Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 80017

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2025
Fifth Semester
Electrical and Electronics Engineering
U23EEV11 – GENERATION OF ELECTRICAL ENERGY
(Regulation 2023)

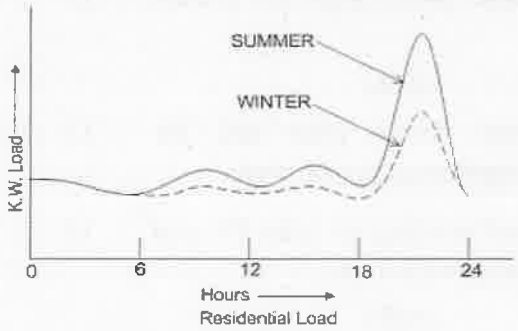
Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Justify the given load curve and write your comments. 	2	K2	CO1
2.	Differentiate block rate and flat rate tariff.	2	K2	CO1
3.	List any four factors taken into account while selecting the site for a nuclear power plant.	2	K1	CO2
4.	Justify the statement - "The diesel power plants are often used as peak load plants".	2	K2	CO2
5.	Why the boost converters are used in solar PV system?	2	K2	CO3
6.	How the solar cells are connected to form a solar panel?	2	K2	CO3
7.	Compare horizontal and vertical axis wind turbine.	2	K2	CO4
8.	Name the types of generators used in wind energy conversion system.	2	K1	CO4
9.	Categorize various protection schemes involved in microgrid.	2	K2	CO5
10.	Infer the concept of micro grid.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	The load on a power plant on a typical day is given below: Time: 12 – 5 AM, 5 - 9 AM, 9 AM – 6 PM, 6 – 10 PM, 10 PM – 12 AM Load in MW: 20, 40, 80, 100, 20 Plot the load curve. Find the load factor, diversity factor of the plant, the energy supplied by the plant in 24 hours and the importance of load curve in an electrical power system.	13	K2	CO1
		(OR)			
	b)	A generating station has a maximum demand of 10 MW and the daily load on the station is as follows. Find the load factor, draw the operating schedule and discuss about the importance of load curve in electric power system.	13	K2	CO1

Time	kW	Time	kW
6 AM – 8 AM	3500	5 PM – 7 PM	8500
8 AM – 12 noon	8000	7 PM – 9 PM	10000
12 noon – 1 PM	3000	9 PM – 11 PM	4500
1 PM – 5 PM	7500	11 PM – 6 AM	2000

12.	a)	Sketch the modern layout of steam power plant and discuss the function of each block.	13	K1	CO2
		(OR)			
	b)	Sketch the layout of thermal power plant and the environmental impact of operating thermal power plant.	13	K1	CO2
13.	a)	Brief about the construction and working of solar PV cell with necessary diagrams and related waveforms.	13	K2	CO3
		(OR)			
	b)	Illustrate the block diagram for a grid connected PV system and infer the significance of each block with necessary parameters.	13	K2	CO3
14.	a)	Explain the block diagram of a wind energy conversion system along with the principle of energy conversion.	13	K1	CO4
		(OR)			
	b)	Explain the nature of wind power in the wind and the factors involved in selecting a site for wind energy conversion system.	13	K1	CO4
15.	a)	Discuss the working of a fuel cell with necessary diagrams and equations.	13	K2	CO5
		(OR)			

	b)	Discuss about the mode of operation and control of micro grid.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Illustrate with block diagram the application of wind energy system in water pumping and village electrification.	15	K3	CO4
		(OR)			
	b)	Illustrate with block diagram the application of solar PV system in water pumping and street lighting.	15	K3	CO3