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17CS46

Fourth Semester B.E. Degree Examination, June/July 2019
Data Communications

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing
ONE full question from each module.**

Module-1

1 a. Explain OSI model with neat diagram. (08 Marks)
   b. With neat diagram, explain the four basic topologies. (08 Marks)
   c. Write in brief the FIVE components of a data communication. (04 Marks)

OR

2 a. What is data communication? Explain different forms of data representation. (08 Marks)
   b. Describe simplex, half duplex and full duplex with respect to data communication. (07 Marks)
   c. What are the factors that determine whether a communication is LAN or WAN? (05 Marks)

Module-2

3 a. Name 3 types of transmission impairment. (08 Marks)
   b. List the characteristics of virtual circuit networks. (04 Marks)
   c. Explain : i) Bandwidth ii) Thoughput iii) Latency. (08 Marks)

OR

4 a. Explain digital to digital conversion. (07 Marks)
   b. What do you mean by amplitude shift keying , Frequency shift keying and phase shift keying? (06 Marks)
   c. Write short notes on :
      i) Shannon capacity and
      ii) Nyquist theorem is communication. (07 Marks)

Module-3

5 a. How does a single bit error differ from burst error? (04 Marks)
   b. Describe channelizing protocol. (07 Marks)
   c. Explain why collision is an issue in Random Access Protocol but not in Controlled Access Protocol? (09 Marks)

OR

6 a. Explain 10 Gigabit Ethernet implementation. (08 Marks)
   b. What are the advantages of dividing Ethernet LAN with bridge? (06 Marks)
   c. Define spread spectrum technique used by bluetooth. (06 Marks)

Module-4

7 a. Explain the advantages of IPV6 compared to IPV4. (06 Marks)
   b. Describe 3 security issues that are applicable to IP protocol. (08 Marks)
   c. Which protocol is the carrier of the agent advertisement and solicitations messages? (06 Marks)

1 of 2

OR

8 a. What are the different types of extension headers in IPV4? Explain. (06 Marks)
   b. Explain the benefits of renumbering and auto configuration. (07 Marks)
   c. Distinguish between compatible and mapped address and explain their applications.
   (07 Marks)

Module-5

9 a. Explain various components of cellular system with neat diagram. (06 Marks)
   b. What is mobile IP? Explain three phases for communication in Mobile IP. (08 Marks)
   c. Explain various ICMPV6 messages. (06 Marks)

OR

10 a. Describe three ways to make transition from IPV4 to IPV6. (06 Marks)
   b. What is cellular telephony? Explain third generation of 3G of cellular telephony. (06 Marks)
   c. Explain the three categories of satellites. (08 Marks)

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