

30/12/16 FN

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 60538

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Seventh Semester

Electronics and Instrumentation Engineering

EI 2401/EI 71/10133 EI 701 — INDUSTRIAL DATA NETWORKS

(Common to Instrumentation and Control Engineering)

(Regulations 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is packet switching?
2. List the 3 main methods of accessing the communication media.
3. Which topology is popularly used for networks used for control?
4. Write the need for Routers.
5. Write about the command 'Write polling address'.
6. Distinguish between interchangeability and interoperability.
7. List two advantages at foundation field bus.
8. List any two applications of MODBUS and PROFIBUS.
9. List the advantages of radio waves.
10. Define the term modem.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Analyse the difference between the basic control format and extended control format with HDLC? Explain. (8)
(ii) Explain in brief about OSI model with neat diagram. (8)
Or
- (b) (i) Explain about the command-response mode. (8)
(ii) Write short notes on Medium Access Control protocols. (8)
12. (a) Discuss the standard ETHERNET wiring with neat diagrams. (16)
Or
- (b) (i) Draw and explain ARCNET configurations in detail. (10)
(ii) Explain the various requirements for networks for control purposes. (6)
13. (a) (i) Explain the 3 network oriented classes of Fieldbus. (10)
(ii) Define:
(1) Interoperability (3)
(2) Inter Changeability. (3)
Or
- (b) Describe the modes, message format command and instructions of HART communication protocol.
14. (a) (i) Explain the structure of MODBUS protocol. (8)
(ii) Write short notes on classification of profibus. (8)
Or
- (b) (i) Explain about the profibus communication model. (8)
(ii) Write short notes on features of MODBUS. (8)
15. (a) (i) Explain the operation of a Synchronous and Asynchronous modems and their synchronization. (8)
(ii) Brief the concept of clock recovery and equalization in Modem. (8)
Or
- (b) (i) Elucidate the special features of 100 Mbps Ethernet. (8)
(ii) Explain the cabling requirement of Thin Ethernet. (8)