QUESTION 1

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The sending mode in which a sender wants to deliver a message to all hosts in a network:

- ○ I. Broadband
- ○ II. Multicast
- ○ III. Unicast
- ◉ IV. Broadcast

QUESTION 2

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The networking device that forwards signals received from one of it's ports to all other ports without being able to understand any control information included in the transmitted signals (a device that can't split the collision domain of connected hosts)

- ◉ I. A hub
- ○ II. A switch / A bridge
- ○ III. An access point
- ○ IV. A router

QUESTION 3

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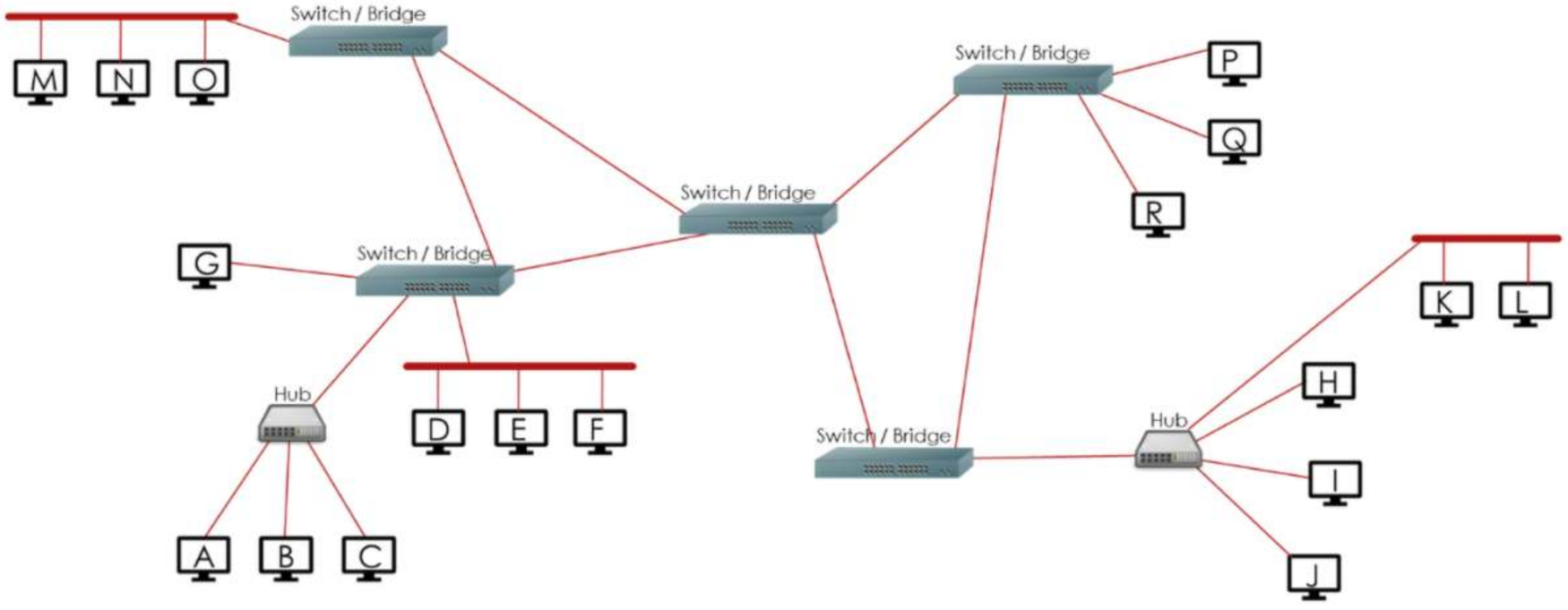

In the switched network represented by the figure above. If host G sends a frame to host P, which of the following will see the frame beside P? (Assume that all switches have already learned the addresses of all hosts in the network)

- I. Host D
- II. Host R
- III. Both hosts mentioned in the previous choices
- IV. None of the choices are correct

QUESTION 4

0.67 points Saved

Which of the following networking technologies uses the circuit switching approach?

