EECS 563

Homework #7

1. A host IP address is 129.5.32.65 with a subnet mask of 255.255.255.248.

a) How many hosts can be supported on the same network as this host?

b) What is the network id?

c) What is the host id?

d) Write the subnet mask of 255.255.255.248 in /n format.

e) What is the broadcast address on this network?

f) What is the Host Address Range, i.e., the range of IP addresses, for this subnet?

2. A company is assigned an address space with a network prefix of 129.10.10.0/24. The company has 4 departments, each with the following number of hosts:

Departments	# Hosts
A	66
B	27
C	19
D	5

Design a subnetting address scheme for this company. That is, specify a subnet address for each department.

Specify the subnet address for each department /n format and provide the associated subnet mask.

Use http://www.subnet-calculator.com/ to find the Host Address Range i.e., the range of IP addresses, for each of these subnets and the broadcast address.

3. Internet Protocols

a. Host A was just attached to a LAN. What protocol is used to assign Host A an IP Address?

b. Host A and a router are on the same network, Host A knows the IP address of the router, however for Host A to send packets to the Internet, Host A must use router's MAC address. What protocol is used to assign Host A to learn router's MAC address?

c. Host A knows the name, of the destination host on the Internet, e.g., billing.company.com. What system is used by Host A get the IP address for the destination host?

4. Tunneling:

a. What is tunneling ?

b. Tunneling can be used to establish secure connections over untrusted or public networks. TRUE or FALSE

c. Provide an example of the application of tunneling

5. A packet arrives at router A with a destination address of 129.236.1.5 and a TTL=2, what does router A do with this packet? Router A sends this packet on to router B what does router B do with this packet.

6. IPv4 checks for errors in only the payload. TRUE or FALSE