CCNA Exploration 4.0: (I) Network Fundamentals

Chapter 2: Communications over the Networks

1

Which two layers of the OSI model have the same functions as the TCP/IP model
Network Access Layer? (Choose two.)

Network

Transport

* Physical

* Data Link

Session

2

What is a primary function of the trailer information added by the data link layer
encapsulation?

* supports error detection

ensures ordered arrival of data

provides delivery to correct destination

identifies the devices on the local network

assists intermediary devices with processing and path selection

3

During the encapsulation process, what occurs at the data link layer?

No address is added.

The logical address is added.

* The physical address is added.

The process port number is added.

4

What device is considered an intermediary device?

file server

IP phone

laptop

printer

* switch

5

Which layer encapsulates the segment into packets?

physical

* data link

network

transport

6

Which statements correctly identify the role of intermediary devices in the network?
(Choose three.)

* determine pathways for data

initiate data communications

* retime and retransmit data signals

originate the flow of data

* manage data flows

final termination point for data flow

7

What can be identified by examining the network layer header?

the destination device on the local media

* the path to use to reach the destination host

the bits that will be transferred over the media

the source application or process creating the data

8

What is the proper order of the layers of the OSI model from the highest layer to the
lowest layer?

physical, network, application, data link, presentation, session, transport

application, physical, session, transport, network, data link, presentation

application, presentation, physical, session, data link, transport, network

* application, presentation, session, transport, network, data link, physical

presentation, data link, session, transport, network, physical, application

9

Refer to the exhibit. Which three labels correctly identify the network types for the
network segments that are shown? (Choose three.)

Network A -- WAN

* Network B -- WAN

* Network C -- LAN

Network B -- MAN

Network C -- WAN

* Network A -- LAN

10

What are the key functions of encapsulation? (Choose three.)

allows modification of the original data before transmission

* identifies pieces of data as part of the same communication

enables consistent network paths for communication

* ensures that data pieces can be directed to the correct receiving end device

* enables the reassembly of complete messages

tracks delay between end devices

11

Refer to the exhibit. Which networking term describes the data interleaving process represented in the graphic?

piping

PDU

streaming

multiplexing

* encapsulation

12

What is a PDU?

corruption of a frame during transmission

data reassembled at the destination

retransmitted packets due to lost communication

* a layer specific encapsulation

13

Refer to the exhibit. "Cell A" at IP address 10.0.0.34 has established an IP session with "IP Phone 1" at IP address 172.16.1.103. Based upon the graphic, which device type best describes the function of wireless device "Cell A?"

the destination device

* an end device

an intermediate device

a media device

14

Refer to the exhibit. Which set of devices contains only end devices?

A, C, D

B, E, G, H

C, D, G, H, I, J

D, E, F, H, I, J

* E, F, H, I, J

15

Refer to the exhibit. Which term correctly identifies the device type that is included in the green area?

source

end

transfer

* intermediary

16

Which three statements best describe a Local Area Network (LAN)? (Choose three.)

* A LAN is usually in a single geographical area.

* The network is administered by a single organization.

The connection between segments in the LAN is usually through a leased connection.

The security and access control of the network are controlled by a service provider.

* A LAN provides network services and access to applications for users within a common organization.

Each end of the network is generally connected to a Telecommunication Service Provider (TSP).

17

Refer to the exhibit. What type of network is shown?

WAN

MAN

* LAN

WLAN

18

What is the purpose of the TCP/IP Network Access layer?

path determination and packet switching

* data representation, encoding, and control

reliability, flow control, and error detection

detailing the components that make up the physical link and how to access it

the division of segments into packets

19

Which characteristic correctly refers to end devices in a network?

manage data flows

originate data flow

* retime and retransmit data signals

determine pathways for data

20

What is the primary purpose of Layer 4 port assignment?

to identify devices on the local media

to identify the hops between source and destination

to identify to the intermediary devices the best path through the network

to identify the source and destination end devices that are communicating

* to identify the processes or services that are communicating within the end devices

21

Select the statements that are correct concerning network protocols. (Choose three.)

* define the structure of layer specific PDU's

dictate how to accomplish layer functions

* outline the functions necessary for communications between layers

limit hardware compatibility

* require layer dependent encapsulations

eliminate standardization among vendors

Chapter 3: OSI Application Layer Functionality

1 A network administrator is designing a network for a new branch office of twenty-five users. What are the advantages of using a client-server model? (Choose two.)

* centralized administration

does not require specialized software

* security is easier to enforce

lower cost implementation

provides a single point of failure

2 Which of the following are benefits of peer-to-peer networks? (Choose three.)

centralized security

* easy to create

very scalable

* no centralized equipment required

* centralized administrator not required

centralized control of assets

3 Which two protocols are used to control the transfer of web resources from a web server to a client browser? (Choose two.)

ASP

FTP

HTML

* HTTP

* HTTPS

IP

4 Which statements are correct concerning the role of the MTA in handling email? (Choose three.)

routes email to the MDA on other servers

* receives email from the client's MUA

receives email via the POP3 protocol

* passes email to the MDA for final delivery

* uses SMTP to route email between servers

delivers email to clients via the POP3 protocol

5 What is the automated service that matches resource names with the required IP address?

HTTP

SSH

FQDN

* DNS

Telnet

SMTP

6 What three protocols operate at the Application layer of the OSI model? (Choose three.)

ARP

* DNS

PPP

* SMTP

* POP

ICMP

7 What are the two forms of application layer software? (Choose two.)

* applications

processes

* services

dialogs

syntax

daemons

8 What are three properties of peer-to-peer applications? (Choose three.)

* acts as both a client and server within the same communication

requires centralized account administration

* hybrid mode includes a centralized directory of files

* can be used in client-server networks

does not require specialized software

centralized authentication is required

9 Which application layer protocols correctly match a corresponding function? (Choose two.)

DNS dynamically allocates IP addresses to hosts

* HTTP transfers data from a web server to a client

POP delivers email from the client to the server email server

SMTP supports file sharing

Telnet provides a virtual connection for remote access

10 Which are valid DNS resource record types? (Choose three.)

* A

* NS

MTA

* MX

FQDN

MAU

11 Which email components are used to forward mail between servers? (Choose two.)

MDA

IMAP

* MTA

POP

* SMTP

MUA

12 What is the primary disadvantage of telnet?

does not support authentication

consumes network bandwidth

utilizes client resources

not widely available

* does not support encryption

requires remote access

13 What are three common HTTP message types? (Choose three.)

* GET

PUSH

* POST

HTML

UPLOAD

* PUT

14 Which of the following are examples of TCP/IP application layer protocols? (Choose three.)

* a terminal emulation protocol that supports remote console connections with various network devices

a protocol created by IBM that makes it easier for mainframes to connect to remote offices

* a protocol responsible for transporting electronic mail on TCP/IP networks and the Internet

a protocol that controls the rate at which data is sent to another computer

* a protocol that exchanges network management information between a network device and a management console

Chapter 4: OSI Transport Layer

1

Refer to the exhibit. What two pieces of information can be determined from the output that is shown? (Choose two.)

The local host is using well-known port numbers to identify the source ports.

* A termination request has been sent to 192.135.250.10.

Communication with 64.100.173.42 is using HTTP Secure.

* The local computer is accepting HTTP requests.

192.168.1.101:1042 is performing the three-way handshake with 128.107.229.50:80.

2

After a web browser makes a request to a web server that is listening to the standard port, what will be the source port number in the TCP header of the response from the server?

13

53

* 80

1024

1728

3

Which information is found in both the TCP and UDP header information?

sequencing

flow control

* acknowledgments

source and destination

4

Which is an important characteristic of UDP?

acknowledgement of data delivery

* minimal delays in data delivery

high reliability of data delivery

same order data delivery

5

Refer to the exhibit. Host A is using FTP to download a large file from Server 1. During the download process, Server 1 does not receive an acknowledgment from Host A for several bytes of transferred data. What action will Server 1 take as a result?

create a Layer 1 jam signal

* reach a timeout and resend the data that needs to be acknowledged

send a RESET bit to the host

change the window size in the Layer 4 header

6

Refer to the exhibit. In line 7 of this Wireshark capture, what TCP operation is being performed?

* session establishment

segment retransmit

data transfer

session disconnect

7

Refer to the exhibit. The initial TCP exchange of data between two hosts is shown in the exhibit. Assuming an initial sequence number of 0, what sequence number will be included in Acknowledgment 2 if Segment 6 is lost?

2

3

6

* 1850

3431

3475

8

Why is flow control used for TCP data transfer?

to synchronize equipment speed for sent data

to synchronize and order sequence numbers so data is sent in complete numerical order

* to prevent the receiver from being overwhelmed by incoming data

to synchronize window size on the server

to simplify data transfer to multiple hosts

9

During a TCP communication session, if the packets arrive to the destination out of order, what will happen to the original message?

The packets will not be delivered.

The packets will be retransmitted from the source.

* The packets will be delivered and reassembled at the destination.

The packets will be delivered and not reassembled at the destination.

10

With TCP/IP data encapsulation, which range of port numbers identifies all well-known applications?

0 to 255

256 to 1022

* 0 to 1023

1024 to 2047

49153 to 65535

11

Which transport layer protocol provides low overhead and would be used for applications which do not require reliable data delivery?

TCP

IP

* UDP

HTTP

DNS

12

What are two features of the User Datagram Protocol (UDP)? (Choose two.)