- Ethernet
- ATM
- IP
- None of the above

QUESTION 5

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The act of not receiving any newly arriving packets once the cache of the receiver becomes full

- I. Resource sharing
- II. Tail dropping
- III. Multiple Access
- IV. Store-and-Forward

QUESTION 6

0.67 points Saved

The addresses that are assigned to networking devices and interfaces as a part of their manufacturing process and never changed after

- I. Postal addresses
- II. Logical Addresses
- (●) III. Physical addresses
- IV. Mailing addresses

QUESTION 7

0.67 points Saved

When a packet crosses a router, which addresses inside the packet stay the same?

- (●) I. Source and destination IP addresses
- II. Source IP address and destination MAC address
- III. destination IP address and source MAC address
- IV. Source and destination MAC addresses

QUESTION 8

0.67 points Saved

Which of the following is correct:

- I. Higher layers can provide services to lower layers
- (●) II. Lower layers can provide services to higher layers
- III. A layer can provide services to the layers above and below it
- IV. None of the above is correct

QUESTION 9

0.67 points ✓ Saved

Which of the following network nodes typically implement application layer protocols such as HTTP?

- I. Routers
- II. Hubs
- (●) III. Hosts
- IV. Switches / bridges

QUESTION 10

0.67 points ✓ Saved

1. A 1.5 Gbps link between a video server and a client is established. If the distance between the client and the server is 500 Kilometer and if receiving a video file has a latency of 1 second. Find the size of the video file (assume that the speed of light is 2.8*10^8 m/s and no queuing delay. Note: 1 Kilometer = 10^3 meter)

- I. 6 Gigabit
- II. 4.5 Gigabit
- (●) III. 1.5 Gigabit
- IV. 3 Gigabit

QUESTION 11

0.67 points ✓ Saved

How does an ethernet node discover the beginning of a frame from the received signal in the wire?

- I. Using destination MAC address
- II. Using destination IP address
- (●) III. Using preamble and SFD bytes which are a sequence of bits toggling between 1 and 0 till last bit which breaks the pattern to declare that the next bit is the first bit in the frame.
- IV. Using CRC

QUESTION 12

0.67 points ✓ Saved

The destination MAC address "FF:FF:FF:FF:FF:FF" represents

- I. An IP address
- (●) II. A broadcast address
- III. A multicast address
- IV. A unicast address

QUESTION 13

0.67 points ✓ Saved

In error detection context, the original word extracted by the receiver from the accepted received word by removing the redundant bits

- (●) I. Dataword
- II. Codeword
- III. Syndrome
- IV. Divider

QUESTION 14

0.67 points ✓ Saved

What is the minimum hamming distance for the codeword set {0000, 0101, 1010, 1111}

- I. 1
- (●) II. 2
- III. 3
- IV. 4

QUESTION 15

0.67 points Saved

If two nodes, Node A and Node B, are using CSMA/CD. Which of the following is true:

- I. Node A should sense for carrier before sending and only send after no carrier presents
- II. If Node A is using the channel, it should keep transmitting for at least 2*propagation delay
- III. Node B can transmit at any time as long as it does not sense a carrier
- IV. All of the above is correct

QUESTION 16

0.67 points Saved

Multiple nodes are using CSMA/CD to access a shared channel. One of the nodes (let's call it Node A) has been trying to send a frame 2 times but every try resulted in a collision. How long would Node A wait before retrying to send the frame again (the back-off time after the 2^{nd} collision)?

