

Roll No.....

Dr B R Ambedkar National Institute of Technology, Jalandhar

B Tech 6thSemester (Department of Electrical Engineering)

EEPE- 358, Smart Grid

End Semester Examination, May 2021

Duration: 02 Hours Max. Marks: 40 Date: 19 May 2021

Marks Distribution & Mapping of Questions with Course Outcomes (COs)										
Question Number	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>					
Marks	<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>					
CO No.	<u>1</u>	<u>2</u>	<u>4</u>	<u>5</u>	<u>7</u>					
Learning Level	<u>1</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>2</u>					

Note:

1. Attempt all the questions.
 2. Write the answers in hard copy (on A4 sheet) using blue/black pen with your signature on top left and page number on top right corner of each page of the answer booklet.
 3. The time allowed for writing examination is 02 hours. Extra 15 minutes are allowed for preparing the PDF file of Answer Booklet and submitting it.
 4. Follow the instructions regarding submission of answer booklet as issued by the examination section.
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1. (a) Explain what you understand by “Smart Grid”. Compare today’s grid with traditional grid.
(b) What are the most challenging Smart Grid problems in India?
 2. (a) Explain a prototype microgrid test bed system with a drawing. Which of these are made up of renewable energy sources?
(b) Write short notes on the following terms:
 - I. Smart meters
 - II. Smart appliances
 - III. WAMS
 - IV. PMU
 - V. SCADA
 3. (a) Explain voltage stability and voltage collapse.
(b) What are your views on self-healing and distributed storage?

4. (a) What are the economic and environmental consequences of a hybrid electric vehicle?
(b) Why do we want the Smart Grid to help our economy and society in the future?
5. (a) Write a brief note of the following techniques:
 - I. GA
 - II. PSO
 - III. Fuzzy Logic
 - IV. Neural Network
(b) What is the difference between supervised, unsupervised, and reinforcement learning?