P2001

[5059]-598

B.E. (Electrical Engineering) (Elective - IV) (Semester - II)
SMART GRID
(2012 Pattern)

Time : 2.½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:
1) *Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.*
2) *Figures to the right indicate full marks.*
3) *Neat diagrams must be drawn wherever necessary.*
4) *Assume suitable additional data, if necessary.*

Q1) a) Define Smart grid concept and explain its necessity. **[5]**

b) Explain the concept of Resilient and Self Healing Grid. **[5]**

OR

Q2) a) Write a note on, "Real time prizing". **[5]**

b) Describe substation automation. **[5]**

Q3) a) Explain how the reliability of smart grid can be enhanced by integrating Intelligent Electronic Devices (IEDs) in to it. **[5]**

b) Explain how automatic meter reading can make the system smarter. **[5]**

OR

Q4) a) List different smart appliances and describe an integration of smart appliances into grid for Home and Building Automation. **[5]**

b) What is Geographic Information System (GIS) ? **[5]**

Explain the components of GIS.

Q5) a) Explain concept of micro grid, and its need and applications. **[8]**

b) State and explain the issues of interconnecting the micro grid with the utility grid. **[8]**

OR

Q6) a) Write a note on 'protection & control of Microgrid'. **[8]**

b) Compare Microgrid and Smart Grid. **[8]**

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Q7) a) Describe Power Quality Issues of grid connected Renewable Energy Sources. **[8]**

b) Explain the concept of Power Quality and EMC in Smart Grid. **[8]**

OR

Q8) a) Explain importance of power quality in smart grid & how it can be improved. **[8]**

b) Write a note on 'Web based Power Quality Monitoring'. **[8]**

Q9) a) Write a note on, 'IP based protocols'. **[9]**

b) Explain cloud computing and its need. **[9]**

OR

*Q10)*a) Why cyber security is of prime importance in Smart grid & how it can be achieved? **[9]**

b) Explain the role HAN in smart grid. **[9]**

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