- I. A random time between 0 and 3 time unit
- II. A random time between 0 and 7 time unit
- III. A random time between 0 and 15 time unit
- IV. A random time between 0 and 31 time unit

QUESTION 17

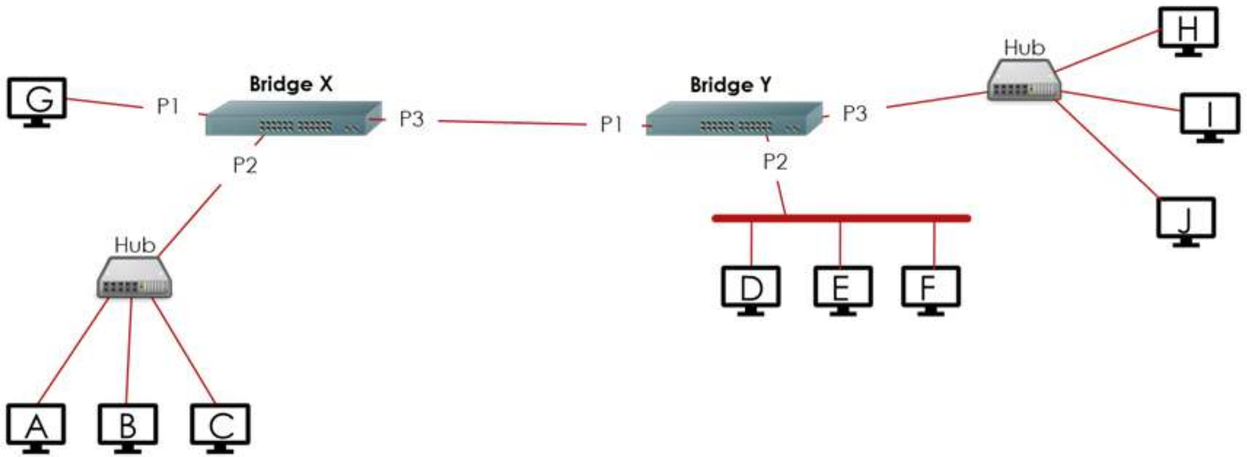
0.67 points Saved

A 100 Mbps half-duplex link between two stations is established. If the distance between the two stations is 400 m and if the stations agreed to use CSMA/CD to access the link, what is the minimum frame size that a sender must send to detect any potential collision? (Assume that the speed of light is 2.8*10^8 m/s. Note: 1 Mbps = 2^20 bit/s, 1 Megabit = 2^20 bits)

- I. 75 bits
- II. 150 bits
- III. 225 bits
- IV. 300 bits

QUESTION 18

0.67 points Saved



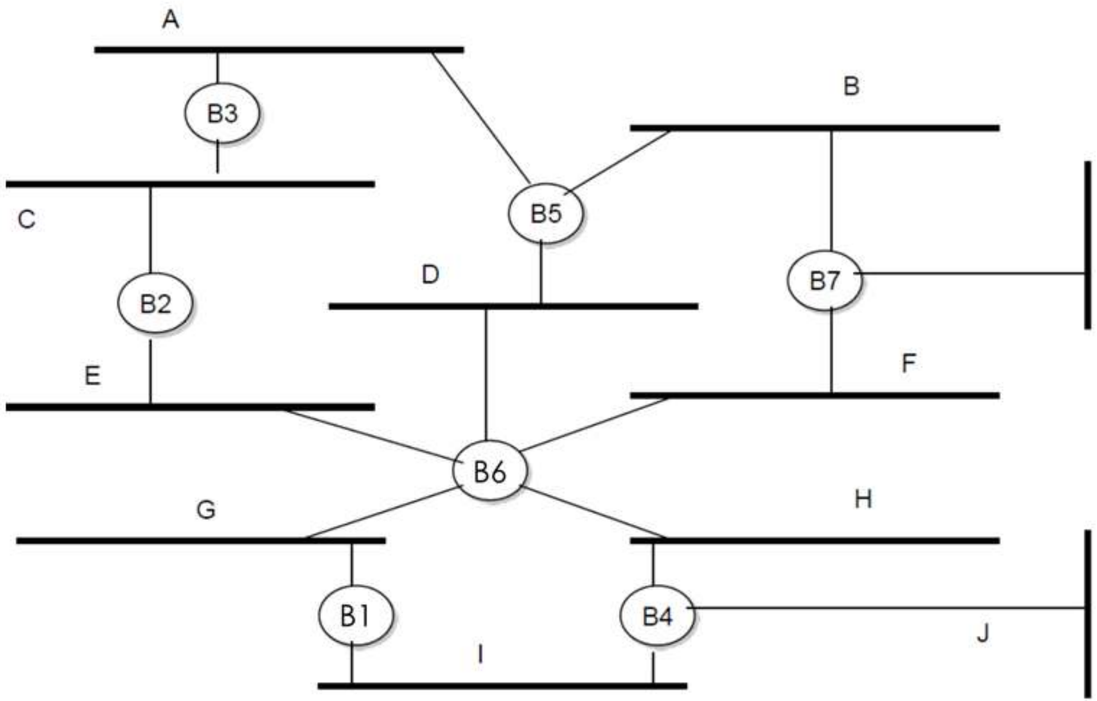
If Bridge X and Bridge Y are used to link the four LAN segments as shown in the picture. If both bridges initially have no entries in their forwarding table, what would the forwarding table of **Bridge Y** look like after the following frames are sent in sequence:

