

No. of Printed Pages : 03

Roll No.

CC43

M. Tech. EXAMINATION, May 2019

(Third Semester)

(B. Scheme) (Re-appear)

EE(PS)

MPS605B

SMART GRID

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

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P.T.O.

Unit I

1. (a) What are the functions of smart grid ?
Give the advantages of the smart grid ?
(b) Show the components of smart grid using
nice block diagram. Explain the functions
of each component. **15**
2. (a) Give the smart grid control architecture.
Represent software architecture with
detail functions of control architecture.
(b) Discuss PMUs communication interface.
Explain its working. **15**

Unit II

3. (a) Discuss the cyber security strategies to
avoid the smart grid threats.
(b) Explain about the attacks in Electric Grids
cyber Physical system security. Give the
strategy to avoid the attacks. **15**
4. Give the architecture of cyber security
management of electric power grids. Explain
with block diagram the functions of the
different components. **15**

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Unit III

5. Why energy management system is required ?
What are the functions of energy management
system ? Show the EMS with block diagram
and explain functions of the each components. **15**
6. What are the functions of the demand side
management ? How does demand side
management help to avoid peak clipping, valley
filling and load shifting ? **15**

Unit IV

7. Define distributed generation. What are the
advantages of distributed generation ? Explain
the wind power based DGs. **15**
8. What is fuel cell ? Give the working principle
of fuel cell. How the fuel cell can be modeled
mathematically ? Explain the mathematical
model. **15**

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