

**Roll No.**

**Total No. of Pages : 01**

**Total No. of Questions : 08**

**M.Tech. (EE) (Sem.-2)**

## DISTRIBUTED GENERATION

**Subject Code : MTEE-204A-18**

**M.Code : 76106**

**Date of Examination : 22-12-2022**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.
3. Unless stated otherwise, the symbols have their usual meanings in context with subject. Assume suitably and state, additional data required, if any.

1. What is distribution generation? What are the main factors which lead to integration of distributed generation into existing power system?
2. Write a short note on following
  - a. Sizing of distributed generators in existing power system.
  - b. Grid integration issues of distributed generation.
  - c. Aggregation of multiple DG system.
3. Explain steady state and dynamic analysis associated with the distributed generation.
4. What is a power converter? Give the reasons leading to the widespread use of power electronic converters. Discuss the different topologies of inverters in grid connected mode.
5. Define the different harmonics associated with the distributed generation. What are the different sources which generates harmonics?
6. Explain how active and reactive power control take place in a typical micro grid. How voltage is controlled in a typical microgrid?
7. Elaborate technical and economic advantages of a typical microgrid. What are the different challenges associated with a microgrid?
8. What are the different transients associated with the microgrids? How micro grids can be protected?

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**