CBCS SCHEME

USN | | | | | | | | | | |

15CS46

Fourth Semester B.E. Degree Examination, June/July 2019

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. What is data communication? With a neat diagram, explain the four basic topology. **(06 Marks)**

b. With the help of a diagram, explain the functionalities of each layer of OSI reference model. **(10 Marks)**

OR

2 a. What is the difference between a port address, a logical address and a physical address. **(06 Marks)**

b. What is line coding? Represent the sequence "01001110" using NRZ-L, NRL-I and Manchester scheme. **(06 Marks)**

c. Explain digital signal transmission methods. **(04 Marks)**

Module-2

3 a. Explain the PCM technique used for analog to digital conversion. **(08 Marks)**

b. Explain Amplitude Shift Keying (ASK) and Phase Shift Keying (PSK) modulation process. **(06 Marks)**

c. An analog signal carrier 4 bits per signal element. If 1000 signal elements are sent per second, find the bit rate. **(02 Marks)**

OR

4 a. What is TDM? Explain in detail. **(08 Marks)**

b. Explain circuit switched network with an example and also briefly discuss the phases. **(04 Marks)**

c. Explain in brief frequency hopping spread spectrum technique. **(04 Marks)**

Module-3

5 a. How does data word and codeword represented in block coding and also explain how can error be detected and corrected by using block coding. **(10 Marks)**

b. Given data word 1001 and the divisor 1011:

i) Show the generator of the codeword at the sender site

ii) Show the checking of codeword at the receiver site (assume no error). **(06 Marks)**

OR

6 a. With a neat diagram, explain Go-Back-N Automatic Repeat Request protocol of noisy channel and explain how flow control and error control is achieved. **(10 Marks)**

b. Explain the frame format of HDLC protocol. **(06 Marks)**

Module-4

7 a. What is channelization? List and explain the channelization protocols. (12 Marks)
b. Explain Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA). (04 Marks)

OR

8 a. Describe pure ALOHA and slotted ALOHA. (04 Marks)
b. Explain the different types of addressing mechanism in IEEE 802.11. (08 Marks)
c. Define Bluetooth and explain the architecture of Bluetooth. (04 Marks)

Module-5

9 a. Explain in detail cellular telephony. (10 Marks)
b. Write a note on WI MAX. (06 Marks)

OR

10 a. Explain satellite network and its categories. (08 Marks)
b. Explain in detail IPV6 packet format. (08 Marks)

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