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

Autonomous Institute Affiliated to VTU

August 2022 Semester End Main 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: 16.08.2022

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

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| 1 | a) Draw the OSI model and explain the functions performed by each layer of the model? Explain how data is transmitted in this model. | 10 |
| | b) Explain HDLC protocol and compare SDLC? | 05 |
| | c) Describe the CSMA/CD technique with necessary diagram. | 05 |

UNIT - II

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|---|---|----|
| 2 | a) Discuss about the Ethernet standards for network. | 06 |
| | b) Explain bridges and gateways in detail. | 06 |
| | c) Illustrate the structure of serial communication. Point out the various modes of operations in RS-485. | 08 |

OR

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|---|---|----|
| 3 | a) Describe about the RS485 configuration with neat diagram. Tabulate the difference between RS232 and RS 485 standard. | 08 |
| | b) Illustrate the issues involved in the design of bridges in internetworking. | 06 |
| | c) Discuss about ARCnet configuration with neat diagram. | 06 |

UNIT - III

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| 4 | a) Define Fieldbus. With neat sketch explain the general FIELDBUS architecture. | 06 |
| | b) Explain the various communication modes of HART. Discuss about the HART protocol implementation of OSI layer model. | 08 |
| | c) Illustrate various blocks in Interoperability. | 06 |

UNIT - IV

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|---|--|----|
| 5 | a) Describe the MODBUS functions and message format with an application. | 08 |
| | b) Explain the communication model and profile of PROFIBUS. | 06 |

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.

- c) With neat sketch explain the foundation fieldbus in detail. 06

OR

- 6 a) With neat sketch explain the structure of MODBUS protocol. 06
- b) With neat sketch explain the architecture of PROFIBUS protocol stack. 08
- c) Explain in details the FIELDBUS standards. Describe how the Foundation Fieldbus operates. 06

UNIT - V

- 7 a) Discuss the topology used in the Ethernet. Compare 10Mbps Ethernet with 100 Mbps Ethernet in detail. 10
- b) Classify the components of radio link. Write the steps for implementing radio link. 05
- c) Explain the features of radio MODEM in brief. Point out various wireless radio modem families. 05
