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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, NRZ-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)

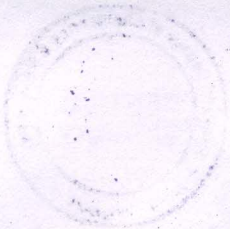
Module-3

- 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)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.



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)
