QUESTION 1

1 points Save Answer

The time it takes to move a complete frame across a link

- I. Propagation delay
- II. Latency
- III. Transmission time
- IV. Bandwidth

QUESTION 2

1 points Save Answer

When a networking device moves from one network to another, which of the following addresses changes?

- I. The device's IP address
- II. The user Post address
- III. The user Mail address
- IV. The device's MAC address

QUESTION 3

1 points Save Answer

A communication protocol that requires connection establishment and termination before and after sending data

- I. Connection-oriented
- II. Connectionless
- III. Connection line
- IV. Connection signal

QUESTION 4

1 points Save Answer

Which of the following networking technologies uses the datagram packet switching approach?

- I. Ethernet
- II. ATM
- III. Fax
- IV. None of the above

QUESTION 5

1 points Save Answer

The sending mode in which a sender wants to deliver a message to a multiple hosts in a network but not to all hosts:

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

QUESTION 6 — 1 points — Save Answer

Which layer does the Transmission Control Protocol (TCP) belong to?

- I. Application Layer
- II. Transport layer
- III. Network layer
- IV. Data link layer

QUESTION 7 — 1 points — Save Answer

The media access protocols that divide the bandwidth of the shared channel among communicating nodes (either in time, frequency, or using a code) to allow multiple access

- I. Random access protocols
- II. Controlled access protocols
- III. Channelization protocols
- IV. None of the above

QUESTION 8 — 1 points — Save Answer

In CRC, if a receiver divides a codeword with a divisor and find the reminder to be 00000, The receiver will:

- I. Accept the frame
- II. Detect error
- III. Augment the data
- IV. Change the divisor

QUESTION 9 — 1 points — Save Answer

In Wi-Fi, the frame format could contain up to how many MAC addresses?

- I. 2
- II. 4
- III. 6
- IV. 8

QUESTION 10 — 1 points — Save Answer

The media access protocols that permit one node to use a shared media after getting permission from other nodes

- I. Random access protocols
- II. Controlled access protocols
- III. Channelization protocols
- IV. None of the above

QUESTION 11 — 1 points — Save Answer

Which of the following network nodes typically implements data link layer protocols such as CSMA?

- I. Hubs
- II. Switches / bridges
- III. All nodes mentioned above
- IV. None of the above

QUESTION 12 — 1 points — Save Answer

The sending mode in which a sender wants to deliver a message to a particular host in a network:

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

QUESTION 13 — 1 points — Save Answer

If multiple bits in a frame flipped from 1 to 0 as a result of transmitting the frame in an unreliable transmission medium, what type of error is this?

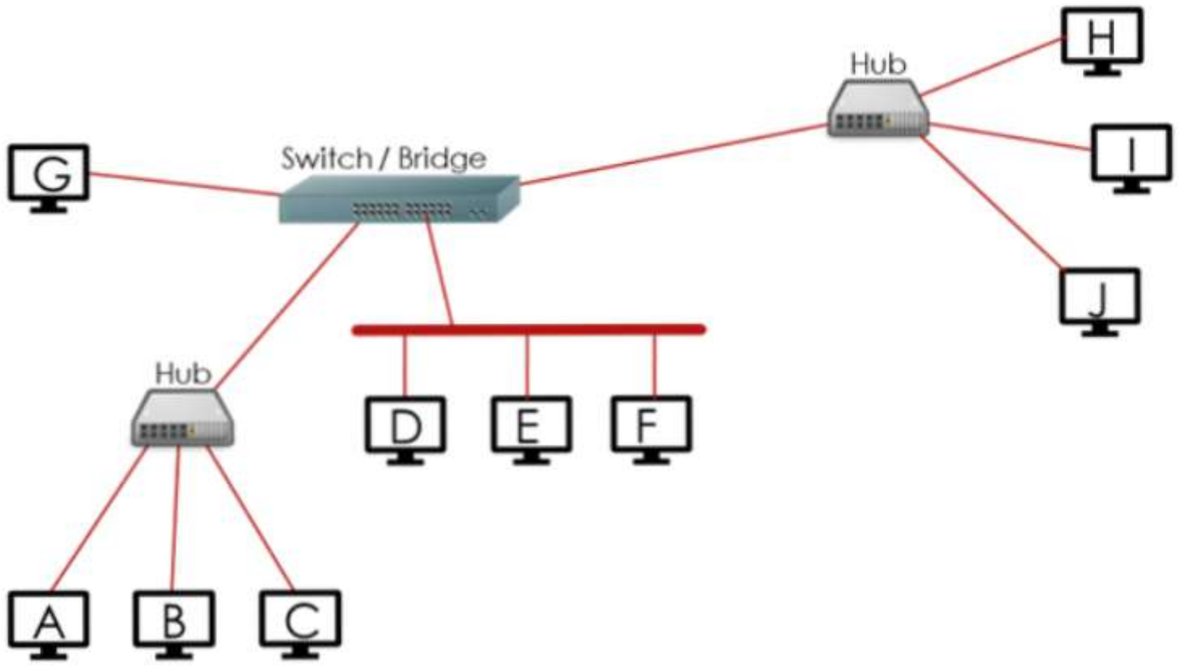
- I. Burst error
- II. Slow error
- III. Single-bit error
- IV. Fast error

