



V SEMESTER B.TECH (COMPUTER SCIENCE AND ENGINEERING) DEGREE EXAMINATIONS, NOV-2019 SUBJECT : COMPUTER NETWORKS(CSE 3103) REVISED CREDIT SYSTEM DATE: 18-11-2019

TIME:03 HOURS

MAX.MARKS:50

Instructions to Candidates:

- Answer ALL FIVE FULL questions.
- Missing data, if any, may be suitably assumed.
- 1A. In an internet, we change the LAN technology to a new one. Which layer in the 2M TCP/IP protocol suite need to be changed? Explain.
- 1B. UDP is an unreliable protocol. Why UDP computes checksum? Explain how checksum is computed for UDP datagram. 4M
- 1C. How cookies are created, stored and used in websites? Explain with a diagram, how 4M an online electronic store can benefit from cookies.
- 2A. What are the issues in client logging into the remote server when the character represenations are different? How Telnet resolves this? Explain with suitable diagram.
- 2B. Explain how retransmission Timeout (RTO) is computed in TCP. In a connection 2M assume the old $RTT_D=8$ ms. If the new $RTT_S=20$ ms and new $RTT_M=25$ ms, what is the new value of RTT_D ? Set $\beta=0.25$.
- 2C. An acknowledgement number in Go-Back-N protocol defines the next packet ex 4M pected, but an acknowledgement number in the Selective-Repeat Protocol defines the sequence number of the packet to be acknowledged. Explain the reason.

- 3A. Suppose three hosts inside a private network with adress 172.18.3.1, 172.18.3.2 and 4M 172.18.3.3 need to access the HTTP server on external host 25.8.3.2. Draw a Five column Translation table and explain its working.
- 3B. Assume a company has three offices: Central, East, and West. The Central office is connected to the East and West offices via private, point-to-point WAN lines. The company is granted a block of 64 addresses with the beginning address 70.12.100.128/26. The management has decided to allocate 32 addresses for the central office and divides the rest of the addresses between the two offices. Give the complete network design.
- 3C. In a CRC based error detection system the code word received is 1000110 and the 2M generator polynomial used at the sender is 1011. Check whether any transmission error occurred or not during transmission.
- 4A. Assume a LAN in which all the hosts are connected by a common coaxial cable. 5M With a flow diagram explain a carrier sense media access protocol with collision detection ability that controls how the media is accessed by a host for data transfer.
- 4B. Explain why collision is an issue in random access protocol but not in controlled 3M access protocol. With a diagram explain the working of reservation access method.
- 4C. In a CSMA/CD network with a data rate of 10 Mbps, the minimum frame size is found to be 512 bits for the correct operation of collision detection process. What should be the minimum frame size if we keep the size of the network constant, but increase the data rate to i) 100Mbps ii) 10Gbps.
- 5A. With a frame exchange time line diagram, explain how data is transmitted for a 5M particular duration by a host and how hidden station problem is addressed in a wireless network?
- 5B. Assume a user is granted with a channel that has a bandwidth of 3 KHz for data 3M transmission with a signal to noise ratio is 3162. What is the theoretical highest bit rate that user can achieve? Give your suggestions with justification if he has to send the data faster than this.
- 5C. Briefly explain the cause and the effect of attenuation and distortion during data 2M transmission.