QPC: RN23PHD405 AY 23 Reg. No | | | | | | | | | | |

GIET UNIVERSITY, GUNUPUR – 765022

Ph.D. (First Semester) Examinations, January – 2024

23SPPEEE1011 - Distributed Generation and Microgrid

(EEE)

Time: 3 hrs Maximum: 70 Marks

The figures in the right hand margin indicate marks.

Answer ANY FIVE Questions **(14 x 5 = 70 Marks)**

		Marks
1.a.	How Energy storage elements plays a vital role for energy security in distributed generation?	6
b.	Write short notes on following i. Flywheels ii. Ultra-Capacitors	8
2.a.	What are the key functions of microgrid? Describe its benefits.	6
b.	How the voltage and frequency will affect the performance of grid integration?	8
3.a.	Explain about Stability and power quality issues in grid integration.	6
b.	What is microgrid? Explain the architecture of microgrid with neat block diagram.	8
4.a.	How Electric charging station will improve the performance of microgrid?	4
b.	How active and reactive power control will play a major role in microgrid interfacing? Justify with some examples.	10
5.a.	Explain the regulatory standards of microgrid and how these can be adopted.	7
b.	How distributed generation and microgrid are interrelated? What are the main similarities in distributed generation and microgrid?	7
6.a.	Describe about smart microgrid and what is the difference between smart microgrid and conventional microgrid.	7
b.	Explain about anti-islanding schemes and how it will influence microgrid operation.	7
7.a.	Write short notes on following i. Control of microgrid ii. Security of microgrid	8
b.	Summarize the similarities and dissimilarities of on-grid and off-grid system in distributed generation topology.	6
8.a.	Briefly explain the regulatory standards of microgrid and how these are adopted?	7
b.	What are the fundamental requirements for grid interconnection and describe about the impacts of grid integration?	7

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