Question 1

1 / 1 pts

Consider the following forwarding table below.

Prefix	Outgoing interface
172.58.128.0/18	m1
172.58.128.0/20	m2
172.58.160.0/20	m3
0.0.0.0/0	m0

Specify the outgoing interface for an IP packet with the destination address 172.58.143.27.

A. m0
B. m1
C. m2
D. m3

Question 2

0 / 1 pts

You have the two subnets 123.12.2.0/24 and 123.12.3.0/24 and you plan to aggregate the two. Which of the the following statements is correct?

A. They can be aggregated to 123.12.3.0/23
B. They can be aggregated to 123.12.2.0/25
C. They can be aggregated to 123.12.2.0/23
D. None of the alternatives works

Question 3

1 / 1 pts

Which of the following statements about DHCP (Dynamic Host Configuration Protocol) is *not* true?

A. To configure a computer's network settings through DHCP, there should be a DHCP server available on the network
B. DHCP can be used to inform a computer about which router to use when sending traffic to an address outside the subnet
C. DHCP can be used to inform a computer about which wireless access point to use when sending traffic to the fixed network
D. DHCP can be used to inform a computer about which IP address it should use

Question 4

1 / 1 pts

Which of the following statements about NAT (Network Address Translation) is *not* correct?

A. If you use NAT between your local network and your internet provider, it is enough to have only one public IP address even though you have several computers connected to your local network.
B. If you use NAT between your local network and your network provider, you have to use a proxy server at the provider to make a server on your local network reachable to clients outside your local network.
C. If you use NAT between your local network and your Internet provider, you can renumber your addresses on your local network without notifying your operator and still be able to access the Internet.
D. If you use NAT between your local network and your Internet provider, you can change to another Internet operator without having to renumber the addresses on your local network

Question 5

1 / 1 pts

Consider a large autonomous system with over 100 routers. You would like to be able to configure link costs to control the traffic flows inside the autonomous system. Which of the following protocols would be most suitable for routing inside this autonomous system?

A. RIP
B. BGP
C. Static routing would be more suitable in this case
D. OSPF

Question 6

1 / 1 pts

MAC addresses (or link-layer addresses) are used at the link layer to identify devices. Which of the following statements about link layer addressing *is false*?

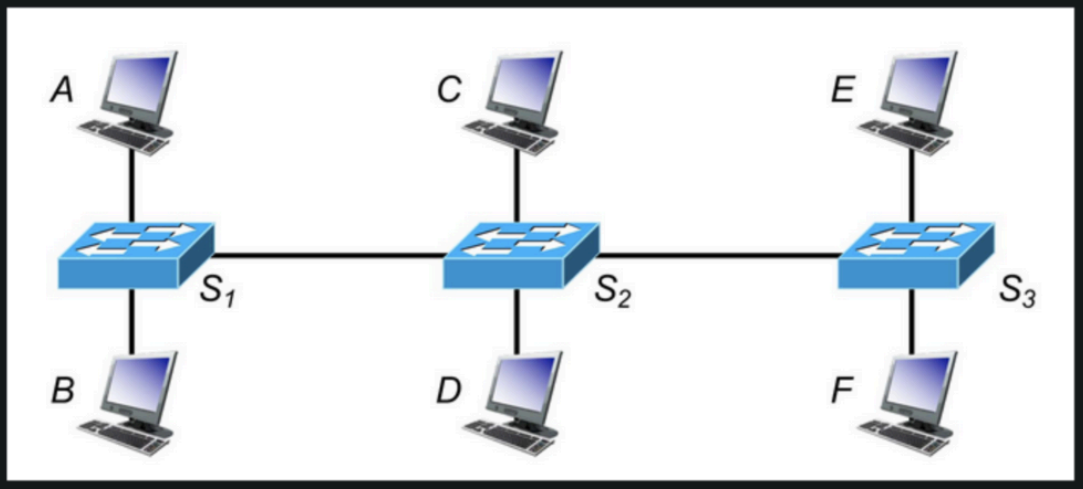
A. MAC addresses are assigned to network interfaces, so a device with multiple network interfaces has multiple MAC addresses.
B. MAC addresses are organized hierarchically. A bit-mask(network mask) determines what addresses are present on a network.
C. MAC addresses are permanent, assigned by the manufacturer. They will not change if a device is moved.
D. The MAC address space is flat(non-hierarchical) and MAC addresses are unique, which makes it possible to move a device between networks without reconfiguration.

