storage systems	**4**	**L2**	**CO2**
		OR			
Q.04	**a**	With a neat sketch, enumerate the concept behind the solar pond and solar chimney.	**10**	**L2**	**CO2**
	b	Sketch and explain the mechanism behind photovoltaic conversion.	**10**	**L2**	**CO2**
		Module-3			
Q.05	**a**	Interpret the properties, availability and problems associated with wind energy	**10**	**L3**	**CO3**
	b	Sketch and explain the working principal of a vertical axis wind mill.	**10**	**L2**	**CO3**
		OR			
Q.06	**a**	Discuss biogas production from organic wastes by anaerobic fermentation with a neat sketch.	**10**	**L2**	**CO3**
	b	Illustrate the process of transportation of biogas and problems associated with it. Mention the application of biogas.	**10**	**L3**	**CO3**

Module - 4					
Q. 07	**a**	Write a note on flow duration curve and hydrographs.	**3**	**L2**	**CO4**
	b	Discuss the advantages and disadvantages of hydroelectric power plant.	**7**	**L2**	**CO4**
	c	Sketch and explain the hydroelectric power plant.	**10**	**L2**	**CO4**
OR					
Q. 08	**a**	Illustrate the operation of tidal power plant with a neat sketch	**10**	**L2**	**CO4**
	b	Discuss briefly process of wave energy conversion and technologies available.	**10**	**L2**	**CO4**
Module - 5					
Q. 09	**a**	Execute a case study on OTEC power plant.	**10**	**L3**	**CO5**
	b	List and explain the problems associated with geothermal system operation.	**10**	**L2**	**CO5**
OR					
Q. 10	**a**	With a neat sketch explain the geothermal system by Hot Dry Rock (HDR).	**10**	**L2**	**CO5**
	b	Discuss the advantages, disadvantages and application of geothermal power.	**10**	**L2**	**CO5**