

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-15

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

V SEMESTER B.TECH, CYCLE TEST 1

CSPC53 COMPUTER NETWORKS

DATE: 29/08/2024

Answer All Questions

MAX. MARKS: 20

1. A broadcast network is one in which a transmission from any one attached station is received by all other attached stations over a shared medium. Examples are a bus-topology local area network, such as Ethernet, and a wireless radio network. Discuss the need or lack of need for a network layer in a broadcast network. (3)
2. Discuss the pros and cons of handling fixed size and variable size frames while doing framing. (3)
3. In a CRC error-detecting scheme, assume the divisor as x^4+x+1 and the data bits as **10010011011**. Suppose the channel introduces an error pattern **1000100000000000**. What is received? Can the error be detected? Justify your answer. (Use polynomial representation for solving this problem). (4)
4. With all the required steps, illustrate the detection and correction of burst error of length 2 in the given data: **101110010**. (4)
5. Node A sends data to node B with 40Mbps data rate. The propagation speed is $5\mu\text{s}/\text{km}$ and packet size is of 1 Kilobyte. The link is full duplex. The transmission delay is two times of the propagation delay. What is the distance between A and B? (3)
6. Draw the flowchart for CSMA/CA technique. Discuss the necessity of having IFS waiting period. (3)