Register No: _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Seventh Semester

Electrical and Electronics Engineering

CME365-Renewable Energy Technologies

(Common to Computer Science and Engineering & Information Technology)

Regulations - 2021

Duration : 3 Hrs *Maximum : 100 Marks*

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

Q. No	*Questions*	*BLT*	*CO*	*Marks*
1.	Categorize the different types of renewable energy sources.	AN	1	2
2.	Define per capita energy consumption.	RE	1	2
3.	What is meant by solar collector? Give its types.	RE	2	2
4.	List out the advantage of solar cell.	AN	2	2
5.	Define Betz limit of a wind turbine.	RE	3	2
6.	Classify wind turbine based on the rotation of rotor.	UN	3	2
7.	Give the application of Bio Energy.	AP	4	2
8.	Define Cogeneration.	UN	4	2
9.	State the advantages of wave energy generation?	UN	5	2
10.	What are the major components of a small hydropower plant?	RE	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)*

Q. No		*Questions*	*BLT*	*CO*	*Marks*
11.	a	Illustrate Indian energy scenario in various sectors with suitable example.	UN	1	13
		Or			
	b	Demonstrate the various types of renewable energy sources with neat sketch.	UN	1	13
12.	a	Identify the instrument used for measurements of solar radiation and sunshine with neat sketch.	AP	2	13
		Or			
	b	Develop the fundamental model of solar photo voltaic conversion system with neat sketch. Discuss the merits and demerits of Solar photo voltaic conversion system.	AP	2	13
13.	a	Compare the working of horizontal axis and vertical axis wind turbine with neat sketch.	AN	3	13
		Or			
	b i	List out the various factor affecting site selection for wind farms.	AN	3	6
	ii	Categorize the applications of wind energy system. Explain any one of its application in detail.	AN	3	7

14.	a	Demonstrate the construction and working principle of biomass direct combustion plants in detail. Enumerate the advantages and disadvantages of bio resource.	UN	4	13
		Or			
	b	Explain the working principle of biomass gasifiers with a neat sketch. Give its advantages and disadvantages.	UN	4	13
15.	a	Draw the layout of the small-hydro scheme and explain its components. What are its advantages and disadvantages?	AP	5	13
		Or			
	b	Identify the general arrangements for generating units in tidal power plants. What are its merits and demerits?	AP	5	13

*PART – C (Marks 1*15 = 15)*

Q. No		*Questions*	*BLT*	*CO*	*Marks*
16.	a	Explain the working of any one type of concentrating collectors with the help of a neat sketch.	UN	2	15
		Or			
	b	Explain the principle and working of the open and closed OTEC cycle.	UN	5	15