

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

Autonomous Institute Affiliated to VTU

**August 2022 Semester End Main 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: 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**

- 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**

- 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**

- 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**

- 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**

- 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

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