QUESTION 14 — 1 points — Save Answer

Minimum time it would take to transmit a bit across due to speed-of-light considerations

- I. Transmission time
- II. Propagation delay
- III. Bandwidth
- IV. Latency

QUESTION 15 — 1 points — Save Answer



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

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

QUESTION 16 — 1 points — Save Answer

A 10 Mbps link between a video server and a client is established. If the distance between the client and the server is 750 Kilometer and if receiving a video file has a latency of 10 seconds. 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. 100 Megabit
- ( ) II. 300 Megabit
- ( ) III. 500 Megabit
- ( ) IV. 700 Megabit

Message Size = (latency - PD)*bandwidth = (10 - (750*10^3/2.8*10^8))*10= 99.97

QUESTION 17 — 1 points — Save Answer

The destination MAC address "17:18:19:10:11:12" represents

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

17 ⇒ 0001 0111

QUESTION 18 — 1 points — Save Answer

What is the minimum hamming distance for the codeword set {000000, 010011, 101100, 111111}

- ( ) I. 1
- (●) II. 3
- ( ) III. 5
- ( ) IV. 6

QUESTION 19 — 1 points — Save Answer

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 8 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 4^{th} collision)?

- ( ) I. A random time between 0 and 63 time unit
- ( ) II. A random time between 0 and 127 time unit
- (●) III. A random time between 0 and 255 time unit
- ( ) IV. A random time between 0 and 511 time unit

$2^i - 1 = 2^8 - 1$

$= 255$

QUESTION 20 — 1 points — Save Answer

A 10 Mbps half-duplex link between two stations is established. If the distance between the two stations is 20 Km 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 Km = 10^3 m, 1 Mbps = 2^20 bit/s)

- ( ) I. 1130 bits
- (●) II. 1498 bits
- ( ) III. 2275 bits
- ( ) IV. 4688 bits

Min frame size=2*(distance/speed of light)*bandwidth=2*(20*10^3/2.8*10^8)*(10*2^20)

QUESTION 21

1 points Save Answer

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 X** look like after the following frames are sent in sequence:
<Src=G, Dest=C> then <Src=D, Dest=C> then <Src=A, Dest=G>

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

QUESTION 22

1 points Save Answer

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

- I. B1
- II. B2
- III. B5
- IV. B3

QUESTION 23

1 points Save Answer

Let's assume that a configuration BPDU has the following information: [Root ID, cost to reach the root, Bridge ID]. If a bridge B3 has the configuration BPDU [B2,5,B3]. How will B3 change this BPDU after receiving B2's BPDU that has the following information [B1,7,B2]

- I. B3 will keep his BPDU as [B2,5,B3]
- II. B3 will update its BPDU to [B1,7,B3]
- III. B3 will update its BPDU to [B1,8,B3]
- IV. B3 will update its BPDU to [B1,8,B2]

QUESTION 24

1 points Save Answer

What is the checksum of an IP header that has the sum of "C4BD" in hexadecimal when adding every 16-bit word of it together?

- I. DB4C hexadecimal
- II. 3B43 hexadecimal
- III. 3B42 hexadecimal
- IV. 24B3 hexadecimal

QUESTION 25

1 points Save Answer

How many bits belong to the network ID part of the following CIDR address "170.50.4.0/22"?

- I. 170
- II. 4
- III. 10
- IV. 22

QUESTION 26

1 points Save Answer

What is the CIDR address that represents the addresses between 198.125.12.0 and 198.125.15.255?

- I. 198.125.15.0/22
- II. 198.125.12.0/24
- III. 198.125.15.0/24
- IV. 198.125.12.0/22

QUESTION 27

1 points Save Answer

If an organization is given the CIDR address 195.50.64.0/18, How many subnets can the organization have if each subnet needs 1022 valid host addresses? (Hint: this depends on the number of bits that will be used to distinguish the subnets)

- I. 2^2 = 4 subnets
- II. 2^4 = 16 subnets
- III. 2^6 = 64 subnets
- IV. 2^8 = 256 subnets

QUESTION 28

1 points Save Answer

Which CIDR address from the following has the longest prefix matching with the address 215.200.50.96? Note: 96 in decimal = 01100000 in binary

- I. 215.200.50.32/27
- II. 215.200.50.128/25
- III. 215.200.50.64/26
- IV. 215.200.50.48/28

QUESTION 29

1 points Save Answer

If Host Q send an ARP query packet, which of the following hosts will see the packet?

- I. P
- II. R
- III. S
- IV. All of the hosts above

QUESTION 30

1 points Save Answer

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

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