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CS610-COMPUTER NETWORKS
FINAL SPRING 2007

(1):Given the IP address 18.250.31.14 and subnet mask 255.240.0.0, what is the subnet address?

- 18.9.0.14
- 18.240.0.0
- 18.31.0.14
- 18.0.0.14

Answer the following questions:

a. Why would an internet need an Autonomous System? [3]
b. What is the difference between an interior gateway protocol and an exterior gateway protocol? Name an example of each [4]
c. What is the difference between unicast routing and multicast routing? [3]

Answer the following questions:

i. What is meant by Virtual Private Networks and how guarantee absolute privacy of packets in it? [3]

ii. What information are obtained from network sniffer and in which mode Network sniffer operates? [3]

iii. How does a bridge know on which segment a destination computer is attached?[2]

iv. What is the difference between private network and public network? [2]

Suppose an ISP has class B address i.e. 130.8.0.0/16. If the ISP has three customers with only six computers each then determine the following parameters:

a. Network prefixes assigned to three customers?[3]
b. Address Mask for each Network prefix?[3]
c. Lowest Host Address and Highest Host Address of one customer?[4]

In IP datagram header format, what is the value of the data field given H.LEN value of 12 and TOTAL LENGTH value of 40,000?

- 39,952
- 10,048
- 40,012
- 39,988

Which of the following is an exterior routing protocol?

- RIP and OSPF
- BGP
- OSPF
- RIP

Given are the five networks connected to each other via routers.

Networks1 is connected to Network 2 through R1-2, Network 2 is connected to the Network3 through R2-3 and so on. W represents the weights between network nodes. Host A belongs to Network 1 whereas Host B belongs to Network 5

The MTU size of each network is as follows

Network No.	**MTU size**
1	256 bits
2	16 bits
3	32 bits

4	16 bits
5	8 bits

Host **A** sends a datagram of size 256 bits to Host **B**.

a. Find out which path will the datagram be adopting in reaching to the destination **B** by Distance Vector Routing algorithm. [4]
b. Which of the routers in the path needs to fragment **t**he datagram? [4]
c. The original datagram is finally split into how many datagrams to reach at the destination? [4]

An ARP reply is ------- to ----

- Unicast: one host
- Unicast: all hosts
- Multicast: one host
- Broadcast: all hosts