CBCS SCHEME

USN | | | | | | | | | | | **15CS46**

Fourth emester 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 Ibr 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 hopPin 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)**

15CS46

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 1PV6 packet format. **(08 Marks)**

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