Question 7

1 / 1 pts

Consider the network in the figure below with six computers (A–F) and three switches (S_1–S_3). Suppose that computer D sends a message to computer A, which responds with a message back to D. After that, computer B sends a message to computer C.

Assuming that all address tables initially are empty, what MAC addresses will be in the address table of switch S_3?



A. A,D
B. A,B,D

C. B,D
D. A,B,C

Question 8

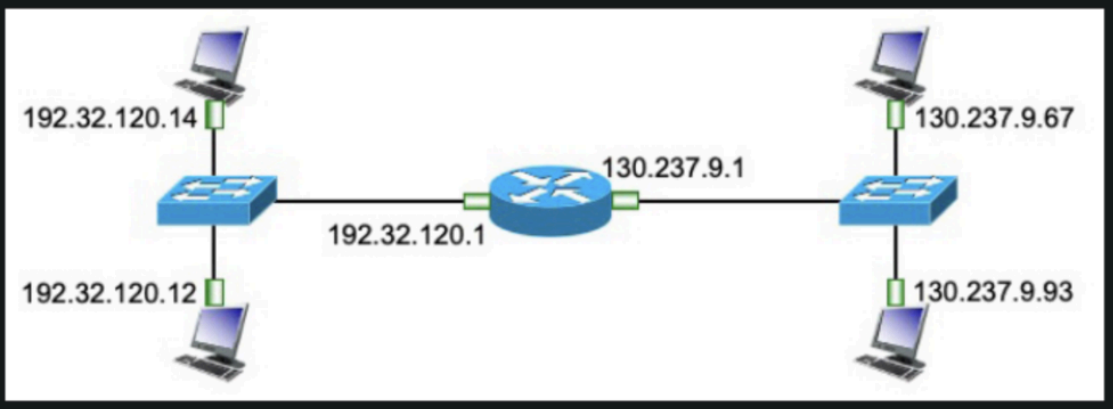
1 / 1 pts

CSMA (Carrier Sense Multiple Access) is a principle for medium access. CSMA/CA and CSMA/CD are two variants of CSMA, where "CA" stands for "Collision Avoidance" and "CD" for "Collision Detection". Which of the statements below *is false?*

A. CSMA/CD relies on the assumption that every node can detect traffic between any other nodes.
B. When a collision occurs in Ethernet, which implements a variant of CSMA/CD, there is a random waiting time before the next attempt to send.
C. For CSMA/CD to work, there needs to be a certain minimum distance between the nodes in the network. CSMA/CA does not have such a limitation.
D. CSMA/CA uses acknowledgements to indicate successful transfer of a frame, while CSMA/CD does not.

Consider the following network consisting of four computers, two switches, and one router.

The computer with IP address 192.32.120.12 sends an IP packet with a request to the computer with IP address 130.237.9.93, which sends back an IP packet with a response.



After the transaction, which IP address(es) can be found in the ARP table of the computer with IP address 192.32.120.12? Assume that the ARP table was empty before the transaction.

A. 130.237.9.93
B. 192.32.120.1, 130.237.9.1 and 192.237.9.93

C. 192.32.120.1 and 130.237.9.93
D. 192.32.120.1

Question 10

1 / 1 pts

Eight bits of data are transmitted over a link where bit errors are likely to occur. The transmission is protected by an additional parity bit for error detection, where the error detection algorithm is *even parity*.

Consider the transmission of the eight data bits "1100 0101". The additional parity bit is transfered after the eight data bits, so nine bits are transferred in total. During the transmission, an error occurs affecting one or more bits. Which of the following erroneous transmissions would be detected by the receiver, if the receiver gets the following nine bits (the last bit is the parity bit)?

A. 0100 0001 0
B. 1110 0101 0
C. 1000 1111 1
D. 1100 0111 1