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GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

(GIET UNIVERSITY)

Ph.D. (First Semester-Winter) Examinations, June – 2025

23WPPEEE1011 – 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.	Explain about anti-islanding schemes and how it will influence microgrid operation.	8
b.	What is the role of energy storage technologies in microgrid?	6
2.a.	What are the key functions of microgrid and describe its benefits?	8
b.	Explain the difference between AC and DC microgrid.	6
3.a.	How energy storage element plays a vital role for energy security in distributed generation?	7
b.	What is on-grid and off-grid and how these can be integrated into Microgrid?	7
4.a.	How active and reactive power control will play a major role in microgrid interfacing? Justify with some examples	8
b.	Explain about stability and power quality issues in grid integration.	6
5.a.	Describe about smart microgrid and what is the difference between smart microgrid and conventional microgrid.	7
b.	Explain about Microgrid economics and how they will earn carbon credits?	7
6.a.	A microgrid is the future decentralized system- Justify the statement with some examples	8
b.	Write short notes on Ultra-Capacitor.	6
7.a.	What is Microgrid interfacing? What factors will influence the Microgrid interfacing?	8
b.	What is THD? How it will affect the performance of grid integration?	6
8.a.	Briefly explain the regulation standards and framework for distributed generation.	7
b.	What are the disadvantages of conventional power generation and how distributed generation can solve the issue of energy crisis?	7

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