

1. When a collision occurs in a network using CSMA/CD, how do hosts with data to transmit respond after the backoff period has expired?

**The hosts return to a listen-before-transmit mode.**

The hosts creating the collision have priority to send data.

The hosts creating the collision retransmit the last 16 frames.

The hosts extend their delay period to allow for rapid transmission.

2. Which statements correctly describe MAC addresses? (Choose three.)  
dynamically assigned

**copied into RAM during system startup**

layer 3 address

**contains a 3 byte OUI**

**6 bytes long**

32 bits long

3. What three primary functions does data link layer encapsulation provide? (Choose three.)  
path determination

**frame delimiting**

**addressing**

IP address resolution

**error detection**

port identification

4. Which of the following is a drawback of the CSMA/CD access method?

**Collisions can decrease network performance.**

It is more complex than non-deterministic protocols.

Deterministic media access protocols slow network performance.

CSMA/CD LAN technologies are only available at slower speeds than other LAN technologies.

5. What does the IEEE 802.2 standard represent in Ethernet technologies?

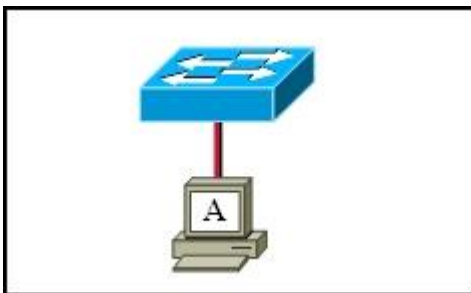
MAC sublayer

Physical layer

**Logical Link Control sublayer**

Network layer

- 6.



Refer to the exhibit. The switch and workstation are administratively configured for full-duplex operation. Which statement accurately reflects the operation of this link?

**No collisions will occur on this link.**

Only one of the devices can transmit at a time.

The switch will have priority for transmitting data.

The devices will default back to half duplex if excessive collisions occur.

7. Which of the following describe interframe spacing? (Choose two.)

**the minimum interval, measured in bit-times, that any station must wait before sending another frame**

the maximum interval, measured in bit-times, that any station must wait before sending another frame

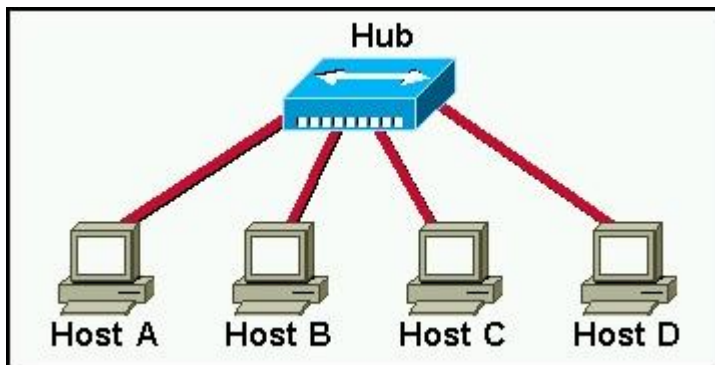
the 96-bit payload padding inserted into a frame to achieve a legal frame size

the 96-bit frame padding transmitted between frames to achieve proper synchronization

**the time allowed for slow stations to process a frame and prepare for the next frame**

the maximum interval within which a station must send another frame to avoid being considered unreachable

8.



In the graphic, Host A has reached 50% completion in sending a 1 KB Ethernet frame to Host D when Host B wishes to transmit its own frame to Host C. What must Host B do?

Host B can transmit immediately since it is connected on its own cable segment.

Host B must wait to receive a CSMA transmission from the hub, to signal its turn.

Host B must send a request signal to Host A by transmitting an interframe gap.

