



**19EE3231 - SMART GRID COMMUNICATION AND CYBERSECURITY**  
Set No: 1

Time:

Max.Marks: 100

S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	Discriminate the IEEE 802 protocols family of standards that were developed to support Local Area Networks	choice Q-2		10Marks	CO1	2	1
2.	Estimate the low-cost, easily accessible infrastructure for data communication and exchange in wide area network (WAN)			10Marks	CO1	2	2
3.	Answer the following questions	choice Q-4		15Marks	CO1	2	1
3.A.	Categorize the components used in Wireless LAN (WLAN) standards explain the each component with legible sketch.			7Marks	CO1	2	1
3.B.	Predict the IEEE standard 802.15.1 protocol used to connect mobile or fixed devices			8Marks	CO1	2	1
4.	Answer the following questions			15Marks	CO1	2	2
4.A.	Explain the need of communications system of a power system networks			7Marks	CO1	2	2
4.B.	Illustrate the typical applications of broad bandwidth communications			8Marks	CO1	2	2
5.	A digital signature allows the signing of digital messages by the Sender-Justify, Also explain various types of digital signatures	choice Q-6		10Marks	CO2	3	2
6.	Illustrate the various tools required for sensing, metering, and measurements at all levels of the smart grid environment			10Marks	CO2	3	2
7.	Answer the following questions	choice Q-8		15Marks	CO2	3	2
7.A.	List out and explain the Possible wired and wireless communications technologies			7Marks	CO2	3	2
7.B.	Deliberate the functions of Public key encryption with RSA algorithm			8Marks	CO2	3	2
8.	Answer the following questions			15Marks	CO2	3	3
8.A.	Describe the components involved in cryptography and possible threats			7Marks	CO2	3	3
8.B.	Illustrate the architectural structures LAN topologies			8Marks	CO2	3	3
9.	Illustrate the Summary of Relevant Standards for Smart Grid Developed by Standards Bodies.	choice Q-10		10Marks	CO3	2	1
10.	Elaborate the applications of Cyber Security Concerns Associated with AMI Systems			10Marks	CO3	2	2
11.	Answer the following questions	choice Q-12		15Marks	CO3	2	2
11.A.	Discuss the various approaches of Interoperability of Smart Grid			7Marks	CO3	2	1
11.B.	Elaborate the Interoperability and Control of the Power Grid to facilitate effective performance of Smart Grid Technology.			8Marks	CO3	2	2
12.	Answer the following questions			15Marks	CO3	2	2
12.A.	Illustrate the special features of GWAC layers			7Marks	CO3	2	1
12.B.	Discriminate the State of theart of Cyber Security for smart grid development			8Marks	CO3	2	2
13.	Tabulate the Cyber Security Possible Targets and Vectors as derived from NISTIR 7628 Infrastructure diagrams.	choice Q-14		10Marks	CO4	3	1
14.	Elaborate the Inherent vulnerabilities in industrial protocols			10Marks	CO4	3	2
15.	Answer the following questions	choice Q-16		15Marks	CO4	3	3
15.A.	Point out and discuss the most common motives for a cyber attack against a grid infrastructure			7Marks	CO4	3	2
15.B.	Briefly explain about denial-of-service attack cyber security			8Marks	CO4	3	3
16.	Answer the following questions			15Marks	CO4	3	3
16.A.	Discriminate the security enclaves to make cyber security realistic method			7Marks	CO4	3	2
16.B.	Illustrate the "3 x 3" cyber security model to Smart Grids			8Marks	CO4	3	3

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