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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.

Semester: VI

Branch: Electronics and Instrumentation Engineering

Duration: 3 hrs.

Course Code: 19EI6PCIDN

Max Marks: 100

Course: INDUSTRIAL DATA NETWORKS

Date: 22.09.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1	a) Describe the different layers of Open System Interconnection (OSI) model of ISO.	10
	b) Explain HDLC Protocol frame format and HDLC transfer modes.	10

UNIT - II

2	a) Discuss Ethernet standards IEEE 802 LANs in detail.	10
	b) Define ARCNET. Also discuss the characteristics features, advantages and disadvantages of ARCnet with respect to Industrial data networks.	10

OR

3	a) Illustrate with suitable diagrams how Network connects to other networks through repeaters, bridges, and routers.	10
	b) Illustrate with an example, a Routing table with the number of hops for communicating with neighboring routers.	10

UNIT - III

4	a) Illustrate the message format in HART protocol. Also list the HART commands and describe HART protocol implementation of OSI layer model.	12
	b) Enlist the salient features and specification of Controller area network CAN protocol.	08

UNIT - IV

5	a) Design frame format for request and response of the function code Read coil code (01) status and Read digital input code (02) in MODBUS.	10
	b) Explain PA,DP and FMS versions of Profibus.	10

OR

6	a) Explain the frame format and advantages of MODBUS.	10
	b) Describe about Profibus communication model and communication objects.	10

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - V

7	a) Describe the components of Radio links.	08
	b) Discuss functions of Modems. Name the modes of radio modems and its features.	08
	c) Describe the need for Industrial Ethernet?	04

SUPPLEMENTARY EXAMS 2023