C.U.SHAH UNIVERSITY
Summer Examination-2018

Subject Name: Next Generation Networks

Subject Code: 4TE08NGN1   **Branch: B.Tech (CE)**

Semester: 8   **Date: 01/05/2018**   **Time: 02:30 To 05:30**   **Marks: 70**

Instructions:
(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1   **Attempt the following questions:**   **(14)**

    a)   What is sub netting?
    b)   What is static and dynamic routing?
    c)   What is Multiplexing and De-multiplexing?
    d)   Explain buffering?
    e)   What is DNS?
    f)   State the differences between TCP and UDP.
    g)   What is a socket?
    h)   The size of IP address in IPv6 is_____
    i)   The entire hostname has a maximum of
        a) 255 characters   b) 127 characters   c) 63 characters   d) 31 characters
    j)   In the IPv4 addressing format, the number of networks allowed under Class C addresses is
        a) 2^{14} b) 2^7 c) 2^{21} d) 2^{16}
    k)   Which one of following socket API functions converts an unconnected active TCP socket into a passive socket?
        a) connect   b) listen   c) bind   d) accept
    l)   IPv6 does not use _____ type of address
        a) broadcast   b) multicast   c) anycast   d) Unicast
    m) Communication offered by TCP is
        a) full duplex   b) half duplex   c) semi duplex   d) byte by byte
    n)   Header size of the ICMP message is
        a) 8 bytes   b) 8 bits   c) 16 bytes   d) 16 bits

Attempt any four questions from Q-2 to Q-8

Q-2   **Attempt all questions**
- **(a)**   What Is A Daemon? Explain Syslog Procedure with suitable diagram.   **07**
- **(b)**   Explain State Transition diagram for Transport layer.   **07**

Q-3   **Attempt all questions**
- **(a)**   Describe working of Routing information protocol (RIP).   **07**
- **(b)**   Explain IP Addressing using Classful and Classless Addresses.   **07**

Q-4   **Attempt all questions**
- **(a)**   List and explain four application layer protocol of TCP/IP protocol suite.   **07**
- **(b)**   Write short note on OSPF (open shortest path first) algorithm.   **07**

Q-5   **Attempt all questions**
- **(a)**   Explain TCP Client Server Procedure with suitable diagram.   **07**
- **(b)**   What is the difference between the delivery of a frame in the data link layer and the delivery of a packet in the network layer? Explain the functionalities of the network layer.   **07**

Q-6   **Attempt all questions**
- **(a)**   Explain TCP Socket? List down the advantage of using socket interface.   **07**
- **(b)**   Show & explain various fields of IP (internet protocol) Datagram.   **07**

Q-7   **Attempt all questions**
- **(a)**   Compare IPV4 and IPV6 with their header format.   **07**
- **(b)**   Compare Intra domain and Inter Domain routings protocols.   **07**

Q-8   **Attempt all questions**
- **(a)**   Explain functionality of ARP and RARP protocol.   **07**
- **(b)**   1. What are the Network ID, Broadcast Address, and first & last valid IP on the sub network that the host 192.168.1.15/26 belongs to?   **07**
  2. How many subnets and hosts per subnet can you get from the network 172.168.21.0 255.255.255.224?