* flow control

* low overhead

connectionless

connection-oriented

sequence and acknowledgements

13

What mechanism is used by TCP to provide flow control as segments travel from source to destination?

sequence numbers

session establishment

* window size

acknowledgments

14

What is dynamically selected by the source host when forwarding data?

destination logical address

source physical address

default gateway address

* source port

15

Why are port numbers included in the TCP header of a segment?

to indicate the correct router interface that should be used to forward a segment

to identify which switch ports should receive or forward the segment

to determine which Layer 3 protocol should be used to encapsulate the data

* to enable a receiving host to forward the data to the appropriate application

to allow the receiving host to assemble the packet in the proper order

16

Which two options represent Layer 4 addressing? (Choose two.)

identifies the destination network

* identifies source and destination hosts

identifies the communicating applications

* identifies multiple conversations between the hosts

identifies the devices communicating over the local media

17

Which three features allow TCP to reliably and accurately track the transmission of data

from source to destination?

* encapsulation

flow control

connectionless services

* session establishment

* numbering and sequencing

best effort delivery

18

Which OSI model layer is responsible for regulating the flow of information from source

to destination, reliably and accurately?

application

presentation

session

* transport

network

19

Based on the transport layer header shown in the diagram, which of the following statements describe the established session? (Choose two.)

This is a UDP header.

* This contains a Telnet request.

This contains a TFTP data transfer.

The return packet from this remote host will have an Acknowledgement Number of 43693.

* This is a TCP header.

20

Which event occurs during the transport layer three-way handshake?

The two applications exchange data.

TCP initializes the sequence numbers for the sessions.

* UDP establishes the maximum number of bytes to be sent.

The server acknowledges the bytes of data received from the client.

Chapter 5: OSI Network Layer

1

In an IPv4 environment, what information is used by the router to forward data packets from one interface of a router to another?

* destination network address

source network address

source MAC address

well known port destination address

2

What information is added during encapsulation at OSI Layer 3?

source and destination MAC

source and destination application protocol

source and destination port number

*source and destination IP address

3

In a connectionless system, which of the following is correct?

The destination is contacted before a packet is sent.

* The destination is not contacted before a packet is sent.

The destination sends an acknowledgement to the source that indicates the packet was received.

The destination sends an acknowledgement to the source that requests the next packet to be sent.

4

Which IP packet field will prevent endless loops?

type-of-service

identification

flags

* time-to-live

header checksum

5

Which portion of the network layer address does a router use to forward packets?

host portion

broadcast address

* network portion

gateway address

6
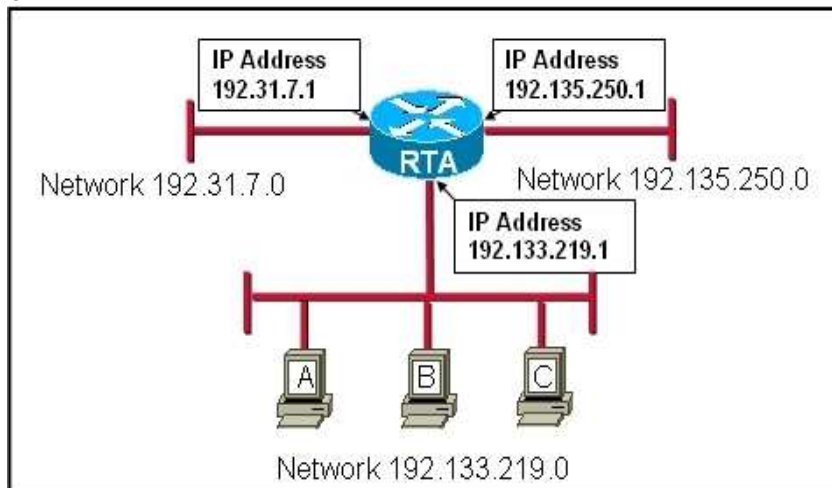
Refer to the exhibit. Using the network in the exhibit, what would be the default gateway address for host A in the 192.133.219.0 network?

192.135.250.1

192.31.7.1

192.133.219.0

* 192.133.219.1

7

If the default gateway is configured incorrectly on the host, what is the impact on communications?

The host is unable to communicate on the local network.

* The host can communicate with other hosts on the local network, but is unable to communicate with hosts on remote networks.

The host can communicate with other hosts on remote networks, but is unable to communicate with hosts on the local network.

There is no impact on communications.

8

What is the purpose of a default gateway?

physically connects a computer to a network

provides a permanent address to a computer

identifies the network to which a computer is connected

identifies the logical address of a networked computer and uniquely identifies it to the rest of the network

* identifies the device that allows local network computers to communicate with devices on other networks

9

What type of routing uses information that is manually entered into the routing table?

dynamic

interior

* static

standard

10

When the destination network is not listed in the routing table of a Cisco router, what are two possible actions that the router might take? (Choose two.)

The router sends an ARP request to determine the required next hop address.

* The router discards the packet.

The router forwards the packet toward the next hop indicated in the ARP table.

The router forwards the packet to the interface indicated by the source address.

* The router forwards the packet out the interface indicated by the default route entry.

11

What are the key factors to consider when grouping hosts into a common network?
(Choose three.)

gateways

* purpose

physical addressing

software version

* geographic location

* ownership

12

What is a component of a routing table entry?

the MAC address of the interface of the router

the destination Layer 4 port number

the destination host address

*the next-hop address

13

Which intermediary devices could be used to implement security between networks?
(Choose two.)

* router

hub

switch

* firewall

access point

bridge

14

What are three common problems with a large network? (Choose three.)

too few broadcasts

* performance degradation

* security issues

limited management responsibility

* host identification

protocol compatibility

15

Refer to the exhibit. All devices shown in the exhibit have factory default settings. How

many broadcast domains are represented in the topology that is shown?

3

* 4

5

7

8

11

16

Which three statements are true about routes and their use? (Choose three.)

If no route to the destination network is found, the packet is returned to the previous router.

* If the destination network is directly connected, the router forwards the packet to the destination host.

If multiple network entries exist for the destination network, the most general route is used to forward the packet. * If no route exists for the destination network and a default route is present, the packet is forwarded to the next-hop router.

* If the originating host has a default gateway configured, the packet for a remote network can be forwarded using that route.

If a host does not have a route manually configured for the destination network, the host will drop the packet.

17

Refer to the exhibit. A network administrator is troubleshooting a connectivity problem and needs to determine the address that is used to forward network packets out the network. Using the netstat -r command, the administrator would identify which address as the address to which all hosts send packets that are destined for an outside network?

10.10.10.26

127.0.0.1

* 10.10.10.6

10.10.10.1

224.0.0.0

18

Refer to the exhibit. A network administrator notices that there are too many broadcasts on the network. What two steps can the network administrator take to resolve this problem? (Choose two.)

* Replace S2 with a router.

Place all servers on S1.

Disable TCP/IP broadcasts.

* Subnet the 192.168.0.0 /24 network.

Disable all unused interfaces on the switches.

19

Refer to the exhibit. The network in the exhibit is fully operational. What two statements correctly describe the routing for the topology that is shown? (Choose two.)

* 192.168.0.2 is the next-hop address that is used by R3 to route a packet from the 10.0.0.0 network to the 172.16.0.0 network.

10.0.0.1 is the next-hop address that is used by R1 to route a packet from the 192.168.12.0 network to the 10.0.0.0 network.

192.168.0.1 is the next-hop address that is used by R1 to route a packet from the 192.168.12.0 network to the 172.16.0.0 network.

172.16.0.1 is the next-hop address that is used by R3 to route a packet from the 10.0.0.0 to the 172.16.0.0 network.

* 192.168.0.1 is the next-hop address that is used by R2 to route a packet from the 172.16.0.0 network to the 192.168.12.0 network.

192.168.0.2 is the next-hop address that is used by R2 to route a packet from the 172.16.0.0 network to the 192.168.12.0 network.

20

What two characteristics are commonly associated with dynamic routing protocols? (Choose two.)

require no device configuration

* provide routers with up-to-date routing tables

require less processing power than static routes require

* consume bandwidth to exchange route information

prevent manual configuration and maintenance of the routing table

21

What statement describes the purpose of a default route?

A host uses a default route to transfer data to another host on the same network segment.

A host uses a default route to forward data to the local switch as the next hop to all destinations.

A host uses a default route to identify the Layer 2 address of an end device on the local network.

* A host uses a default route to transfer data to a host outside the local network when no other route to the destination exists.

Chapter 6: Addressing the Network – IPv4

1

How many bits make up an IPv4 address?

128

64

48

* 32

2

Refer to the exhibit. A network administrator has to develop an IP addressing scheme that uses the 192.168.1.0 /24 address space. The network that contains the serial link has already been addressed out of a separate range. Each network will be allocated the same number of host addresses. Which network mask will be appropriate to address the remaining networks?

255.255.255.248

255.255.255.224

* 255.255.255.192

255.255.255.240

255.255.255.128

255.255.255.252

3

Refer to the exhibit. The network administrator has assigned the internetwork of LBMISS an address range of 192.168.10.0. This address range has been subnetted using a /29 mask. In order to accommodate a new building, the technician has decided to use the fifth subnet for configuring the new network (subnet zero is the first subnet). By company policies, the router interface is always assigned the first usable host address and the workgroup server is given the last usable host address. Which configuration should be entered into the workgroup server's properties to allow connectivity to the network?

IP address: 192.168.10.38 subnet mask: 255.255.255.240 default gateway: 192.168.10.39

IP address: 192.168.10.38 subnet mask: 255.255.255.240 default gateway: 192.168.10.33

* IP address: 192.168.10.38 subnet mask: 255.255.255.248 default gateway: 192.168.10.33

IP address: 192.168.10.39 subnet mask: 255.255.255.248 default gateway: 192.168.10.31

IP address: 192.168.10.254 subnet mask: 255.255.255.0 default gateway: 192.168.10.1

4

Refer to the exhibit. Which network prefix will work with the IP addressing scheme shown in the graphic.