<Src=D, Dest=C> then <Src=A, Dest=G> then <Src=G, Dest=C>

- I. Bridge Y forwarding table: <Host D, Port 2>
- II. Bridge Y forwarding table: <Host G, Port 1>, <Host D, Port 2>
- III. Bridge Y forwarding table: <Host G, Port 1>, <Host D, Port 2>, <Host A, Port 1>
- IV. Bridge Y forwarding table: <Host G, Port 1>, <Host D, Port 2>, <Host A, Port 1>, <Host C, Port 3>

QUESTION 19

0.67 points ✓ Saved



In the figure above, which bridge is considered the designated bridge for LAN A after the spanning tree protocol finishes building the tree?

- I. B1
- II. B6
- III. B5
- IV. B3

QUESTION 20

0.67 points ✓ Saved

Let's assume that a configuration BPDU has the following information: [Root ID, cost to reach the root, Bridge ID]. If a bridge B4 has the configuration BPDU [B2,2,B4]. How will B4 change this BPDU after receiving B5's BPDU that has the following information [B1,6,B5]

- I. B4 will update its BPDU to [B1,7,B5]
- II. B4 will update its BPDU to [B1,7,B4]
- III. B4 will keep his BPDU as [B2,2,B4]
- IV. B4 will update its BPDU to [B1,3,B4]

QUESTION 21

0.67 points ✓ Saved

In CSMA/CA, if a host sent a "Request to send" frame (RTS) to an access point for the first time but never received a "Clear to send" frame (CTS). Which of the following is correct:

- I. The host will wait a backoff time then try sending the RTS again
- II. The host will give up and abort the connection
- III. The host will reset the timer and wait for another timeout
- IV. The host will send RTS again right away without waiting

QUESTION 22

0.67 points ✓ Saved

An IP address can be separated into parts. What are these parts?

- I. Network ID and Host ID
- II. Network ID, Host ID, and Class ID
- III. Network ID, Host ID, Class ID, and Router ID
- IV. Network ID, Host ID, Class ID, Router ID, Broadcast ID

QUESTION 23

0.67 points ✔ Saved

What is the checksum of an IP header that has the sum of "7444" in hexadecimal when adding every 16-bit word of it together?

- (●) I. 8BBB hexadecimal
- ( ) II. 8B44 hexadecimal
- ( ) III. 84B4 hexadecimal
- ( ) IV. 8B51 hexadecimal

QUESTION 24

0.67 points ✔ Saved

In the classful IP addressing scheme, which of the following is true

- ( ) I. There are more Class A networks than Class C
- ( ) II. The number of bits in the Network ID part of Class A addresses is more than the network ID bits in Class C addresses
- (●) III. An organization that has one Class A address has more host addresses than another organization that has one Class C address
- ( ) IV. None of the above are true

QUESTION 25

0.67 points Saved

How many bits belong to the network ID part of the following CIDR address "198.150.1.0/24"?

