

Total No. of Questions : 10]

SEAT No. :

**P6093**

[Total No. of Pages : 2

**[5561]-594**

**B.E. (Electrical Engineering)  
SMART GRID (Elective - IV)  
(2015 Pattern) (Semester - II)**

*Time : 2½ 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) State and Explain the challenges for Smart Grid. [5]  
b) Explain the concept Plug in Hybrid Electric Vehicles. [5]

OR

- Q2)** a) Write a note on, "Real time pricing". [5]  
b) Explain phase measurement unit and its importance in smart grid. [5]

- Q3)** a) Explain how automatic meter reading can make the system Smarter. [5]  
b) Explain how the reliability of smart grid can be enhanced by Integrating IED in to it. [5]

OR

- Q4)** a) List different smart appliances and describe an integration of smart appliances into grid for Home and Building Automation. [5]  
b) Explain about formation of micro grid and its need. [5]

- 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

**P.T.O.**

- Q6)** a) Write a note on 'protection & control of Micro grid'. [8]  
b) Compare Micro grid and Smart Grid. [8]

- Q7)** a) Explain role of AMI in Smart Grid. [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) Explain the protection and control strategy implemented in smart grid. [8]

- Q9)** a) Write a note on, 'IP based protocols'. [9]  
b) Explain cloud computing and its need. [9]

OR

- Q10)**a) Explain Power Quality issues of grid connected Renewable Energy Sources. [9]  
b) Explain the role HAN in smart grid. [9]

