B.E. (Part – II) (New) (CBCS) QUESTION BANK
Electrical Engineering
SMART GRID TECHNOLOGY

Four & Six Mark Questions
UNIT-I

1. Define smart grid concept and explain its necessity
2. What is smart grid system?
3. Why implement the Smart Grid now?
4. What is the Smart Grid? Overview of How Indian power market is organized, operated and challenges being faced
5. Explain the stages on evaluation of smart grid.
6. Explain the concept of robust and self-healing grid.
7. Explain functions of smart grid components.
8. Explain how the automatic meter reading can make the system smarter.
9. What are the initiatives taken by Indian economy for smart grid?
10. Describe the opportunities and challenges relate to smart grid.
11. Define smart grid. Differentiate between conventional grid and smart grid.
12. Describe the opportunities and challenges relate to smart grid
13. What are the major points which ar6 the forced drivers for demanding smart grid
14. What is the need of Smart Grid? What will be the components of Smart Grid?
15. What are the different opportunities and Barriers of Smart Grid in India
16. Define Smart Grid and give its functions.
17. Give present development and international policies in smart grid.

UNIT-II

1. Explain smart metering and advantages of it
2. Compare conventional metering and smart metering
3. Explain how the smart meters can be play an important role to make a system smart
4. What is Intelligent Electronic Device (IED)? Explain the functions of IED.
5. Explain the concept of phase measurement unit and also its applications.
6. What are the protocols and benefits of Advanced Metering Infrastructure (AMI)?
7. What is phasor measurement unit? Explain its feature and applications of PMU in power system.
8. Give the brief description of intelligent Electronic Devices (IED).
9. Explain the communication network topologies used for data transmission in advanced metering infrastructure.
10. What are smart energy meters? Explain its function in smart grid.
11. Explain phase measurement unit and its importance in smart grid.
12. Explain the function of IED & their application.
13. Highlight on role of geographic information system (GIS) in smart grid and also give its function.
14. Explain how Smart Appliances can be the part of Smart Grid
15. What is Geographic Information System (GIS)? Explain the components of GIS.
16. Explain wide area measurement system.

UNIT-III

1. What are the challenges which are being faced for electrifying India's rural community?
2. What are the developing technology and systems that will enable smarter rural electrification?
3. What is a Virtual Power Plant? How can a virtual power plant system contribute to a more sustainable world?
4. What is a virtual power plant platform? What is a solar PV virtual power plant?
5. What is a virtual utility? What are the benefits of a virtual power plant?
6. What is solar power?
7. How many solar panels are needed to power my home?
8. Why is solar power the best?
9. What are the 2 main disadvantages to solar energy?
10. What is geothermal energy?
11. What are disadvantages of geothermal energy?
12. What are advantages of geothermal power?
13. What is utility in smart grid?
14. What is a smart utility?
15. What are three main features of smart grid?
16. What are the six key components of a smart grid?
17. What is smart grid maturity model?
18. What does SGMM mean?

UNIT-IV

1. Explain the concept of power quality in smart grid
2. Explain the importance of power quality in smart grid.
3. How the power quality can be improved in smart grid.
4. Explain the web based power quality monitoring system.
5. Highlight the issues related to power quality in smart grid.
6. Describe the power quality issues of grid connected renewable energy resources.
7. Explain Electromagnetic Compatibility (EMC). What is the importance of voltage quality to achieve EMC?
8. Describe the concept of power quality conditioners related to smart grid
9. Illustrate power quality monitoring concept and also explain monitoring considerations.
10. Explain the concept of power quality conditioners related to smart grid.
11. Explain role of AMI in Smart Grid.
12. Explain the concept of Power Quality and EMC in Smart Grid.
13. Explain importance of power quality in smart grid & how it can be improved.
14. Explain the protection and control strategy implemented in smart grid.
15. Explain EMC and its importance in smart grid.
16. Explain the power quality audit and its importance in smart grid.
17. Explain the concept WAN related to smart grid.
18. Write a note on 'Web based Power Quality Monitoring'.
19. Describe web based power quality monitoring

UNIT-V

1. What are power electronics in smart grid?
2. Why power electronics technology is important in the grid connected system?
3. What are power electronics?
4. What energy does smart grid use?
5. How power electronic converters are used in smart grid networks?
6. Why power electronics technology is important in the grid connected system?
7. What is a smart grid how can smart grids be useful?
8. What does a smart power grid do?
9. What is the difference between smart grid and power grid?
10. What is power converter in power electronics?
11. What are the types of converters in power electronics?
12. Where are power electronic converters used?
13. Why power electronics technology is important in the grid connected system?
14. What is EMC in smart grid?
15. What is power electronic converter system?
16. What is difference between STATCOM and DSTATCOM?
17. What are the advantages of STATCOM?
18. What is the main function of DSTATCOM?
19. What is the importance of VI characteristics of STATCOM?

UNIT-VI

1. How does distribution management system work?
2. What is distribution management system software?
3. What is the difference between OMS and DMS?
4. What is distribution system state the function of the distribution system
5. What are the Visualization Techniques used in Smart Grid system.
6. What is energy management system in smart grid?
7. What is energy management system explain in detail?
8. What are the methods of energy management?
9. What are the categories of energy management systems?
10. How the Survey of Home Energy Management Systems in Future will be carried out by using Smart Grid Communications techniques?