- I. 198
- II. 1
- III. 150
- IV. 24

QUESTION 26

0.67 points Saved

What is the CIDR address that represents the addresses between 207.46.0.0 and 207.46.255.255?

- I. 207.46.255.0/24
- II. 207.46.255.0/16
- (selected) III. 207.46.0.0/16
- IV. 207.46.0.0/24

QUESTION 27

0.67 points Saved

If an organization is given the CIDR address 215.151.48.0/24 and decided to divide its addresses into 8 subnets. How many host addresses per subnets are valid? (hint: this depends on the number of bits in the host ID part for each subnet but should take out the subnet address and the broadcast address)

- I. (2^3)-2 = 6 hosts
- II. (2^4)-2 = 14 hosts
- (selected) III. (2^5)-2 = 30 hosts
- IV. (2^6)-2 = 62 hosts

QUESTION 28

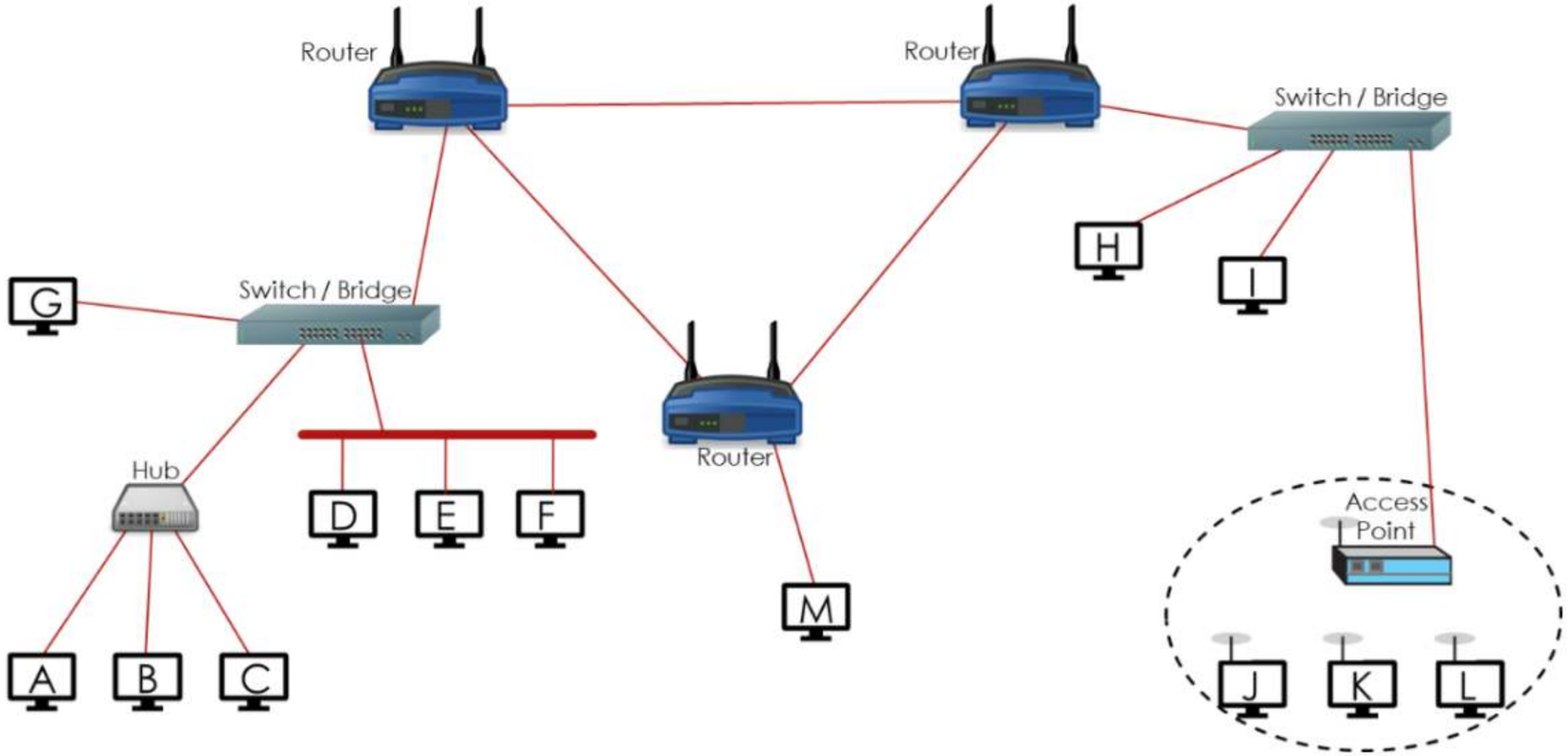
