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10CS55

Fifth Semester B.E. Degree Examination, May 2017
Computer Networks – I

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. What is data communication? What are its important fundamental characteristics? List and explain the five components of a data communication system, with examples. **(12 Marks)**

b. List out the layers in OSI reference model and explain any two layers in detail. **(08 Marks)**

2 a. Explain about the causes of transmission impairment. **(08 Marks)**

b. Briefly explain the three parameters of the sine wave with waveform and write the units for each. **(06 Marks)**

c. An analog signal has a bit rate of 10000 bps and bandwidth of 2000 baud. How many data elements are carried by each signal element? How many signal elements do we need? **(06 Marks)**

3 a. What is spread spectrum? Explain the following techniques for spread spectrum : FHSS ad DSSS. **(14 Marks)**

b. Briefly discuss about delay in virtual circuit networks. **(06 Marks)**

4 a. What is internet checksum? List the steps undertaken by the sender and the receiver for error detection. **(08 Marks)**

b. With a neat diagram, explain CRC encoder and decoder C(7, 4). **(12 Marks)**

PART – B

5 a. Differentiate between character oriented and bit oriented format for framing. **(06 Marks)**

b. Explain the frame formats and control fields for different types of HDLC frames. **(14 Marks)**

6 a. List out the different channelization protocols. Explain CDMA. **(12 Marks)**

b. Explain 802.3 frame format and addressing. **(08 Marks)**

7 a. Describe Bluetooth architecture. **(10 Marks)**

b. List out the connecting devices used in data communication. Explain about repeaters and bridges. **(10 Marks)**

8 a. Explain in detail about classless address. **(10 Marks)**

b. Describe the structure of IPv6 address. **(06 Marks)**

c. Give any two advantages of IPv6 over IPv4. **(04 Marks)**

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