**Host B must wait until it is certain that Host A has completed sending its frame.**

9. After an Ethernet collision, when the backoff algorithm is invoked, which device has priority to transmit data?

the device involved in the collision with the lowest MAC address

the device involved in the collision with the lowest IP address

**any device in the collision domain whose backoff timer expires first**

those that began transmitting at the same time

10. What are three functions of the upper data link sublayer in the OSI model? (Choose three.)

**insulates network layer protocols from changes in physical equipment**

**identifies the network layer protocol**

recognizes streams of bits

**makes the connection with the upper layers**

determines the source of a transmission when multiple devices are transmitting

identifies the source and destination applications

11. Ethernet operates at which layers of the OSI model? (Choose two.)

Network layer

Transport layer

**Physical layer**

Application layer

Session layer

**Data-link layer**

12. Which two features make switches preferable to hubs in Ethernet-based networks? (Choose two.)

reduction in cross-talk

**minimizing of collisions**

support for UTP cabling

division into broadcast domains

**increase in the throughput of communications**

13. Convert the binary number 10111010 into its hexadecimal equivalent. Select the correct answer from the list below.

90

**BA**

B3

1C

A1

85

14. Host A has an IP address of 172.16.225.93, a mask of 255.255.248.0, and a default gateway of 172.16.224.1. Host A needs to send a packet to a new host whose IP is 172.16.231.78. Host A performs the ANDing operation on its address and subnet mask. What two things will occur? (Choose two.)

**Host A will get a result of 172.16.224.0 from the AND process.**

Host A will send on to the media a broadcast frame that contains the packet.

**Host A will broadcast an ARP request for the MAC of the host 172.16.231.78.**

Host A will change the destination IP of the packet to 172.16.224.1 and forward the packet.

Host A will encapsulate the packet in a frame with a destination MAC that is the MAC address associated with 172.16.224.1.

15. Why do hosts on an Ethernet segment that experience a collision use a random delay before attempting to transmit a frame?

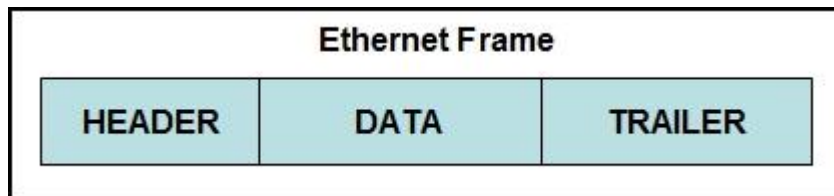
A random delay is used to ensure a collision-free link.

A random delay value for each device is assigned by the manufacturer.

A standard delay value could not be agreed upon among networking device vendors.

**A random delay helps prevent the stations from experiencing another collision during the transmission.**

16.



Refer to the exhibit. Which option correctly identifies content that the frame data field may contain?  
preamble and stop frame

**network layer packet**

physical addressing

FCS and SoF

17. Ethernet operates at which layer of the TCP/IP network model?

application

physical

transport

internet

data link

**network access**

18. What are the two most commonly used media types in Ethernet networks today? (Choose two.)

coaxial thicknet

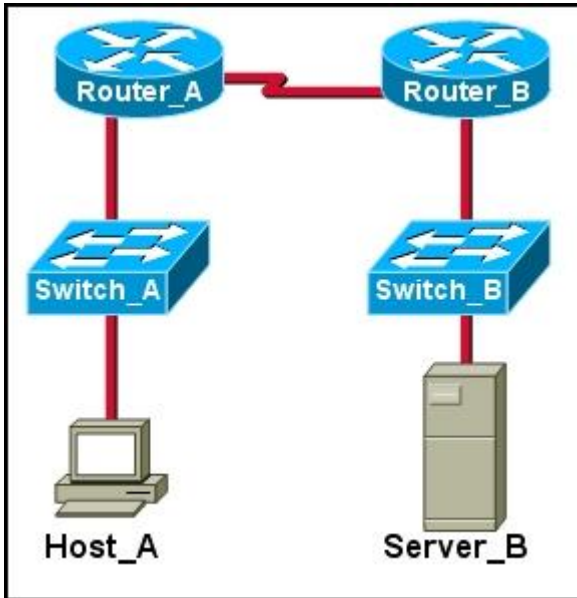
**copper twisted pair**

coaxial thinnet

**optical fiber**

shielded coaxial cable

19.



Refer to the exhibit. Host\_A is attempting to contact Server\_B. Which statements correctly describe the addressing Host\_A will generate in the process? (Choose two.)

- A packet with the destination IP of Router\_B.
- A frame with the destination MAC address of Switch\_A.
- A packet with the destination IP of Router\_A.
- A frame with the destination MAC address of Router\_A.**
- A packet with the destination IP of Server\_B.**
- A frame with the destination MAC address of Server\_B.

20. What is the primary purpose of ARP?

- translate URLs to IP addresses
- resolve IPv4 addresses to MAC addresses**
- provide dynamic IP configuration to network devices
- convert internal private addresses to external public addresses