



Name:
Enrolment No:

UPES

End Semester Examination, December 2024

Program: MBA Power Management

Semester – III

Subject (Course): Power Sector Automation & Smart Grid

Max. Marks: 100

Course Code : PIPM8014

Duration: 3 hrs.

Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Complete the Abbreviations • SMQTT • CoAP	2	CO1
Q2.	Give 2 examples of Communication protocols	2	CO1
Q3	When was Model Smart grid regulation was framed?	2	CO1
Q4	Who creates standards for smart grid technologies in India?	2	CO1
Q5	What is the role of BEE in Indian energy sector?	2	CO1
Q6	What is Predictive Analytics?	2	CO1
Q7	What is Sensor?	2	CO1
Q8	Give example of 2 OT software.	2	CO1
Q9	10 MVA distribution transformer can supply power how many households in a city?	2	CO1
Q10	Where in India first project of Smart Grid was conceptualized?	2	CO1

SECTION B
4Qx5M= 20 Marks

Q 11	Explain Cost benefit analysis?	5	CO2
Q 12	What is the significance in usage of Cloud based Analytics in Electricity Utility sector?	5	CO2
Q 13	What factors are considered while we have to integrate Solar energy into a smart grid?	5	CO2

Q 14	What are the performance parameters of Smart Grid communication technologies?	5	CO2
SECTION-C 3Qx10M=30 Marks			
Q 15	What are the open source tools and technologies available for Smart Grid. Critically analyze the HDFS and Map Reduce function of HADOOP for Big data analysis	10	CO3
Q 16	Write Short note on Data Protocols with examples	10	CO3
Q 17	Analyze analytics synergy model of a Smart Grid.	10	CO3
SECTION-D 2Qx15M= 30 Marks			
Q18	There are 5 Business Models mentioned under NSGM. Which business model will you suggest implementing (say you are a consultant to a DISCOM) and explain with proper arguments for the following Smart Grid Technology? (Explain anyone) a) Prepaid Metering b) Peak Load Management c) Renewable Energy Integration	15	CO4
Q19	The case on AMI rollout implemented in Ajmer (Rajasthan) with the consumers of Ajmer Vidyut Vitran Nigam Limited (AVVNL) is designed to establish the AMI linked benefits and rollout strategies. The main functionalities proposed for the pilot are AMI installation and loss reduction analytics. The project is being implemented applying pay for service approach (entire implementation is treated as a service and no direct payment for advance meters are required). As per the model, the vendor provides equipment including meters and supporting software, along with a remuneration of monthly service charge. The charges are fixed to cover the capital expenditure of the vendor for a period of four to five years. Critically analyze the Economic/Financial Benefits, Revenue potential and Challenges of the following Smart Grid Technologies a. Automated Distribution Network. b. Smart Meter.	15	CO4