

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-3 EXAMINATION- May -2018
B.Tech VI Semester (CSE & IT)

COURSE CODE: 10B11CI611

MAX. MARKS: 35

COURSE NAME: Computer Networks

COURSE CREDITS: 04

MAX. TIME: 2:00 HRS

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Ques 1. (a) [1 + 1 = 2 Marks] Discuss the error and flow control mechanism for TCP.
 (b) [2+3 = 5 Marks] Compare and contrast TCP segment with SCTP packet in detail? Also discuss an SCTP Associations (connection, data transfer and termination) with suitable diagram?

Ques 2. (a) [1 + 1 = 2 Marks] Explain the design issues for network and transport layer.
 (b) [4 Marks] A 1-km-long, 10-Mbps CSMA/CD LAN (not 802.3) has a propagation speed of 200 m/ μ sec. Repeaters are not allowed in this system. Data frames are 256 bits long, including 32 bits of header, checksum, and other overhead. The first bit slot after a successful transmission is reserved for the receiver to capture the channel in order to send a 32-bit acknowledgement frame. What is the effective data rate, excluding overhead, assuming that there are no collisions.

Ques 3. (a) [2 Marks] Discuss the key terms such as message complexity, speed of convergence and robustness of distance vector routing and link state routing algorithm with suitable example?
 (b) [4 Marks] Consider the network shown below (Fig. 1) and assume that each node initially (stage zero) knows the costs to each of its neighbors. Apply the distance vector algorithm and compute new distance table entries (up to second stage), and inform their neighbors of any changes in their new least path costs.

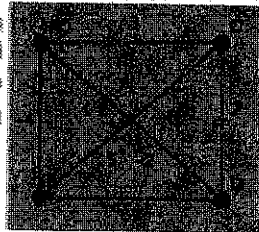


Fig. 1: The Network

Ques 4. (a) [2 Marks] Discuss the important differences between traffic shaping algorithms?
 (b) [4 Marks] A leaky bucket is at the host network interface. The data rate on the network is 2MByte/s and the data rate on the link from the host to the bucket is 2.5Mbyte/s. Suppose the host has 250 Mbytes to send onto the network and it sends the data in a burst. What should be the minimum capacity of the bucket (in bytes) in order that no data is lost? Suppose the capacity of the bucket is 100M bytes. What is the longest burst time from the host in order that no data is lost?

Ques 5. (a) [10 Marks] Write the short notes on following

- a. File Transfer Protocol (FTP)
- b. Digital Signatures
- c. Transition from IPV4 to IPV6
- d. ICMPv6