May 2023   IV semester
Computer Networks (BCA-DS-214)

PART-A

Q1 (a) What are the five important components of data communication? (1.5)

(b) Name four topologies of computer networks. (1.5)

(c) Define protocol. (1.5)

(d) Write the importance of CRC in the network. (1.5)

(e) What is Manchester Encoding? (1.5)

(f) What is IEEE 802.4 Standard? (1.5)

(g) Define collision. (1.5)

(h) What is the use of routing table? (1.5)

(i) What determine the sender Window size in TCP? (1.5)

(j) What is the difference between unicast and multicast? (1.5)

PART-B

Q2 (a) What is OSI model? Explain the functions of different layers of the OSI model in detail. [10]

(b) What do you mean by the medium access control? Explain Carrier Sense Multiple Access with Collision Detection (CSMA/CD). (5)

Q3 (a) Given the data word 101001111 and divisor 10111, show the generation of CRC code word at sender side (5)

(b) Differentiate between UDP and TCP. (5)

(c) What is data transmission? Explain the asynchronous and synchronous transmission. (5)

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Q5 (a) Why is flow control needed? Explain the Selective Repeat Automatic Repeat [5] Request (Selective Repeat ARQ) by taking suitable example

(b) A slotted ALOHA network transmits 200-bit frames on a shared channel of 200 [10] kbps. What is the throughput if the system (all stations together) produces

   (i) 1000 frames per second

   (ii) 500 frames per second

Q6 (a) Write short note on architecture and layers of Frame relay and ATM [10]

(b) Differentiate between hubs, switches and bridges. [5]

Q7   Write short notes on(any three): [15]
       i)   GO Back NARQ
       ii) ARP and RARP
       iii) DHCP,ICMP and IGMP
       iv) Discuss about quality of services

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