Reg. No.												

Question Paper Code	12589

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Seventh Semester

Mechanical Engineering

ME8072 - RENEWABLE SOURCES OF ENERGY

Regulations - 2017

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	How energy sources can be classified?	2	K1	CO1
2.	Justify renewable energy technologies are more attractive than conventional energy technologies.	2	K1	CO1
3.	Classify heaters.	2	K2	CO2
4.	List the major drawbacks to the extensive application of solar energy.	2	K1	CO2
5.	List the factors that determine the output from a wind energy convertor.	2	K2	CO3
6.	Define Aerofoil, Angle of attack.	2	K2	CO3
7.	Classify bio gas plants.	2	K1	CO4
8.	Explain pyrolysis.	2	K1	CO4
9.	Write the advantages and disadvantages of OTEC.	2	K2	CO5
10.	How nature of Geothermal fields is classified?	2	K1	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	Explain the prospects of non-conventional energy sources in India.	13	K2	CO1
	b)	Summarize the following: i) Water power ii) Nuclear power	13	K2	CO1
12.	a)	How solar air collectors are classified? What are the main applications of solar dryer?	13	K3	CO2
	b)	Summarize briefly about solar electric power generation.	13	K3	CO2
13.	a)	Summarize the different types of wind turbine used for developing wind power.	13	K2	CO3

	b)	Describe the main applications of wind energy with the help of neat sketches.	*13*	*K3*	*CO3*
14.	a)	Explain different thermodynamic cycles used for power generation when bio gas is used as basic fuel.	*13*	*K4*	*CO4*
	b)	Explain the process of photo synthesis. What are the necessary conditions of it?	*13*	*K4*	*CO4*
15.	a)	Explain in brief the principles of OTEC energy utilization.	*13*	*K3*	*CO5*
	b)	Examine the types of fuel cells with neat sketch.	*13*	*K3*	*CO5*

PART - C (1 × 15 = 15 Marks)

16.	a)	Explain briefly the principle and working of Solar furnace.	*15*	*K4*	*CO2*
	b)	Explain briefly the environmental impact of wind energy.	*15*	*K4*	*CO3*