Dr. Pushpender Kumar Dhiman (M) 28/11/17

Roll No..... F-6 (34) R.3,6

National Institute of Technology

Name of Examination: Final Examination

Branch: M. Tech. (Mobile Computing) **Semester:** 1st
Couse Name: Topic in Computer Networks **Course Code:** CSE – 600
Time: 3 Hours **Max. Marks:** 60

Q. 1 Make a table to compare and contrast neighbour-discovery messages in ICMPv6 with the corresponding messages in version 4. (6)

Q. 2 An organization is granted the block 16.0.0.0/8. The administrator wants to create 500 fixed length subnets (10)

a) Find the subnet mask
b) Find the Number of addresses in each Subnet
c) Find the first and last address in subnet 1
d) Find the first and last address in subnet 500

Q. 3 An ISP is granted a block of aggress starting with 120.60.4.0/20. The ISP wants to distribute these blocks to 100 organizations with each organization receiving 8 address only. Design the subblocks and give the slash notation for each subblock. Find out how many addresses are still available after these allocations. (10)

Q. 4 Explain the header format for IPv6. Compare IPv4 with IPv6. (6)

Q. 5 Provide the following parameter values for each of the network classes A, B, and C. Be sure to consider any special or reserved addresses in your calculations. (10)

a. Number of bits in network portion of address
b. Number of bits in host portion of address
c. Number of distinct networks allowed
d. Number of distinct hosts per network allowed
e. Integer range of first octet

Q. 6 An IP datagram is to be fragmented. Which options in the option field need to be copied into the header of each fragment, and which need only be retained in the first fragment? Justify the handling of each option. (6)

Q. 7 What are the limitations and Challenges of WLAN? (6)

Q. 8 Illustrate and Explain UPD and TCP, also explain packet format of both. (6)