CBCS SCHEME

USN | | | | | | | | | |

15CS46

Fourth Semester B.E. Degree Examination, Dec.2023/Jan.2024
Data Communication

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Define Data Communication. Explain any two fundamental characteristics of Data communication and basic network topology. **(08 Marks)**

b. List out the causes of transmission impairment. Explain the characteristics of analog and digital signals. **(08 Marks)**

OR

2 a. List out the network criteria. Explain TCP/IP protocol suite with neat diagram. **(08 Marks)**

b. Define Line coding and list out its characteristics. Represent the following sequence 1011001011 using polar and bipolar scheme. **(08 Marks)**

Module-2

3 a. Explain PCM and quantization process with steps and example. **(08 Marks)**

b. Explain amplitude shift keying modulation process. **(04 Marks)**

c. Find out bit rate if available bandwidth is 100 kHz which spans from 200 to 300 kHz. Consider ASK with d = 1, r = 1. **(04 Marks)**

OR

4 a. What is multiplexing? Define synchronous TDM with data rate management strategies. **(08 Marks)**

b. What is spread spectrum? Explain FHSS and bandwidth sharing. **(08 Marks)**

Module-3

5 a. Define Cyclic code. Find the codeword using CRC for given data word 1001 and divisor 1011. **(08 Marks)**

b. Define Frames. Explain the steps of flow control at data link layer with diagram. **(08 Marks)**

OR

6 a. Explain Stop – and – Wait protocol with neat diagram. **(08 Marks)**

b. Explain the frame structure of PPP protocol, with neat diagram. **(08 Marks)**

Module-4

7 a. What is channelization? List and explain the channelization protocols. **(12 Marks)**

b. Describe Gigabit Ethernet. **(04 Marks)**

OR

8 a. Describe pure ALOHA and slotted ALOHA. **(06 Marks)**

b. Explain Carrier Sense Multiple Access with Collision Detection (CSMA/CD) **(06 Marks)**

c. Define Bluetooth and its architecture. **(04 Marks)**

Module-5

9	a.	Write a short note on Satellite networks.	(04 Marks)
	b.	Explain the Operation of cellular telephony.	(06 Marks)
	c.	Explain Transition from IPV4 to IPV6.	(06 Marks)

OR

10	a.	Explain the working of mobile IP with phases.	(08 Marks)
	b.	Explain IP datagram header format, with neat diagram and give the description of each field.	(08 Marks)

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