Jan 2022
B.Tech(IT) - V SEMESTER
Computer Networks (PCC-IT-501)

Time: 90 Minutes   Max. Marks:25

Instructions: 1.   *It is compulsory to answer all the questions (1 mark each) of Part -A in short.*

2.   *Answer any three questions from Part -B in detail.*

3.   *Different sub-parts of a question are to be attempted adjacent to each other.*

PART –A

Q1 (a) If link transmits 4000 frames per second, and each slot has 8 bits, what is the   (1)
transmission rate of circuit in TDM?

(b) Five channels each with 200 KHz Bandwidth, are to be multiplexed together.   (1)
What is the minimum bandwidth of the link if there is a need for a guard band
of 20 KHz between the channels to prevent the interference?

(c) Let the size of congestion window of a TCP connection be 32 KB when a   (1)
timeout occurs. The round trip time of the connection is 100 msec and the
maximum segment size used is 2 KB. Find the time taken (in msec) by the TCP
connection to get back to 32 KB congestion window.

(d) Differentiate between simple bridge and transparent bridge.   (1)

(e) Given a remainder of 111, a data unit of 10110011, and a divisor of1001, is   (1)
there an error in the data unit?

(f) List the difference between a port address, a logical address, and a physical   (1)
address?

(g) Distinguish between a circuit-switched network and a packet-switched network.   (1)

(h) Differentiate between packet filtering and proxy firewall   (1)

(i) Mention the port number, where FTP server listens for a connection.   (1)

(j) In Go-Back-N ARQ, if 5 is the number of bits for the sequence number, then   (1)
what must be the maximum size of the send window?

PART –B

Q2 (a) How do guided media differ from unguided media? Which one is faster? Give   (3)
reasons.

(b) For each of the following four networks, discuss the consequences if a   (2)
connection fails.
(i)Five devices arranged in a mesh topology.
(ii)Five devices arranged in a star topology (not counting the hub).
(iii)Five devices arranged in a bus topology.
(iv)Five devices arranged in a ring topology.

Q3 (a) Discuss sliding window Protocol in data link control? (2)

(b) Given the dataword 1010011110 and the divisor 10111. Show the generation of the (3)
codeword at the sender site using CRC method (using binary division).

Q4 Discuss the concept of traffic shaping. Illustrate the techniques to shape traffic. (5)

Q5 (a) Explain difference between ARP and RARP network layer protocol. (3)

(b) In a block of addresses, we know the IP address of one host is 182.44.82.16/26. (2)
What are the first address (network address) and the last address in this block?

Q6 Write short note on (2.5)
(a) DDNS (2.5)
(b) FTP

****