/24

/16

/20

* /27

/25

/28

5

Refer to the exhibit. A network administrator discovers that host A is having trouble with Internet connectivity, but the server farm has full connectivity. In addition, host A has full connectivity to the server farm. What is a possible cause of this problem?

The router has an incorrect gateway.

Host A has an overlapping network address.

Host A has an incorrect default gateway configured.

Host A has an incorrect subnet mask.

* NAT is required for the host A network.

6

What subnet mask would a network administrator assign to a network address of 172.30.1.0 if it were possible to have up to 254 hosts?

255.255.0.0

* 255.255.255.0

255.255.254.0

255.255.248.0

7

Given the IP address and subnet mask of 172.16.134.64 255.255.255.224, which of the following would describe this address?

This is a useable host address.
This is a broadcast address.
* This is a network address.
This is not a valid address.

8

What three facts are true about the network portion of an IPv4 address? (Choose three.)

identifies an individual device
* is identical for all hosts in a broadcast domain
is altered as packet is forwarded
* varies in length
* is used to forward packets
uses flat addressing

9

What is the network address of the host 172.25.67.99 /23 in binary?

10101100. 00011001.01000011.00000000
10101100. 00011001.01000011.11111111
* 10101100. 00011001.01000010.00000000
10101100. 00011001.01000010.01100011
10101100. 00010001.01000011. 01100010
10101100. 00011001.00000000.00000000

10

A router interface has been assigned an IP address of 172.16.192.166 with a mask of 255.255.255.248. To which subnet does the IP address belong?

172.16.0.0
172.16.192.0

172.16.192.128

* 172.16.192.160

172.16.192.168

172.16.192.176

11

Refer to the exhibit. Why would the response shown be displayed after issuing the command ping 127.0.0.1 on a PC?

The IP settings are not properly configured on the host.

* Internet Protocol is not properly installed on the host.

There is a problem at the physical or data link layer.

The default gateway device is not operating.

A router on the path to the destination host has gone down.

12

What two things will happen if a router receives an ICMP packet which has a TTL value of 1 and the destination host is several hops away? (Choose two.)

* The router will discard the packet.

The router will decrement the TTL value and forward the packet to the next router on the path to the destination host.

* The router will send a time exceeded message to the source host.

The router will increment the TTL value and forward the packet to the next router on the path to the destination host.

The router will send an ICMP Redirect Message to the source host.

13

Refer to the exhibit. An administrator is designing security rules for the 192.168.22.0 /24 network. Each security rule requires an address and mask pair to represent the machines that will be affected by the rule. Which two address and mask pairs will be the most precise way to reference the servers and hosts separately. (Choose two.)

192.168.22.40 255.255.255.248

192.168.22.40 255.255.255.252

192.168.22.100 255.255.255.128

* 192.168.22.100 255.255.255.254

* 192.168.22.1 255.255.255.192

192.168.22.101 255.255.255.224

14

Which of the following are features of IPv6? (Choose three.)

* larger address space

faster routing protocols

* data types and classes of service

* authentication and encryption

improved host naming conventions

same addressing scheme as IPv4

15

Which process do routers use to determine the subnet network address based upon a given IP address and subnet mask?

binary adding

hexadecimal anding

binary division

binary multiplication

* binary ANDing

16

What is the primary reason for development of IPv6?

security

header format simplification

* expanded addressing capabilities

addressing simplification

17

Which three IP addresses are private? (Choose three.)

172.168.33.1

* 10.35.66.70

* 192.168.99.5

* 172.18.88.90

192.33.55.89

172.35.16.5

18

Which statements are true regarding IP addressing? (Choose two.)

NAT translates public addresses to private addresses destined for the Internet.

Only one company is allowed to use a specific private network address space.

* Private addresses are blocked from public Internet by router.

Network 172.32.0.0 is part of the private address space.

* IP address 127.0.0.1 can be used for a host to direct traffic to itself.

19

Which IPv4 subnetted addresses represent valid host addresses? (Choose three.)

172.16.4.127 /26
* 172.16.4.155 /26
* 172.16.4.193 /26
172.16.4.95 /27
172.16.4.159 /27
* 172.16.4.207 /27

20

What is a group of hosts called that have identical bit patterns in the high order bits of their addresses?

an internet
* a network
an octet
a radi

21

Refer to the exhibit. Host A is connected to the LAN, but it cannot get access to any resources on the Internet. The configuration of the host is shown in the exhibit. What could be the cause of the problem?

The host subnet mask is incorrect.
The default gateway is a network address.
The default gateway is a broadcast address.

* The default gateway is on a different subnet from the host.

22

Which of the following network devices are recommended to be assigned static IP addresses? (Choose three.)

LAN workstations

* servers

* network printers

* routers

remote workstations

laptops

Chapter 7: Data Link Layer

1

Which options are properties of contention-based media access for a shared media? (Choose three.)

* non-deterministic

* less overhead

one station transmits at a time

* collisions exist

devices must wait their turn

token passing

2

What is a primary purpose of encapsulating packets into frames?

provide routes across the internetwork

format the data for presentation to the user

* facilitate the entry and exit of data on media

identify the services to which transported data is associated

3

Refer to the exhibit. How many unique CRC calculations will take place as traffic routes from the PC to the laptop?

1

* 2

4

8

4

What is true concerning physical and logical topologies?

The logical topology is always the same as the physical topology.

Physical topologies are concerned with how a network transfers frames.

Physical signal paths are defined by Data Link layer protocols.

* Logical topologies consist of virtual connections between nodes.

5
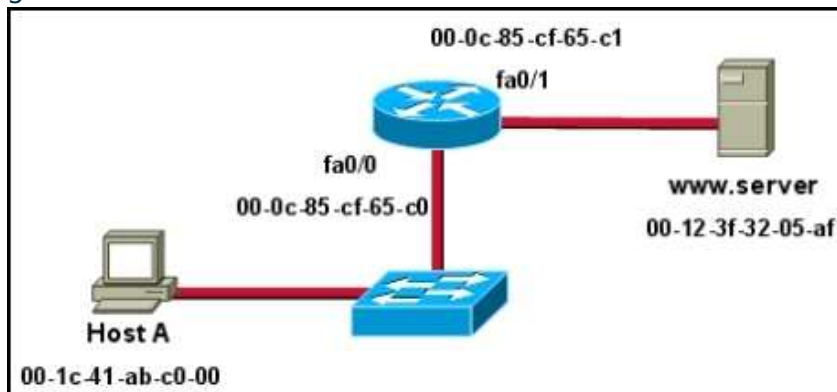
Refer to the exhibit. Assuming that the network in the exhibit is converged meaning the routing tables and ARP tables are complete, which MAC address will Host A place in the destination address field of Ethernet frames destined for www.server?

00-1c-41-ab-c0-00

* 00-0c-85-cf-65-c0

00-0c-85-cf-65-c1

00-12-3f-32-05-af

6

What are three characteristics of valid Ethernet Layer 2 addresses? (Choose three.)

* They are 48 binary bits in length.

They are considered physical addresses.

* They are generally represented in hexadecimal format.

They consist of four eight-bit octets of binary numbers.

They are used to determine the data path through the network.

* They must be changed when an Ethernet device is added or moved within the network.

7
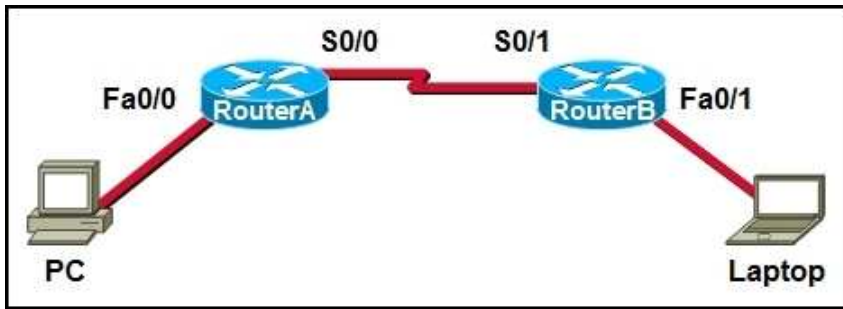
Refer to the exhibit. A frame is being sent from the PC to the laptop. Which source MAC and IP addresses will be included in the frame as it leaves RouterB? (Choose two.)

source MAC - PC

source MAC - S0/0 on RouterA

* source MAC - Fa0/1 on RouterB

* source IP - PC

source IP - S0/0 on RouterA

source IP - Fa0/1 of RouterB

8

What determines the method of media access control? (Choose two.)

network layer addressing

* media sharing

application processes

* logical topology

intermediary device function

9

What is the purpose of the preamble in an Ethernet frame?

is used as a pad for data

identifies the source address

identifies the destination address

marks the end of timing information

* is used for timing synchronization with alternating patterns of ones and zeros

10

What statements are true regarding addresses found at each layer of the OSI model? (Choose two.)

* Layer 2 may identify devices by a physical address burned into the network card

Layer 2 identifies the applications that are communicating

* Layer 3 represents a hierarchical addressing scheme

Layer 4 directs communication to the proper destination network

Layer 4 addresses are used by intermediary devices to forward data

11

Which statements describe the logical token-passing topology? (Choose two.)

Network usage is on a first come, first serve basis.

* Computers are allowed to transmit data only when they possess a token.

Data from a host is received by all other hosts.

* Electronic tokens are passed sequentially to each other.

Token passing networks have problems with high collision rates.

12

Which sublayer of the data link layer prepares a signal to be transmitted at the physical layer?

