**18EID41**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **January, 2022** | **Electronics and Instrumentation Engineering** | | |
| **Seventh Semester** | **DATA COMMUNICATIONS** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| *Answer Question No.1 compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |
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| 1. | a) | Define a computer network | CO1 |  |
|  | b) | Differentiate switch from hub | CO1 |  |
|  | c) | List the differences between TCP/IP model and OSI model | CO1 |  |
|  | d) | What are the uses of Gateway | CO2 |  |
|  | e) | Differentiate unicast and multicast addressing | CO2 |  |
|  | f) | What are the communication modes of HART | CO2 |  |
|  | g) | What is a fieldbus | CO2 |  |
|  | h) | List the advantages of Profibus | CO3 |  |
|  | i) | List the protocols used in Industrial Ethernet | CO4 |  |
|  | j) | Describe the features of ISA100. | CO4 |  |
| **Unit -I** | | | | |
| 2. | a) | Write a brief note on various network topologies | CO1 | 5M |
|  | b) | Describe the OSI model with neat sketch | CO1 | 5M |
| **(OR)** | | | | |
| 3. | a) | Elaborate HDLC protocol | CO1 | 5M |
|  | b) | Write about medium access protocol. | CO1 | 5M |
| **Unit -II** | | | | |
| 4. | a) | Write about ARCNET. | CO2 | 5M |
|  | b) | Write a short note on Routing algorithms | CO2 | 5M |
| **(OR)** | | | | |
| 5. | a) | Write a short note on standard RS232 communication. | CO2 | 5M |
|  | b) | Describe the features of Devicenet | CO2 | 5M |
| **Unit -III** | | | | |
| 6. | a) | Write a short note on OPC | CO3 | 5M |
|  | b) | Write a detailed note on HART communication protocol | CO3 | 5M |
| **(OR)** | | | | |
| 7. | a) | Write a brief note on Field bus topologies | CO3 | 5M |
|  | b) | Describe MODBUS protocol structure and function codes | CO3 | 5M |
| **Unit -IV** | | | | |
| 8. | a) | Find Distinguish how Industrial Ethernet is different from standard Ethernet | CO4 | 5M |
|  | b) | Diff Write a short note on Radio modems | CO4 | 5M |
| **(OR)** | | | | |
| 9. | a) | Write a detailed note on components of radio communication link | CO4 | 5M |
|  | b) | Write a short note on ISA100 | CO4 | 5M |

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