

Total No. of Questions :12]

SEAT No. :

P822

[Total No. of Pages :2

[4659] - 75
BE (Electrical Engg.)
SMART GRID
(2008 Pattern) (Sem.-I) (Elective-II)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer any three questions from each section.*
- 2) *Answers to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of electronic pocket calculator is allowed.*
- 6) *Assume suitable data, if necessary.*

SECTION-I

- Q1)** a) Define and explain the Smart Grid concept and also give its need. [8]
b) Consider a Grid with utility power supply integrated with different renewable energy sources so that it becomes a Smart Grid. [10]

OR

- Q2)** a) Explain National and International policies of Smart Grid. [8]
b) Differentiate between conventional Grid and Smart grid. [10]

- Q3)** a) What do you mean by Real time pricing and why it should be implemented. [8]
b) Explain the phase shifting transformer. [8]

OR

- Q4)** a) Explain smart sensors and how it will reduce the stress on system and make it smart. [8]
b) Give list of different Smart Appliances and explain how they can enhance the system. [8]

- Q5)** a) Write a note on Feeder Automation. [8]
b) Highlight on geographic information system in Smart Grid and also give its function. [8]

OR

- Q6)** a) Explain Wide Area measurement system and how it helps utility. [8]
b) Write a note on phase measurement unit. [8]

P.T.O.

SECTION-II

- Q7)** a) Write a note on formation of Smart grid. [8]
b) Write a note on “plastic and organic Solar cells”. [8]

OR

- Q8)** a) Explain the protection and control strategy implemented in Smart grid. [8]
b) Write a note on Fuel cells its need and applications. [8]

- Q9)** a) Explain the importance of Power Quality and role of EMC in Smart grid. [10]
b) Write a note on Power Quality Audit. [8]

OR

- Q10)** a) Explain how power Quality can be improved in Smart grid by monitoring with the help of web based technology. [10]
b) Explain Power Quality issues of grid connected Renewable Energy Sources. [8]

- Q11)** a) Explain role of AMI in Smart grid. [8]
b) Write a note on “IP based protocols”. [8]

OR

- Q12)** a) Write a note on Neighborhood Area Network. [8]
b) Why cyber security is of prime importance in Smart grid and how it can be achieved. [8]