LLC

* MAC

HDLC

NIC

13

What is true regarding media access control? (Choose three.)

* Ethernet utilizes CSMA/CD

* defined as placement of data frames on the media

contention-based access is also known as deterministic

802.11 utilizes CSMA/CD

* Data Link layer protocols define the rules for access to different media

controlled access contains data collisions

14

What is a characteristic of a logical point-to-point topology?

The nodes are physically connected.

The physical arrangement of the nodes is restricted.

* The media access control protocol can be very simple.

The data link layer protocol used over the link requires a large frame header.

15

What two facts are true when a device is moved from one network or subnet to another? (Choose two.)

The Layer 2 address must be reassigned.

The default gateway address should not be changed.

* The device will still operate at the same Layer 2 address.

Applications and services will need additional port numbers assigned.

* The Layer 3 address must be reassigned to allow communications to the new network.

16

What is a function of the data link layer?

provides the formatting of data

provides end-to-end delivery of data between hosts

provides delivery of data between two applications

* provides for the exchange data over a common local media

17

Which three factors should be considered when implementing a Layer 2 protocol in a network? (Choose three.)

the Layer 3 protocol selected

* the geographic scope of the network

the PDU defined by the transport layer

* the physical layer implementation

* the number of hosts to be interconnected

18

What is the primary purpose of the trailer in a data link layer frame?

define the logical topology

provide media access control

* support frame error detection

carry routing information for the frame

19

A network administrator has been asked to provide a graphic representation of exactly where the company network wiring and equipment are located in the building. What is this type of drawing?

logical topology

* physical topology

cable path

wiring grid

access topology

20
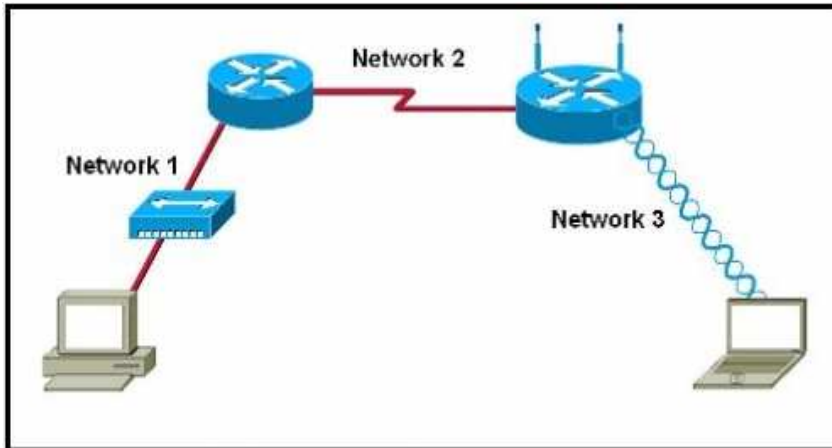
Refer to the exhibit. Which statement describes the media access control methods that are used by the networks in the exhibit?

All three networks use CSMA/CA

None of the networks require media access control.

* Network 1 uses CSMA/CD and Network 3 uses CSMA/CA.

Network 1 uses CSMA/CA and Network 2 uses CSMA/CD.

Network 2 uses CSMA/CA and Network 3 uses CSMA/CD.

Chapter 8: OSI Physical Layer

1

Which type of cable run is most often associated with fiber-optic cable?

* backbone cable

horizontal cable

patch cable

work area cable

2

In most business LANs, which connector is used with twisted-pair networking cable?

BNC

RJ-11

* RJ-45

Type F

3

When is a straight-through cable used in a network?

when connecting a router through the console port

when connecting one switch to another switch

* when connecting a host to a switch

when connecting a router to another router

4

With the use of unshielded twisted-pair copper wire in a network, what causes crosstalk within the cable pairs?

* the magnetic field around the adjacent pairs of wire

the use of braided wire to shield the adjacent wire pairs

the reflection of the electrical wave back from the far end of the cable

the collision caused by two nodes trying to use the media simultaneously

5

Which OSI layer is responsible for binary transmission, cable specification, and physical aspects of network communication?

Presentation

Transport

Data Link

* Physical

6

An installed fiber run can be checked for faults, integrity, and the performance of the media by using what device?

light injector

* OTDR

TDR

multimeter

7

XYZ Company is installing new cable runs on their data network. What two types of cable would most commonly be used for new runs? (Choose two.)

* coax

Cat4 UTP

Cat5 UTP

* Cat6 UTP

STP

8

What is a possible effect of improperly applying a connector to a network cable?

Data will be forwarded to the wrong node.

* Data transmitted through that cable may experience signal loss.

An improper signaling method will be implemented for data transmitted on that cable.

The encoding method for data sent on that cable will change to compensate for the

improper connection.

9

What are three measures of data transfer? (Choose three.)

goodput

* frequency

amplitude

* throughput

crosstalk

**bandwidth

10

Refer to the exhibit. Which type of Category 5 cable is used to make an Ethernet

connection between Host A and Host B?

coax cable

rollover cable

* crossover cable

straight-through cable

11

In LAN installations where potential electrical hazards or electromagnetic interference

may be present, what type of media is recommended for backbone cabling?

coax

* fiber

Cat5e UTP

Cat6 UTP

STP

12

Which fiber connector supports full duplex Ethernet?

*

13

Which method of signal transmission uses radio waves to carry signals?

electrical

optical

* wireless

acoustic

14

Which characteristics describe fiber optic cable? (Choose two.)

* It is not affected by EMI or RFI.

Each pair of cables is wrapped in metallic foil.

It combines the technique of cancellation, shielding and twisting to protect data.

It has a maximum speed of 100 Mbps.

* It is the most expensive type of LAN cabling.

15

Which of the following is a characteristic of single-mode fiber-optic cable?

* generally uses LEDs as the light source

relatively larger core with multiple light paths

less expensive than multimode

generally uses lasers as the light source

16

What is considered a benefit of wireless as a media choice?

* more host mobility

lower security risks

reduced susceptibility to interference

less impact of the surroundings on the effective coverage area

17

What characteristic of UTP cable helps reduce the effects of interference?

the metal braiding in the shielding

the reflective cladding around core

* the twisting of the wires in the cable

the insulating material in the outer jacket

18

What is a primary role of the Physical layer in transmitting data on the network?

* create the signals that represent the bits in each frame on to the media

provide physical addressing to the devices

determine the path packets take through the network

control data access to the media

Chapter 9: Ethernet

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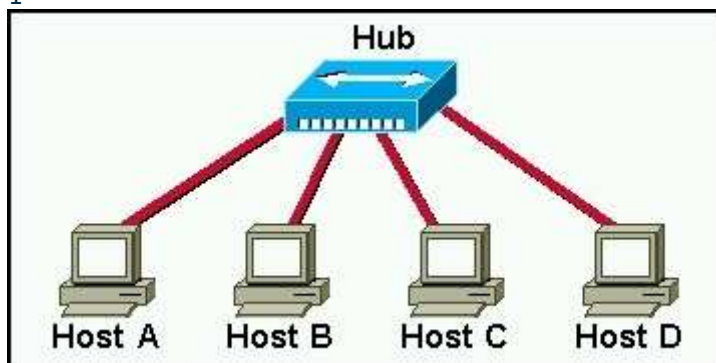
In the graphic, Host A has reached 50% completion in sending a 1 KB Ethernet frame to Host D when Host B wishes to transmit its own frame to Host C. What must Host B do?

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.

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

Network layer

Transport layer

* Physical layer

Application layer

Session layer

* Data-link layer

3 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

4 What three primary functions does data link layer encapsulation provide? (Choose three.)

* addressing

* error detection

* frame delimiting

port identification

path determination

IP address resolution

5 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.

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

recognizes streams of bits

* identifies the network layer protocol

* makes the connection with the upper layers identifies the source and destination applications

* insulates network layer protocols from changes in physical equipment

determines the source of a transmission when multiple devices are transmitting

7 What does the IEEE 802.2 standard represent in Ethernet technologies?

MAC sublayer

Physical layer

* Logical Link

Control sublayer

Network layer

8 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.

9 Refer to the exhibit. Which option correctly matches the frame field type with the contents that frame field includes?

* header field - preamble and stop frame

data field - network layer packet

data field - physical addressing

trailer field - FCS and SoF

10 Host A has an IP address of 172.16.225.93 and a mask of 255.255.248.0. Host A needs to communicate with a new host whose IP is 172.16.231.78. Host A performs the ANDing operation on the destination address. What two things will occur? (Choose two.)

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

Host A will broadcast an ARP request for the MAC of its default gateway.

A result of 172.16.225.0 will be obtained.

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

A result of 172.16.224.0 will be obtained.

* A result of 172.16.225.255 will be obtained.

11 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.

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

application

physical

transport

internet

data link

* network access

13 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

14
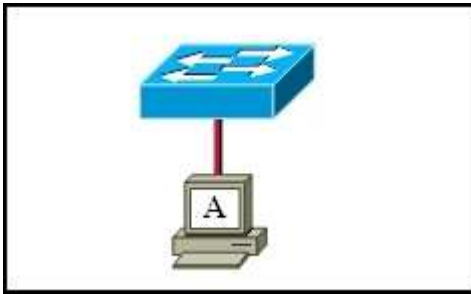
Refer to the exhibit. The switch and workstation are administratively configured for full-duplex operation. Which statement accurately reflects the operation of this link?

* 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.

