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Fifth Semester B.E. Degree Examination, June/July 2019
Computer Networks – I

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Explain with a neat diagram the TCP/IP protocol suite and different protocols used in different layers. (10 Marks)
- b. Explain different levels of addressing used in an internet employing TCP/IP protocol with example for each. (10 Marks)
- 2 a. List the factors on which data rate depends upon and describe the two formulas developed to calculate the data rate. (08 Marks)
- b. Calculate the propagation time and transmission time for a 5mB message if eth BW of the optical network is 1mbps. The distance between sender and receiver is 12000kms. (04 Marks)
- c. Represent the given sequences 01101101 using NRZ – L, NRZ – I differential Manchester, AMI and pseudo ternary line coding schemes. (08 Marks)
- 3 a. Explain FDM and synchronous TDM with an example for each. (10 Marks)
- b. Explain briefly QPSK with implementation and constellation diagram. (06 Marks)
- c. Differentiate between circuit switched, datagram network and virtual circuit networks. (04 Marks)
- 4 a. Explain the different types of errors and redundancy. (04 Marks)
- b. What is internet checksum? With an example explain the steps taken by sender and receiver to error detection. (06 Marks)
- c. Find the code word using CRC if dataword is 1010 and generator is 1011 and retrieve the dataword from codeword using decoder. (10 Marks)

PART – B

- 5 a. Explain with neat diagram, design and concept of GO BACK N ARQ protocol. (10 Marks)
- b. What is framing? Explain with diagram character oriented protocol and bit oriented protocols with example. (06 Marks)
- c. Explain the transition phase of PPP. (04 Marks)
- 6 a. Explain CSMA/CA with flow diagram. (07 Marks)
- b. Explain with neat diagram the three popular controlled access methods. (09 Marks)
- c. A pure ALOHA network transmits 200 bit frames on a shared channel of 200kbps. What is the through put if the system produces i) 1000 frames/sec ii) 500 frames/sec. (04 Marks)
- 7 a. Explain hidden and exposed station problems in IEEE 802.11. (06 Marks)
- b. Explain with neat diagram the three major systems of second generation cellular phone system. (08 Marks)
- c. Explain repeaters, bridges and routers and the differences between them. (06 Marks)
- 8 a. Explain in detail the IPV6 packet format with its extension headers. (10 Marks)
- b. Give the comparison between IPV6 and IPV4. (05 Marks)
- c. Write notes on piconet and scatternet Bluetooth network. (05 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, 4Z+8 = 50, will be treated as malpractice.