

U.S.N.								
--------	--	--	--	--	--	--	--	--

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

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.

Branch: Electronics and Instrumentation Engineering

Course Code: 19EI6PCIDN

Course: INDUSTRIAL DATA NETWORKS

Semester: VI

Duration: 3 hrs.

Max Marks: 100

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