15
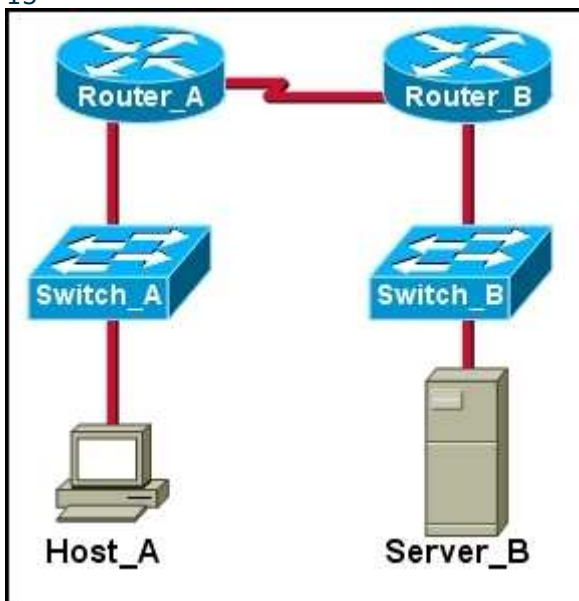
Refer to the exhibit. Host_A is attempting to contact Server_B. Which statements correctly describe the addressing Host_A will generate in the process? (Choose two.)

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.

16 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

17 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

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

* coaxial thicknet

copper UTP

coaxial thinnet

optical fiber

* shielded twisted pair

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

85

90

* BA

A1

B3

1C

20 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

```
Interface: 192.168.1.17 --- 0x8
    Interface Address       Physical Address        Type
    192.168.1.1             00-01-5c-22-4f-c2        dynamic
    192.168.1.27            00-10-b4-8c-10-9f        dynamic
```

Refer to the exhibit. What command was executed on a host computer to produce the results shown?

route PRINT

* arp -a

arp -d

netstat

telnet

Chapter 10: Planning and Cabling Networks

1

Refer to the exhibit. A student working in the lab selects a cable that is wired as shown.

Which connection types can successfully be made with this cable? (Choose two.)

connecting a PC to a router's console port

* connecting two routers together via their fast ethernet ports

* connecting two switches together at gigabit speeds

connecting a PC to a switch at Gigabit Ethernet speeds

connecting two devices with the same interface type at Fast Ethernet speeds

2

Which three statements are true about the role of routers in the network? (Choose three.)

They propagate broadcasts.

They enlarge collision domains.

They segment broadcast domains.

* They interconnect different network technologies.

* Each router interface requires a separate network or subnet.

* They maintain a common frame format between LAN and WAN interfaces.

3

Refer to the exhibit. A network administrator has decided to use packet capture software to evaluate all traffic from the student subnet on the way to the Internet. To ensure that all packets are captured, what network device should be used to connect the monitoring station to the network between R1 and R2?

* router

hub

switch

wireless access point

4

A network administrator is required to use media in the network that can run up to 100 meters in cable length without using repeaters. The chosen media must be inexpensive and easily installed. The installation will be in a pre-existing building with limited cabling space. Which type of media would best meet these requirements?

STP

* UTP

coaxial

single-mode fiber

multimode fiber

5

Refer to the exhibit. Which three statements are true about the exhibited topology? (Choose three.)

Hosts B and C are in the same subnet.

* Five broadcast domains are present.

* Host B is using a crossover cable to connect to the router.

Four broadcast domains are present.

xFive networks are shown.

Host B is using a rollover cable to connect to the router.

6

Which three types of connectors are commonly associated with Cisco's V.35 serial
cables? (Choose three.)

RJ 11

* DB 60

* Winchester 15 pin

DB 9

* smart serial

RJ 45

7

How many host addresses may be assigned on each subnetwork when using the
130.68.0.0 network address with a subnet mask of 255.255.248.0?

30

256

* 2046

2048

4094

4096

8

Refer to the exhibit. Based on the IP configuration shown, what would be the result of
Host A and Host B attempting to communicate outside the network segment?

both host A and B would be successful

* host A would be successful, host B would fail

host B would be successful, host A would fail

both Host A and B would fail

9

Refer to the exhibit. What destination IP address will PC1 place in the header for a
packet destined for PC2?

192.168.1.1

192.168.2.1

192.168.2.2

192.168.3.1

* 192.168.3.54

10

Refer to the exhibit. Which three statements identify the type of cabling that would be used in the segments that are shown? (Choose three.)

Segment 1 uses backbone cabling.

* Segment 1 uses a patch cable.

Segment 3 uses patch cabling.

Segment 3 uses vertical cabling.

* Segment 3 uses horizontal cabling.

* Segment 4 uses vertical cabling.

11

A company is planning to subnet its network for a maximum of 27 hosts. Which subnet mask would provide the needed hosts and leave the fewest unused addresses in each subnet?

255.255.255.0

255.255.255.192

* 255.255.255.224

255.255.255.240

255.255.255.248

12

Refer to the exhibit. A student is setting up a home network primarily used for extensive file transfers, streaming video, and gaming. Which network device is best suited to these types of activities in the topology shown?

wireless access point

router

hub

* switch

13

Refer to the exhibit. How many subnets are required to support the network that is shown?

2

* 3

4

5

14

What does the term "attenuation" mean in data communication?

* loss of signal strength as distance increases

time for a signal to reach its destination

leakage of signals from one cable pair to another

strengthening of a signal by a networking device

15

To establish a console connection from a computer to a Cisco router, which cable wiring option would be used?

* crossover cable

straight through cable

rollover cable

V.35 cable

16

What makes fiber preferable to copper cabling for interconnecting buildings? (Choose three.)

* greater distances per cable run

lower installation cost

xlimited susceptibility to EMI/RFI

durable connections

xgreater bandwidth potential

easily terminated

17

Refer to the exhibit. A network technician has been allocated the 192.168.1.0/24 private IP address range for use in the network that shown in the exhibit. Which subnet mask would be used to meet the host requirements for segment A of this internetwork?

* 255.255.255.128

255.255.255.192

255.255.255.224

255.255.255.240

255.255.255.248

18

Which subnet mask would be assigned to the network address of 192.168.32.0 to provide 254 useable host addresses per subnetwork?

255.255.0.0

* 255.255.255.0

255.255.254.0

255.255.248.0

19

What type of network cable is used between a terminal and a console port?

cross-over

straight-through

* roll-over

patch cable

20

Which option identifies the primary interface which would be used for initial configuration of a Cisco router?

AUX interface

Ethernet interface

serial interface

* console interface

21

What are three common methods for setting a UTP Ethernet port to MDI or MDIX operation? (Choose three.)

direct configuration of the device

* cable color code association

cable selection and configuration

use of cable testers to determine pinouts

* the enabling of the mechanism to electrically swap the transmit and receive pairs

* the automatic detection and negotiating of MDI/MDIX operation of the port

22

Which device is used to create or divide broadcast domains?

hub

switch

bridge

* router

repeater

23

Refer to the exhibit. Assume that all devices are using default settings. How many subnets are required to address the topology that is shown?

1

3

4

* 5

7

Chapter 11: Configuring and Testing Your Network

1

Refer to the exhibit. What command will place the router into the correct mode to configure an appropriate interface to connect to a LAN?

UBAMA# configure terminal

UBAMA(config)# line vty 0 4

UBAMA(config)# line console 0

UBAMA(config)# interface Serial 0/0/0

* UBAMA(config)# interface FastEthernet 0/1

2

In a Cisco router, when do changes made to the running-configuration take effect?

after a system restart

as the commands are entered

when logging off the system

* when the configuration is saved to the startup-configuration

3

Refer to the exhibit. A technician applies the configuration in the exhibit to a clean router. To verify the configuration, the technician issues the show running-config command in the CLI session with the router. What lines should the technician expect to see in the router output from the show running-config command?

enable password class

line console 0

password ccna

enable secret cisco

enable password class

line console 0

password ccna

enable secret 5 1v0/3$QyQWmJyT7zCa/yaBRasJm0

enable password class

line console 0

password ccna

enable secret cisco

enable password 7 14141E0A1F17

line console 0

password 7 020507550A

* enable secret 5 1v0/3$QyQWmJyT7zCa/yaBRasJm0

enable password 7 14141E0A1F17

line console 0

password 7 020507550A

4

When network services fail, which port is most often used to access a router for
management purposes?

AUX

Ethernet

* Console

Telnet

SSH

5

Refer to the exhibit. A network administrator on HostA has problems accessing the FTP
server. Layer three connectivity testing was successful from HostA to the S1 interface of
RouterB. Which set of commands will allow the network administrator to telnet to
RouterB and run debug commands?

RouterB(config)# enable secret class

RouterB(config)# line vty 0 4

RouterB(config-if)# login

RouterB(config)# enable secret class

RouterB(config)# line vty 0 2

RouterB(config-vty)# password cisco

RouterB(config-vty)# login

* RouterB(config)# enable secret class

RouterB(config)# line vty 0

RouterB(config-line)# password cisco

RouterB(config-line)# login

RouterB(config)# enable secret class

RouterB(config)# line aux 0

RouterB(config-line)# password cisco

RouterB(config-line)# login

RouterB(config)# enable secret class

RouterB(config)# line aux 0

RouterB(config-vty)# password cisco

RouterB(config-vty)# login

6

Users in the network are experiencing slow response time when doing file transfers to a

remote server. What command could be issued to determine if the router has

experienced any input or output errors?

show running-config

show startup-config

* show interfaces

show ip route

show version

show memory

7

Refer to the exhibit. Which names correctly identify the CLI mode represented by the

prompt for Switch-East4#? (Choose two.)

line configuration mode

user executive mode

* global configuration mode

privileged executive mode

interface configuration mode

* enable mode

8

What command is used to change the default router name to Fontana?

Router# name Fontana

Router# hostname Fontana

Router(config)# name Fontana

* Router(config)# hostname Fontana

9

The serial connection shown in the graphic needs to be configured. Which configuration commands must be made on the Sydney router to establish connectivity with the Melbourne site? (Choose three.)

