

Total No. of Questions : 8]

SEAT No. :

PD4612

[Total No. of Pages : 2

[6404]-118

B.E. (Electrical Engineering)

SMART GRID

(2019 Pattern) (Semester - VIII) (403150C) (Elective-V)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Figures to the right indicate full marks.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Assume suitable data, if necessary.
- 5) Use of non programmable calculator is allowed.

Q1) a) What is GIS? Explain the components of GIS. [7]

b) Draw and explain the functional block diagram of smart substation. [10]

OR

Q2) a) Explain the need of GIS in smart grid. [7]

b) Draw and explain the functional block diagram of smart meter. [10]

Q3) a) Explain with help of neat diagram the interfacing of HAN and NAN in smart grid. [8]

b) Explain the Zigbee protocol architecture. [10]

OR

Q4) a) What is the need of cyber security and how it can be achieved in smart grid. [8]

b) Explain with the help of neat diagram WAMPC. [10]

P.T.O.

Q5) a) Discuss the various microgrid operation strategies with help of neat diagram. [7]

b) Explain with help of neat diagram centralized and decentralized control of microgrid. [10]

OR

Q6) a) Explain microgrid topology with storage technologies with the help of neat diagram. [7]

b) Explain micro grid architecture with help of neat diagram. [10]

Q7) a) Write a note on smart appliances. [8]

b) Discuss power quality issues of grid connected renewable energy sources. [10]

OR

Q8) a) Explain different types of Data Analytics in smart grid. [8]

b) Discuss the different principle areas of home Automation. [10]

