

Code: 20EE6501

III B.Tech - I Semester – Regular Examinations - DECEMBER 2022

**DISTRIBUTED GENERATION AND MICROGRIDS
(HONORS in ELECTRICAL & ELECTRONICS ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.

2. All parts of Question must be answered in one place.

BL – Blooms Level

CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Explain the management and operational issues of a microgrid.	L2	CO1	6 M
	b)	Discuss the concept of microgrid. Show the key differences between microgrid and conventional power plant.	L3	CO2	8 M
OR					
2	a)	Discuss the technical and economic advantages of microgrid.	L2	CO1	8 M
	b)	Interpret the concept of active distribution network.	L3	CO2	6 M
UNIT-II					
3	a)	Interpret about micro CHP systems with emphasis on Stirling engines.	L3	CO2	8 M
	b)	Explain about any three types of PV cells.	L2	CO1	6 M
OR					

4	a)	Interpret about micro CHP systems with emphasis on micro turbines.	L3	CO2	8 M
	b)	Interpret how energy is stored using flywheel and ultra capacitors.	L3	CO2	6 M
UNIT-III					
5	a)	Explain about any three power quality disturbances.	L4	CO3	6 M
	b)	Discuss about any two power conditioning technologies.	L2	CO1	8 M
OR					
6	a)	Explain about Secondary DG system with power quality support.	L4	CO3	8 M
	b)	Explain the issues with premium power in DG integration.	L4	CO3	6 M
UNIT-IV					
7		Explain in detail about basic microsource control functions.	L4	CO4	14 M
OR					
8		Explain about the protection scheme for grid – connected mode.	L4	CO4	14 M
UNIT-V					
9	a)	Interpret the concept of islanding with the help of any two scenarios.	L3	CO5	8 M
	b)	Explain about emerging economic issues in Microgrids.	L2	CO1	6 M
OR					

10	a)	Interpret microgrids economics and traditional power system economics.	L3	CO5	8 M
	b)	Interpret protection of microsources in microgrids.	L3	CO5	6 M