

Reg. No.

Question Paper Code

11479

17 DEC 2022

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Seventh Semester

Electronics and Instrumentation Engineering

(Common to Instrumentation and Control Engineering)

EI8751 - INDUSTRIAL DATA NETWORKS

(Regulations 2017)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
|--|-------------------------------|
| 1. Define Flooding. | 2,K1,CO1 |
| 2. List the main reasons for collision on an Ethernet network. | 2,K1,CO1 |
| 3. Differentiate internet and intranet. | 2,K2,CO2 |
| 4. Mention the function of AS-i interface. | 2,K2,CO2 |
| 5. Define Interchangeability. | 2,K1,CO3 |
| 6. Mention the mapping of HART protocol with OSI model. | 2,K1,CO3 |
| 7. Discuss the contents of object dictionary in Profibus. | 2,K2,CO4 |
| 8. Sketch the message structure of MODBUS. | 2,K2,CO4 |
| 9. List the types of 10 Mbps Ethernet. | 2,K1,CO5 |
| 10. Name the modes of Radio modems. | 2,K1,CO5 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Write short notes on Media Access protocol. Explain in detail about CSMA/CD protocol. 13,K2,CO1
- OR**
- b) Explain the functions of various layers of OSI in detail. 13,K2,CO1
12. a) Illustrate the half duplex communication between two PC's using RS 232 interface with a help of sequence diagram. 13,K2,CO2
- OR**
- b) Describe in detail the working Ethernet and ARCNET. 13,K2,CO2
13. a) With neat sketch explain the general FIELDBUS architecture. 13,K2,CO3

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

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OR

- b) Classify the various HART commands and corresponding functionalities and explain any two in detail. 13,K2,C

14. a) With suitable example explain the MODBUS function codes and message format. 13,K2,CO4

OR

- b) Explain Profibus communication model and Communication objects in detail 13,K2,CO4

15. a) Explain the various types and features of 10 Mbps and 100 Mbps Ethernet. 13,K2,CO5

OR

- b) Explain the components of radio links in detail. 13,K2,CO5

PART - C (1 × 15 = 15 Marks)

16. a) (i) Explain the Data highway in detail. 8, K2,CO5

- (ii) With neat sketch explain the architecture of PROFIBUS protocol stack. 7,K2,CO4

OR

- b) (i) Describe Radio modems and different modes of Radio Modems. 8, K2,CO5

- (ii) Describe error detection and troubleshooting in PROFIBUS. 7,K2,CO4