Reg. No.												

Question Paper Code	12280

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Seventh Semester

Electrical and Electronics Engineering

20EEPC701 - DISTRIBUTED GENERATION AND MICROGRID

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	List the various types of renewable energy sources.	2,K1,CO1
2.	What are the components of wind power plants?	2,K1,CO1
3.	What are the performance indices of a solar collector?	2,K1,CO2
4.	Define solar irradiance.	2,K1,CO2
5.	What is the need for hybrid systems?	2,K1,CO3
6.	What are the difficulties associated with ocean thermal energy generation.	2,K2,CO3
7.	Write the importance of IEEE 1547 standards.	2,K2,CO4
8.	What are the different topologies of DG?	2,K1,CO4
9.	List the merits and demerits of DC microgrid.	2,K1,CO5
10.	Write the benefits of AC microgrid.	2,K1,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Discuss the various factors to be considered while selecting WPPs.	13,K2,CO1
		OR	
	b)	Discuss on the availability of renewable energy sources in India.	13,K2,CO1
12.	a)	Explain briefly about the solar thermal power plant. Also discuss its advantages, disadvantages and applications.	13,K2,CO2
		OR	
	b)	List the different types of MPPT algorithm. Explain the incremental conductance MPPT algorithm with flow chart.	13,K2,CO2
13.	a)	Explain the following with schematics. (i) Biomass Energy System. (ii) Energy from Ocean.	 7,K2,CO3 6,K2,CO3

OR

b) Discuss different hybrid systems configurations consisting of wind turbine and solar power plant. *13,K2,CO3*

14. a) Explain briefly about the concept of distributed generation. *13,K2,CO4*

OR

b) Discuss the impact of grid integration with NCE sources on existing power system. *13,K2,CO4*

15. a) Explain the power quality issues associated with grid connected mode in micro grid. *13,K2,CO5*

OR

b) With a neat sketch, explain the typical structure and configuration of DC micro grid**.** *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain in detail with a neat diagram, about islanding issues in the grid. *15,K2,CO4*

OR

b) Discuss in detail the typical architecture of AC micro grid and compare it with utility power grid and list the advantages, disadvantages and applications of micro grid. *15,K2,CO5*