* Sydney(config-if)# ip address 201.100.53.2 255.255.255.0

* Sydney(config-if)# no shutdown

Sydney(config-if)# ip address 201.100.53.1 255.255.255.224

* Sydney(config-if)# clock rate 56000

Sydney(config-if)# ip host Melbourne 201.100.53.2

10

Refer to the exhibit. The output is shown for the show ip route command executed on Router A. What does the IP address 192.168.2.2 represent?

Gateway for the 192.168.1.0 network

Gateway for the 192.168.3.0 network

IP assigned to the serial port on Router A

* IP assigned to the serial port on Router B

11

Refer to the exhibit. What additional command is required to allow remote access to this switch?

NA-SW1(config-if)# no shutdown

NA-SW1(config)# enable password password

* NA-SW1(config)# ip default-gateway address

NA-SW1(config-if)# description description

12

Immediately after a router completes its boot sequence, the network administrator wants to check the routers configuration. From privileged EXEC mode, which of the following commands can the administrator use for this purpose? (Choose two.)

show flash

show NVRAM

* show startup-config

* show running-config

show version

13

Which three terms correctly define the forms of help available within the Cisco IOS?
(Choose three.)

hot keys

* context-check

context-sensitive

* structured check

command override

* command syntax check

14

Refer to the exhibit. A student is responsible for the IP addressing, configuration and connectivity testing of the network shown in the graphic. A ping from host B to host C results in a destination unreachable but a ping from host B to host A was successful. What two reasons could account for this failure based on the graphic and partial router output for the Dallas router? (Choose two.)

The host A is turned off.

The Fa0/0 interface on Dallas is shutdown.

The LAN cable is disconnected from host B.

* The S0/0/1 IP address of Dallas is improperly configured.

* The Fa0/0 interface on Dallas is in a different subnet than host B.

The clock rate is missing on the serial link between Dallas and NYC.

15

Which combination of keys would be used at the CLI prompt to interrupt a ping or traceroute process?

* Ctrl-C

Ctrl-P

Ctrl-R

Ctrl-Shift-6

Ctrl-Z

16

The connection between routers B and C has been successfully tested. However, after rebooting router C, the administrator noticed the response time between networks 10.10.3.0 and 10.10.4.0 is slower. Ping between the two routers is successful. A trace route indicates three hops from router B to router C. What else can be done to

troubleshoot the problem?

Ping router B S0/1 connection from router C.

Trace the connection between router B to router C S0/1.

Issue a show ip route command in router B to verify routing is enabled.

* Issue a show interfaces command on router C.

17

In a Cisco device, where is the IOS file stored prior to system startup?

RAM

ROM

* Flash

NVRAM

18

On a Cisco router, which interface would be used to make the initial configuration?

toinen

19

A network administrator needs to keep the user ID, password, and session contents private when establishing remote CLI connectivity with a router to manage it. Which access method should be chosen?

Telnet

Console

AUX

* SSH

Final Exam

1 A PC can not connect to any remote websites, ping its default gateway, or ping a printer that is functioning properly on the local network segment. Which action will verify that the TCP/IP stack is functioning correctly on this PC?

Use the ipconfig /all command at the host's command prompt.

* Use the ping 127.0.0.1 command at the command prompt.

Use the traceroute command at the command prompt to identify any failures on the path to the gateway.

Use FTP to check for connectivity to remote sites.

Download a troubleshooting tool from the PC manufacturer's website.

2
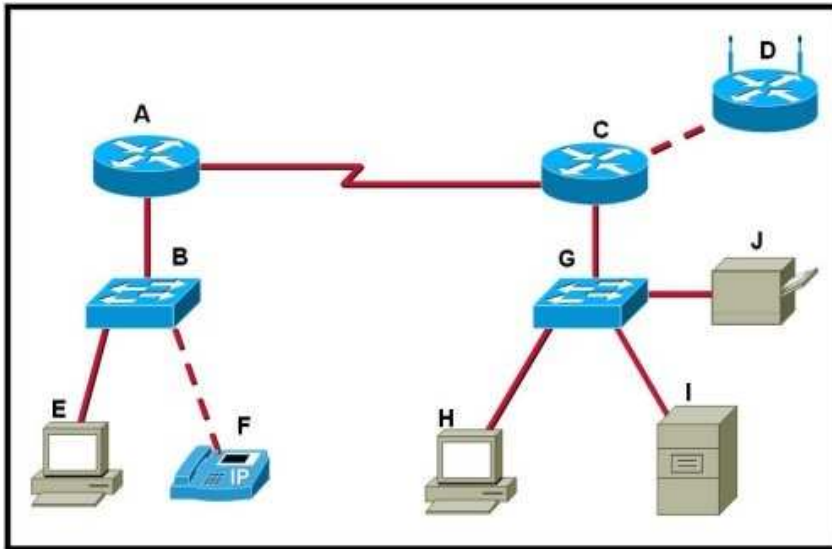
Refer to the exhibit. Which set of devices contains only intermediary devices?

* A, B, D, G

A, B, E, F

C, D, G, I

G, H, I, J

3
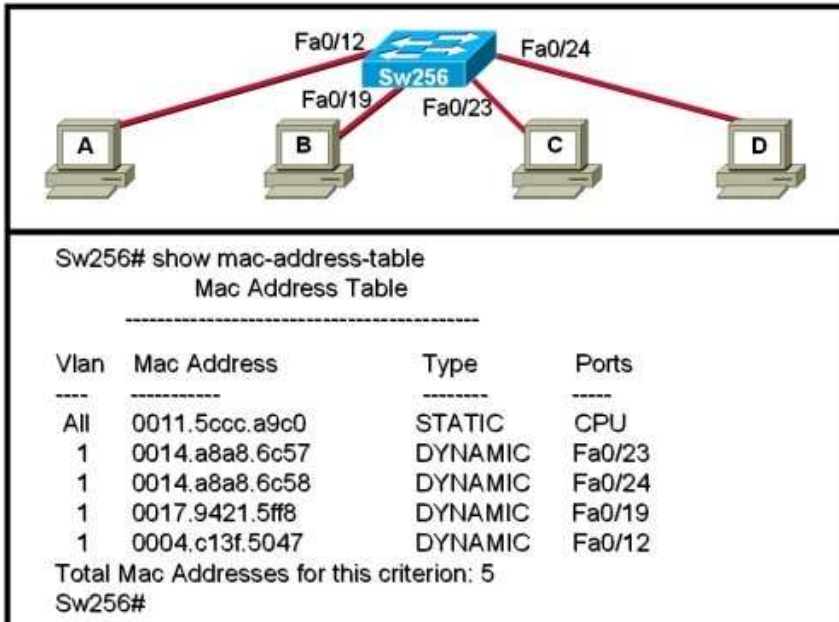
Refer to the exhibit. When computer A sends a frame to computer D, what computers receive the frame?

* only computer D

only computer A and computer D

only computer B, computer C, and computer D

all computers

4 Which password is automatically encrypted when it is created?

vty

aux

console

* enable secret

enable password

5 Which three statements characterize the transport layer protocols? (Choose three.)

* TCP and UDP port numbers are used by application layer protocols.

TCP uses port numbers to provide reliable transportation of IP packets.

UDP uses windowing and acknowledgments for reliable transfer of data.

* TCP uses windowing and sequencing to provide reliable transfer of data.

* TCP is a connection-oriented protocol. UDP is a connectionless protocol.

6 Which type of media is immune to EMI and RFI? (Choose two.)

10 Base-T

10 Base-2

10 Base-5

* 100 Base-FX

100 Base TX

* 1000 Base LX

7

```
C:\> ipconfig /all

Windows IP Configuration

        Host Name . . . . . . . . . . . : md-wxp2
        Primary Dns Suffix  . . . . . . . : cisco.com
        Node Type . . . . . . . . . . .. . : Hybrid
        IP Routing Enabled. . . . . . . : No
        WINS Proxy Enabled. . . . . . . : No
        DNS Suffix Search List. . . . . . : cisco.com

Ethernet adapter Wireless Network Connection:

        Connection-specific DNS Suffix  . : cisco.com
        Description . . . . . . . . . . . . : Intel(R) PRO/Wireless 3945ABG
        Physical Address. . . . . . . . . : 00-18-DE-C7-F3-FB
        Dhcp Enabled. . . . . . . . . . . : No
        IP Address. . . . . . . . . . . . . : 192.168.254.9
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.254.1
        DNS Servers . . . . . . . . . . . : 192.168.64.196
```

Refer to the exhibit. A technician is working on a network problem that requires verification of the router LAN interface. What address should be pinged from this host to confirm that the router interface is operational?

127.0.0.1

192.168.64.196

* 192.168.254.1

192.168.254.9

192.168.254.254

8
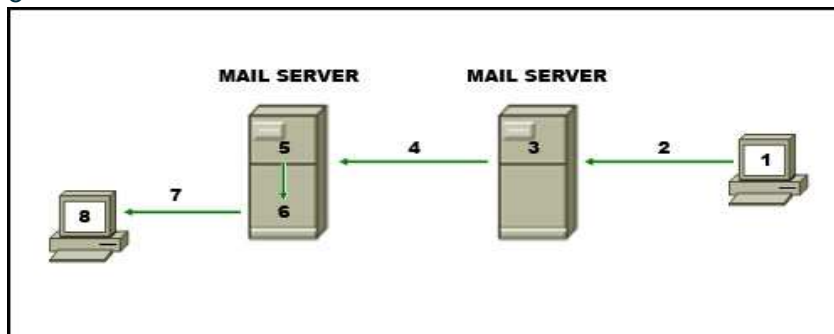
Refer to the exhibit. The diagram represents the process of sending email between clients. Select the list below that correctly identifies the component or protocol used at each numbered stage of the diagram.

