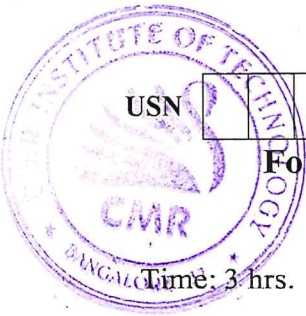USN ☐☐☐☐☐☐☐☐☐☐

17CS46

Fourth Semester B.E. Degree Examination, Aug./Sept.2020
Data Communication

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1	a.	Define Data Communication. With a neat diagram, explain Network topologies.	(05 Marks)
	b.	Explain TCP/IP protocol suite with multiplexing and demultiplexing concepts.	(10 Marks)
	c.	Illustrate line coding techniques. Draw a line coding sequence for 010010 using Polar and Bipolar schemes.	(05 Marks)

OR

2	a.	How do you measure the performance of the network? Explain.	(06 Marks)
	b.	Explain the Transmission impairments of media.	(09 Marks)
	c.	List and explain the Internet Administration.	(05 Marks)

Module-2

3	a.	Write about Pulse Code Modulation (PCM) and discuss the steps involved in the quantization process.	(07 Marks)
	b.	Compare and explain Parallel and Serial data transmission modes.	(07 Marks)
	c.	Explain Amplitude Shift Keying (ASK).	(06 Marks)

OR

4	a.	What is Multiplexing? Explain the wavelength division multiplexing.	(07 Marks)
	b.	Calculate bit rate, if the available bandwidth is 100Khz and which spans from 200 Khz to 300 Khz. Consider ASK with $d = 1$ and $r = 1$.	(04 Marks)
	c.	What is Spread Spectrum? Explain DHSS bandwidth sharing.	(09 Marks)

Module-3

5	a.	How does data words and code words are represented in block coding and explain how can errors be detected and corrected using block coding?	(10 Marks)
	b.	Find the code word using CRC encoder and demonstrate whether the data word is accepted or discarded. The given data is 1001 and the generator is 1011.	(10 Marks)

OR

6	a.	Explain in detail character oriented framing and bit oriented framing with appropriate example.	(10 Marks)
	b.	Explain the PPP frame format.	(10 Marks)

Module-4

7	a.	Explain pure ALOHA and Slotted ALOHA with reference to i) Frame ii) Vulnerable time and iii) Throughputs.	(10 Marks)
	b.	List and explain any one channelization protocol in detail.	(10 Marks)

OR

8 a. Explain Gigabit Ethernet design techniques.   (10 Marks)
   b. Illustrate Blue tooth architecture and its types, with a neat figure.   (10 Marks)

Module-5

9 a. List and explain in detail the types of services provided by the WiMAX.   (10 Marks)
   b. Explain satellite networks and its operations.   (10 Marks)

OR

10 a. Explain the three phases of mobile host to communication with remote host with a suitable diagram.   (10 Marks)
    b. Illustrate the transition strategies from IPV4 to IPV6.   (10 Marks)

* * * * *