Question Paper Code | 12165

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023
Sixth Semester
Instrumentation and Control Engineering
(Common to Electronics and Instrumentation Engineering)
20ICPC601 - INDUSTRIAL DATA NETWORKS
(Regulations 2020)

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks, K-Level, CO
1.	Define CSMA /CD protocol.	2,K1,CO1
2.	Differentiate between Token Bus and Token Ring.	2,K2,CO1
3.	List the function of repeaters.	2,K1,CO2
4.	Point out the various modes of operation in RS-485.	2,K2,CO2
5.	Define Interchangeability.	2,K1,CO3
6.	Show the difference between HART and field bus.	2,K2,CO3
7.	List the various MODBUS function codes.	2,K1,CO4
8.	What are the two sub layers in the application layer of Foundation Field bus?	2,K1,CO4
9.	Mention the advantages of 'spread spectrum' radio modem.	2,K2,CO5
10.	Define baud rate.	2,K1,CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11.	a)	Explain about OSI model with neat diagram.	13,K2,CO1
		OR	
	b)	Illustrate the operation of command-response mode in detail.	13,K2,CO1
12.	a)	Summarize the various features of standard Ethernets and compare the same with ARCNET.	13,K2,CO2
		OR	
	b)	Explain about the operation modes in RS 485. Can you convert RS 232 to RS485? Justify.	13,K2,CO2
13.	a)	With neat sketch explain the general FIELDBUS architecture.	13,K2,CO3
		OR	

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   ***12165***

b)	Discuss about the HART Protocol implementation of OSI layer Model.	*13,K2,CO3*
14. a)	Describe the MODBUS functions and message format with an application.	*13,K2,CO4*

OR

b)	Explain the communication model and profile of PROFIBUS.	*13,K2,CO4*

15. a)	Explain the components of radio links in detail.	*13,K2,CO5*

OR

b)	Discuss about the ISA standards in detail.	*13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a)	(i) Describe error detection and troubleshooting in PROFIBUS.	*8,K2,CO4*
	(ii)Compare the features of thin and thick Ethernet.	*7,K2,CO5*

OR

b)	(i) Describe about any two common MODBUS function code and Read coil code.	*8,K2,CO4*
	(ii) Write short notes on 10BASE-T.	*7,K2,CO5*