1.MUA 2.MDA 3.MTA 4.SMTP 5.MTA 6.POP 7.MDA 8.MUA

1.MUA 2.POP 3.MDA 4.SMTP 5.MTA 6.MDA 7.SMTP 8.MUA

1.MUA 2.POP 3.SMTP 4.MDA 5.MTA 6.SMTP 7.POP 8.MUA

1.MDA 2.SMTP 3.MTA 4.SMTP 5.MTA 6.MUA 7.POP 8.MDA

* 1.MUA 2.SMTP 3.MTA 4.SMTP 5.MTA 6.MDA 7.POP 8.MUA

9
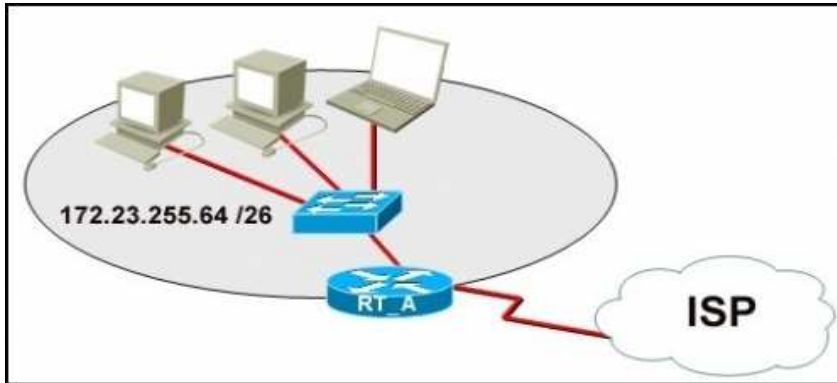
Refer to the exhibit. What function does router RT_A need to provide to allow Internet access for hosts in this network?

* address translation

DHCP services

ftpd

web server

10

Refer to the exhibit. The network containing router B is experiencing problems. A network associate has isolated the issue in this network to router B? What action can be preformed to correct the network issue?

issue the ip address command on interface FastEthernet 0/0

* issue the no shutdown command on interface FastEthernet 0/1

issue the clock rate command on interface Serial 0/0/0

issue the description command on interface Serial 0/0/1

11 Which three IPv4 addresses represent a broadcast for a subnet? (Choose three.)

* 172.16.4.63 /26

172.16.4.129 /26

* 172.16.4.191 /26

172.16.4.51 /27

* 172.16.4.95 /27

172.16.4.221 /27

12 What are three characteristics of CSMA/CD? (Choose three.)

Devices can be configured with a higher transmission priority.

A jam signal indicates that the collision has cleared and the media is not busy.

* A device listens and waits until the media is not busy before transmitting.

The device with the electronic token is the only one that can transmit after a collision.

* All of the devices on a segment see data that passes on the network medium.

* After detecting a collision, hosts can attempt to resume transmission after a random time delay has expired.

13 In a Cisco IOS device, where is the startup-configuration file stored?

Flash

* NVRAM

RAM

ROM

14 A routing issue has occurred in you internetwork. Which of the following type of devices should be examined to isolate this error?

access point

host

hub

* router

switch

15 Which OSI layer protocol does IP rely on to determine whether packets have been lost and to request retransmission?

application

presentation

session

* transport

16 Due to a security violation, the router passwords must be changed. What information can be learned from the following configuration entries? (Choose two.) Router(config)# line vty 0 3 Router(config-line)# password c13c0 Router(config-line)# login

The entries specify three Telnet lines for remote access.

* The entries specify four Telnet lines for remote access.

The entries set the console and Telnet password to "c13c0".

Telnet access will be denied because the Telnet configuration is incomplete.

* Access will be permitted for Telnet using "c13c0" as the password.

17 Which prompt represents the appropriate mode used for the copy running-config startup-config command ?

Switch-6J>

* Switch-6J#

Switch-6J(config)#

Switch-6J(config-if)#

Switch-6J(config-line)#

18 Which combination of network id and subnet mask correctly identifies all IP addresses from 172.16.128.0 through 172.16.159.255?

172.16.128.0 255.255.255.224

172.16.128.0 255.255.0.0

172.16.128.0 255.255.192.0

* 172.16.128.0 255.255.224.0

172.16.128.0 255.255.255.192

19 When must a router serial interface be configured with the clock rate command?

when the interface is functioning as a DTE device

when the interface timers have been cleared

when the connected DTE device is shut down

* when the interface is functioning as a DCE device

20 When connectionless protocols are implemented at the lower layers of the OSI model, what are usually used to acknowledge the data receipt and request the retransmission of missing data?

connectionless acknowledgements

* upper-layer connection-oriented protocols

Network layer IP protocols

Transport layer UDP protocols

21 A technician is asked to secure the privileged EXEC mode of a switch by requiring a password. Which type of password would require this login and be considered the most secure?

console

enable

* enable secret

VTY

22
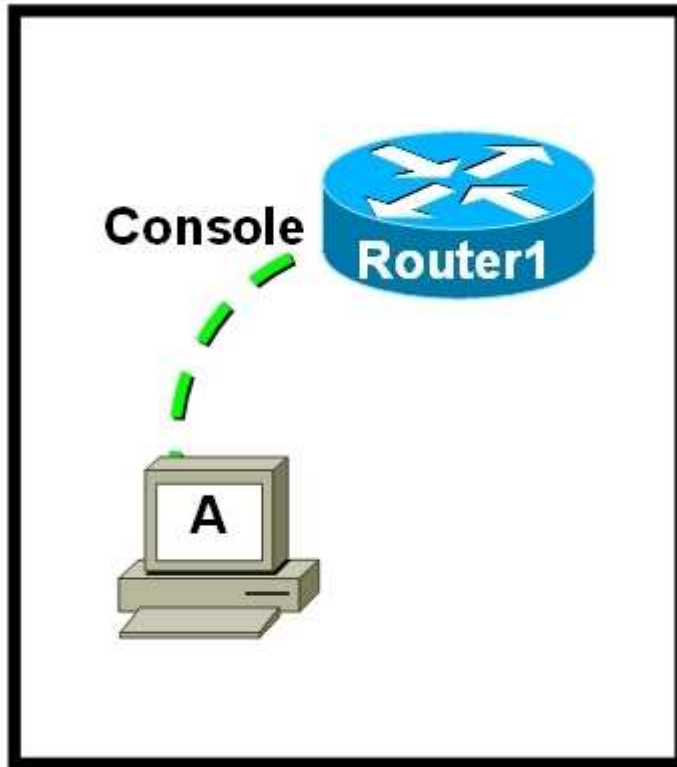
Refer to the exhibit. What is required on host A for a network technician to create the

initial configuration on RouterA?

a FTP client

a telnet client

* a terminal emulation program

a web browser

23
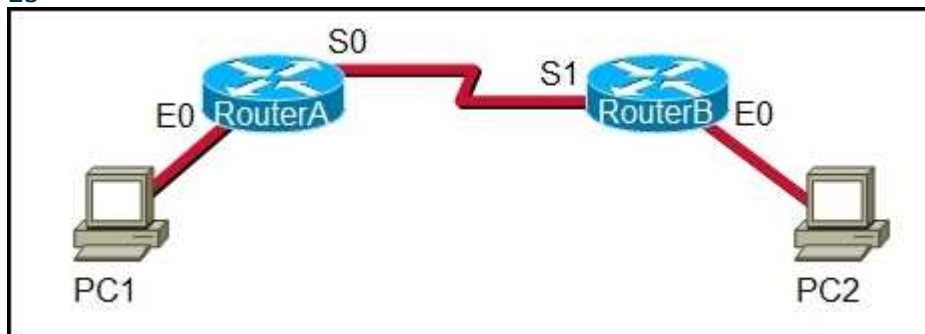
Refer to the exhibit. A network administrator remotely accesses the CLI of RouterB from

PC1. Which two statements are true about the application layer protocol that is used to make this connection? (Choose two.)

The data is encrypted.

* The connection type is called a VTY session.

A server process is running on PC1.

A GET request is sent to RouterB.

* The application name is the same for the service, protocol, and client.

24 The Layer 4 header contains which type of information to aid in the delivery of data?

* service port number

host logical address

device physical address

virtual connection identifier

25
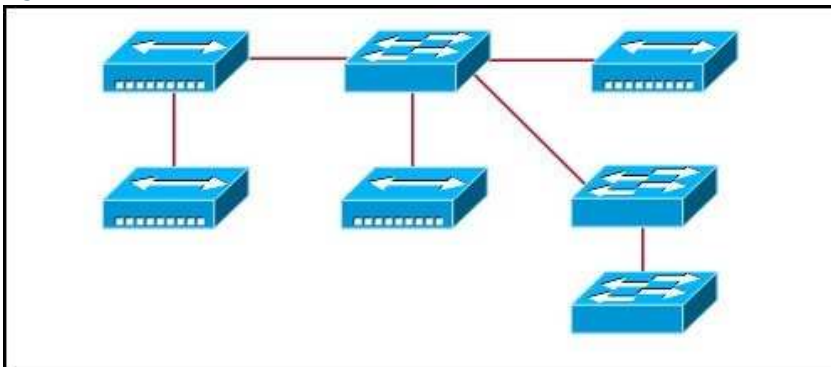
Refer to the exhibit. What two facts can be determined about the exhibited topology? (Choose two.)

* A single broadcast domain is present

Two logical address ranges are required.

Three broadcast domains are shown.

