

Q. P. Code : 13298**(3 Hours)****(Total Marks: 80****N.B. :**

- (a) Question No.1 is compulsory.**
- (b) Total 4 questions need to be solved.**
- (c) Attempt any three questions from remaining five questions.**
- (d) Assume suitable data wherever necessary, justify the same.**

- 1.a** Explain any one method to improve QoS. [5]
- 1.b** In the TCP state transition diagram, why do we have the TIME-WAIT state and why is its value equal to 2MSL? [5]
- 1.c** Why SSH is preferred over TELNET? Explain. [5]
- 1.d** Explain the fields that are related to fragmentation and reassembly of an IPv4 datagram. [5]
- 2.a** Discuss how Hypertext Transfer Protocol (HTTP) is used to access data on the World Wide Web. [10]
- 2.b** Explain FTP in detail. Mention its limitation and justify how these limitations are overcome in TFTP. [10]
- 3.a** Explain how TCP controls the congestion in the network using different strategies. [10]
- 3.b** An ISP is granted a block of addresses starting with 150.80.0.0/16. The ISP wants to distribute these blocks to 2600 customers as follows: [10]
 - The first group has 200 medium-size businesses; each needs approximately 128 addresses.
 - The second group has 400 small businesses; each needs approximately 16 addresses.
 - The third group has 2000 households; each needs 4 addresses.

Design the sub blocks and give the slash notation for each sub block. Find out how many addresses are still available after these allocations.
- 4.a** Explain in detail RTP packet format. [10]
- 4.b** Explain the transition states of TCP with a neat diagram. [10]
- 5.a** Explain how voice is transmitted over packet switched network using H.323. [10]
- 5.b** Explain various characteristics of real-time audio/video communication. [10]
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 - (a)** Discuss the different types of addresses used in the TCP/IP protocol. [5]
 - (b)** The transport layer is responsible for process-to-process delivery of the entire message. Justify your answer. [5]
 - (c)** Discuss DHCP operation when the client and server are on the same network or on different networks. [5]
 - (d)** Discuss the two message access agents in brief [5]