

Name:

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, May 2022**

**Course: Smart & Micro Grid**  
**Programme: M.Tech ES&S**  
**Course Code: EPEC 8005**

**Semester: II**  
**Max Marks:100**  
**Duration : 3 Hrs.**

S. No.		Marks	CO
<b>Section A</b>			
Short Answer Question. Each Question carries 4 marks			
Q.1	What is Smart Grid?	4	CO1
Q.2	List Different types of Relays used in Electrical Power System.	4	CO1
Q.3	List essential features of Smart meter.	4	CO2
Q.4	Which is most preferred mode of digital modulation in the area of Cellular Mobile phone?	4	CO3
Q.5	List main 3 pillars of Smart Grid	4	CO3
<b>Section B</b>			
Each Question carries 10 marks			
Q.6	With neat block diagram, explain 132kV/33kV sub station automation system with the major equipment.	10	CO4
Q.7	With neat block diagram, describe the Smart Meters.	10	CO2
Q.8	“SmartGrid Technology can be a breakthrough in Electrical Power Distribution System”, Justify the statement.	10	CO1
Q.9	Explain Peak Demand Management with help of load curve	10	CO4
<b>Section ‘C’</b>			
Long Answer Question (20 Marks each)			
Q.10	A) With neat Diagram explain the HAN, NAN, LAN, WAN used in AMI B) Explain the 64 bit encryption technology used in cyber security.	10 + 10	CO3
Q.11	A)With neat diagram explain the micro grid architecture B) Briefly explain how Renewable Energy and Energy Storage can affect the health of Distribution Grid	10 + 10	CO5