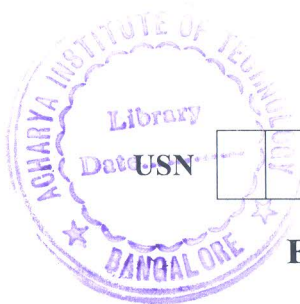


CBCS SCHEME



15EE831

Eighth Semester B.E. Degree Examination, Aug./Sept. 2020 Smart Grid

Time: 3 hrs.

Max. Marks: 80

Note: Note: i) For Regular Students: Answer any FIVE full questions irrespective of modules.
ii) For Arrear Students : Answer any FIVE full questions, choosing ONE full question from each module..

Module-1

- 1 a. List out the comparison between Today's grid and Smart grid. (05 Marks)
b. Explain the contingency studies for the smart grid. (05 Marks)
c. Explain load flow for smart grid design with flow chart. (06 Marks)
- 2 a. What are the rationale for the smart grid. (05 Marks)
b. Explain in detail, five key aspects of smart grid development. (05 Marks)
c. Explain the Roles of stakeholders and their functions. (06 Marks)

Module-2

- 3 a. What are the strengths and weakness of existing voltage stability analysis tools? (08 Marks)
b. Explain in detail voltage stability assessment techniques. (08 Marks)
- 4 a. Discuss optimization of voltage stability constraints through preventive control. (08 Marks)
b. Explain state estimation methods and approach of the smart grid to state estimation. (08 Marks)

Module-3

- 5 a. Explain in detail classical optimization methods. (08 Marks)
b. Explain the distribution system automation requirement of the power grid. (08 Marks)
- 6 a. Explain in detail heuristic optimization methods. (08 Marks)
b. What are the barriers and solutions to smart grid development? (08 Marks)

Module-4

- 7 a. List out and explain the sustainable energy options for smart grid. (08 Marks)
b. Explain in detail storage technologies in power system. (08 Marks)
- 8 a. Explain interoperability and approach to smart grid interoperability standards. (08 Marks)
b. Explain in detail smart grid cyber security. (08 Marks)

Module-5

- 9 a. List out the research areas for smart grid development. (08 Marks)
b. List the research activities in the smart grid. (08 Marks)
- 10 a. What are the approaches for smart grid application? Explain in detail. (08 Marks)
b. List out the challenges and benefits of smart transmission. (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.