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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 and 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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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.