

CBCS SCHEME

15EE833

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Eighth Semester B.E. Degree Examination, Feb./Mar. 2022 Integration of Distributed Generation

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. List out various energy sources used in the distributed generation system. (06 Marks)
b. Explain variation of production capacity of wind power and the Weibull distribution of wind speed. (10 Marks)

OR

- 2 a. List out the properties of solar power. (06 Marks)
b. Briefly explain the different MPPT algorithms incorporated within solar power and current voltage characteristics of PV cell. (10 Marks)

Module-2

- 3 a. With a neat figure explain two possible schemes of interfacing distributed generation to the grid. (08 Marks)
b. Discuss different types of hosting capacity approaches in terms of performance index. (08 Marks)

OR

- 4 a. Define power quality and list out various types of power quality issues in power system. (08 Marks)
b. Explain partial power electronics coupling to the grid. (08 Marks)

Module-3

- 5 a. Briefly explain Meshed operation in overloading and losses. (08 Marks)
b. Outline intertrip scheme used during connecting large generator unit into the network. (08 Marks)

OR

- 6 a. Explain energy management system used during connecting large generator unit into the network. (08 Marks)
b. Discuss need for probabilistic methods for design of distribution feeder and write the probability density and distribution functions. (08 Marks)

Module-4

- 7 a. Discuss how power quality disturbances impact the distributed generation. (08 Marks)
b. Define voltage flicker and explain fast voltage fluctuation in wind power. (08 Marks)

OR

- 8 a. Explain the distributed generation with voltage control used for increasing the hosting capacity. (08 Marks)
b. Discuss how strong feeders increase the hosting capacity. (08 Marks)

Module-5

- 9 a. List out various impact of voltage dips in distributed generation. (08 Marks)
b. What is the maximum permissible voltage distortion according to IEEE standard and briefly explain low frequency harmonics in distributed generation. (08 Marks)

OR

- 10 a. Summarize the high frequency distortion as power quality disturbance. (08 Marks)
b. Explain how to increase the hosting capacity by passive harmonic filters and power electronic converters. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.