

Register No:

Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

EIGHTH SEMESTER B.TECH DEGREE EXAMINATION(R), MAY 2024**Electrical and Electronics Engineering****(2020 SCHEME)****Course Code : 20EET432****Course Name : Smart Grid Technologies****Max. Marks : 100****Duration:3 Hours**

Scientific calculator and statistical table is allowed in the examination hall.

PART A*(Answer all questions. Each question carries 3 marks)*

1. Mention any three advantages of smart grid
2. Highlight the special qualities of a grid that heals itself.
3. Distinguish between 3G and 5G.
4. Discuss the main focus of the IEC 61850 architecture.
5. Explain the function of phasor measurement unit in smart grid.
6. Differentiate between a smart meter and a conventional meter.
7. Describe the various components of an automated substation.
8. State the importance of GIS in smart grid.
9. Differentiate between private and public cloud in smart grid.
10. What is meant by electromagnetic compatibility of a smart grid.

PART B*(Answer one full question from each module, each question carries 14 marks)***MODULE I**

11. Analyze the need for smart grid and Illustrate its functions 14

OR

12. Examine the significance of global regulations in the field of smart grid. 14

MODULE II

13. Differentiate between LAN topologies and data transfer categories. 14

OR

14. Describe how GOOSE improves the substation automation's dependability and efficiency. 14

MODULE III

15. Examine the time synchronization techniques in smart grid 14

OR

16. Discuss the role of IEDs in monitoring and protection of smart grid 14

MODULE IV

17. Examine the role of technology in demand response. Give examples 14
OR
18. Compare DC and AC microgrids 14
MODULE V
19. Explain the classification of power quality issues in smart grid. 14
OR
20. Discuss the relevance of cyber security in the smart grid. Explain about cyber security risk assessment. 14