0.67 points Saved

Which CIDR address from the following has the longest prefix matching with the address 195.82.207.8? Note: 8 in decimal = 00001000 in binary

- I. 195.82.207.0/24
- (selected) II. 195.82.207.0/28
- III. 195.82.207.0/26
- IV. 195.82.207.0/30

QUESTION 29

0.67 points Saved

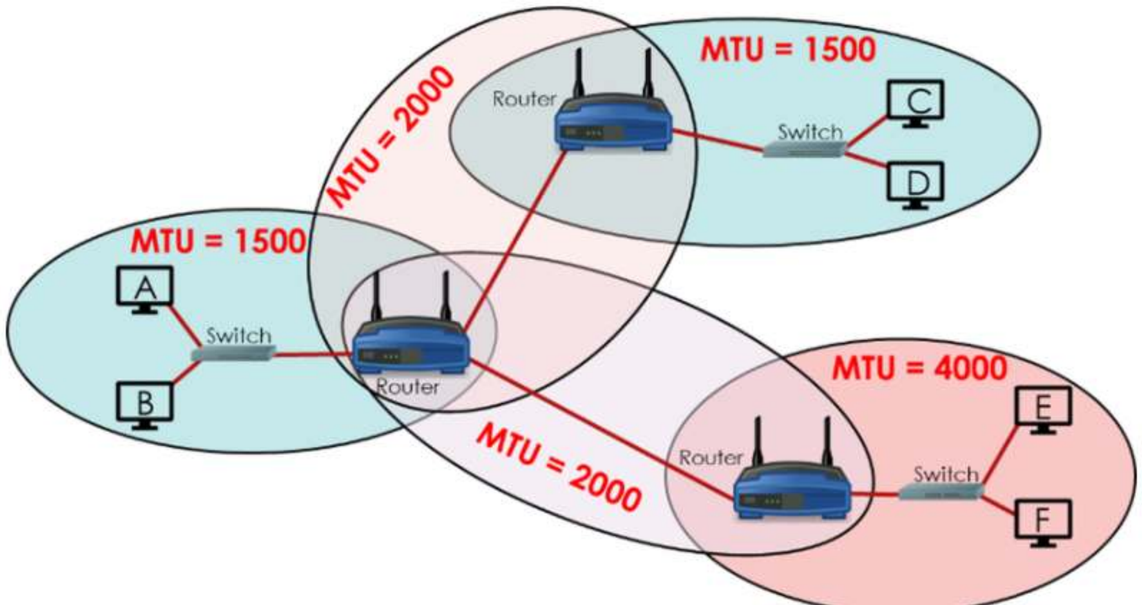


If Host H sends an ARP query packet, which of the following hosts will see the packet?

- I. I
- II. J
- III. K
- IV. All of the hosts above

QUESTION 30

0.67 points Saved



In the figure above, if Host B used the MTU discovery protocol to find the minimum MTU of the path to Host E, How many times an ICMP message would have been sent to Host B from the routers before Host B's message reached Host E.

- I. 0
- II. 1
- III. 2
- IV. 3