Registration No :

Total Number of Pages : 01

B.Tech
PEE8J001

8th Semester Regular Examination 2018-19
SMART GRID
BRANCH : ELECTRICAL
Max Marks : 100
Time : 3 Hours
Q.CODE : F035
Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1	**Only Short Answer Type Questions (Answer All-10)**	**(2 x 10)**
a)	What is smart grid?	
b)	What are the key features of the smart grid?	
c)	What is the role of GIS in smart grid?	
d)	Define power quality?	
e)	What is the use of WAMS?	
f)	Write the necessity of renewable energy in smart grid?	
g)	Define demand management system?	
h)	What do you mean by NAN?	
i)	What is PHEV and its benefits?	
j)	What is the role of SMES in smart grid?	

Part- II

Q2	**Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)**	**(6 x 8)**
a)	Explain concept of Micro-grid and issues related with utility grid?	
b)	Write short on smart meter and its features?	
c)	Explain the importance of power quality in smart grid and how it can be improved?	
d)	Write a note on protection and control of micro-grid?	
e)	Explain details about feeder automation in smart grid?	
f)	Explain with block diagram of variable speed wind generator?	
g)	Draw the structure of PMU and explain in detail the about the function of PMU?	
h)	What are the functions of intelligent electronic devices as smart grid components?	
i)	Give an overview of advanced metering infrastructure and its integration with home automation?	
j)	Describe the driving elements of substation automation and functions of substation automation system?	
k)	What is DG and write the advantages and disadvantage of distribution generation?	
l)	What is fuel cell and write down any one type with details?	

Part-III
Only Long Answer Type Questions (Answer Any Two out of Four)

Q3	Explain in detail about the architecture of smart grid and distinguish between conventional grid and smart grid?	**(16)**
Q4	Explain the following components used in smart grid communication entities: LAN and WAMS?	**(16)**
Q5	Explain the different storage system used in smart grid and give the comparison among them?	**(16)**
Q6	Explain power quality issues of grid connected renewable energy resources? Also explain web based power quality monitoring system?	**(16)**