Four networks are needed.

* Five collision domains exist.

26
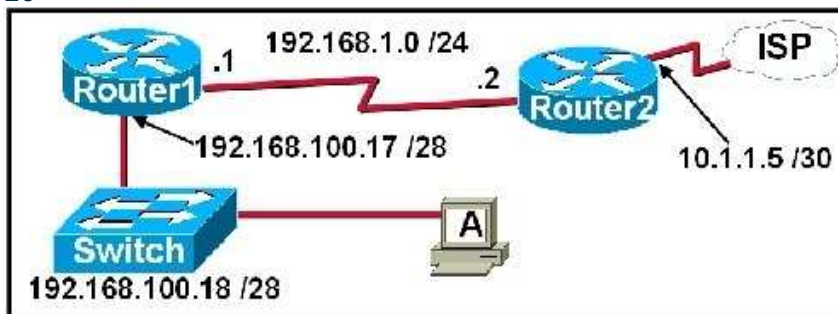
Refer to the exhibit. A network technician is trying to determine the correct IP address configuration for Host A. What is a valid configuration for Host A?

IP address: 192.168.100.19; Subnet Mask: 255.255.255.248; Default Gateway: 192.16.1.2

* IP address: 192.168.100.20; Subnet Mask: 255.255.255.240; Default Gateway: 192.168.100.17

IP address: 192.168.100.21; Subnet Mask: 255.255.255.248; Default Gateway: 192.168.100.18

IP address: 192.168.100.22; Subnet Mask: 255.255.255.240; Default Gateway: 10.1.1.5

IP address: 192.168.100.30; Subnet Mask: 255.255.255.240; Default Gateway: 192.168.1.1

IP address: 192.168.100.31; Subnet Mask: 255.255.255.240; Default Gateway: 192.168.100.18

27
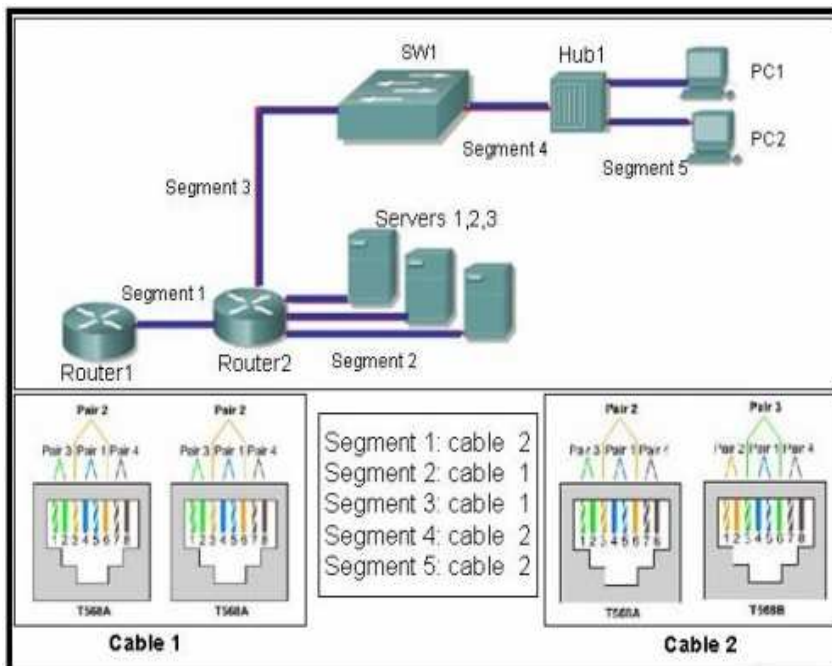
Refer to the exhibit. Cable 1 and cable 2 have the ends wired for specific physical layer requirements. The table lists each segment by number and the cable which has been installed by the network technician between the network components on that segment. From the data given, which segments have the correct cable installed? (Choose three.)

* segment1

segment2

* segment3

* segment4

segment5

28 What is true regarding network layer addressing? (Choose three.)

uses a flat structure

prevent broadcasts

* heirarchical

* uniquely identifies each host

48 bits in length

* contains a network portion

29

```
Gateway of last resort is 192.168.1.3 to network 0.0.0.0

10.0.0.0/24 is subnetted, 2 subnets

R      10.1.1.0 [120/2] via 192.168.1.3, 00:00:03, FastEthernet0/1

R      10.1.2.0 [120/2] via 192.168.1.3, 00:00:03, FastEthernet0/1

192.168.1.0/29 is subnetted, 1 subnets

C      192.168.1.0 is directly connected, FastEthernet0/1

192.168.2.0/29 is subnetted, 1 subnets

C      192.168.2.0 is directly connected, FastEthernet0/0

S*     0.0.0.0/0  [1/0] via 192.168.1.3
```

Refer to the exhibit. A router, whose table is shown, receives a packet that is destined for 192.168.1.4. How will router treat the packet?

The packet will be dropped.

The packet will be forwarded via FastEthernet 0/0.

* The packet will be forwarded to the destination host.

The packet will be forwarded to the 192.168.1.3 next-hop address.

30

Partial Layer 4 Header			
Bit 0		Bit 16	Bit 31
Source Port	13357	Destination Port	23
Sequence Number	3001		
Header Length, Reserved, Code Bits		Window	1500

Refer to the exhibit. Which two statements describe the information that is represented in the header? (Choose two.)
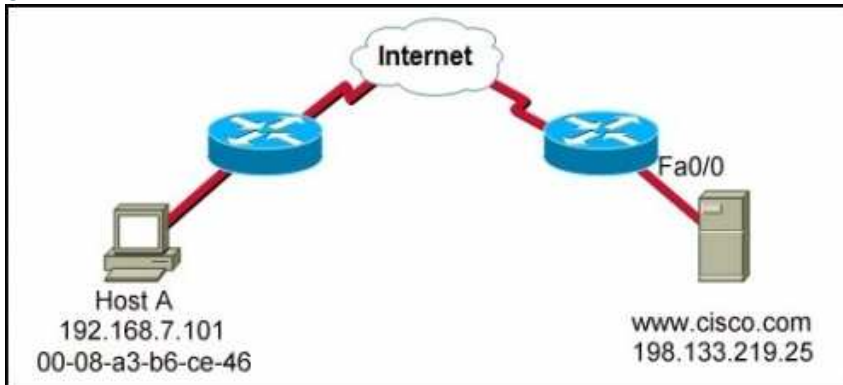
This is a server response.

The UDP protocol is being used.

* The destination port indicates a Telnet session.

* The return segment will contain a source port of 23.

The next session originated from the client of this session will use the source port number 13358.

31

Refer to the exhibit. What is the correct destination socket number for a web page request from Host A to the web server?

00-08-a3-b6-ce-46

* 198.133.219.25:80

http://www.cisco.com

C 198.133.219.0/24 is directly connected, FastEthernet0/0

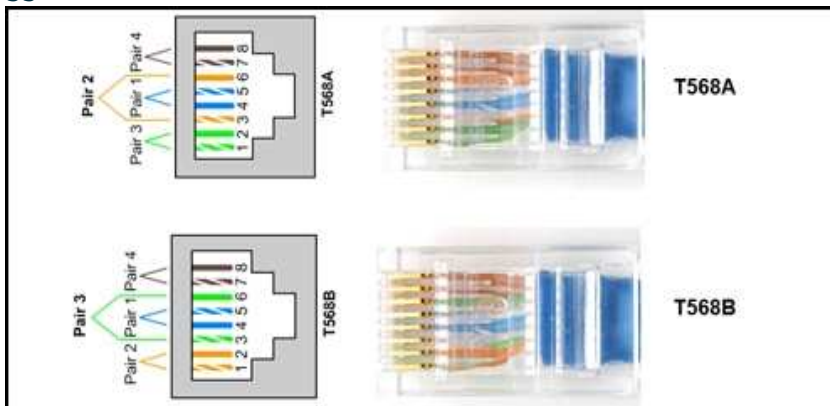32 During the encapsulation process, which identifiers are added at the transport layer?

two networks routing the packets

* two applications communicating the data

two hosts at either end of the communication

two nodes on the local network exchanging the frame

33

Refer to the exhibit. A student has wired each end of a CAT 5e cable as shown. What is the result? (Choose two.)

The cable is unusable and must be rewired.

The cable is suitable for use as a Gigabit Ethernet straight-through.

* The cable is suitable for use as a Fast Ethernet crossover.

The cable is suitable for use as a rollover cable.

The cable is suitable for use as a Gigabit Ethernet crossover.

* The cable is suitable for use between two 100 Mbps Auto-MDIX capable switches.

34
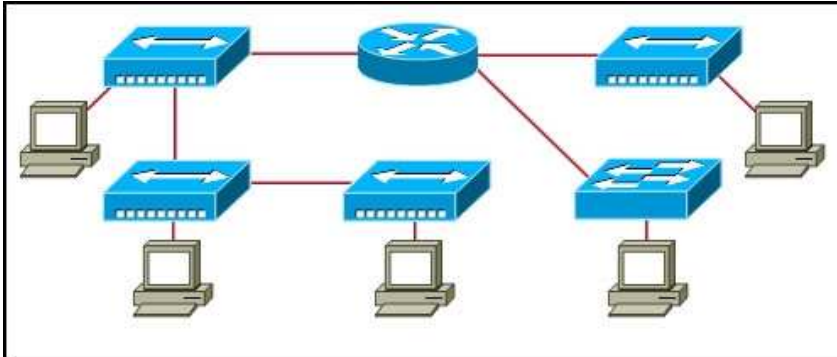
Refer to the exhibit. Assume all devices are using default configurations. How many subnets are required to address the topology that is shown?
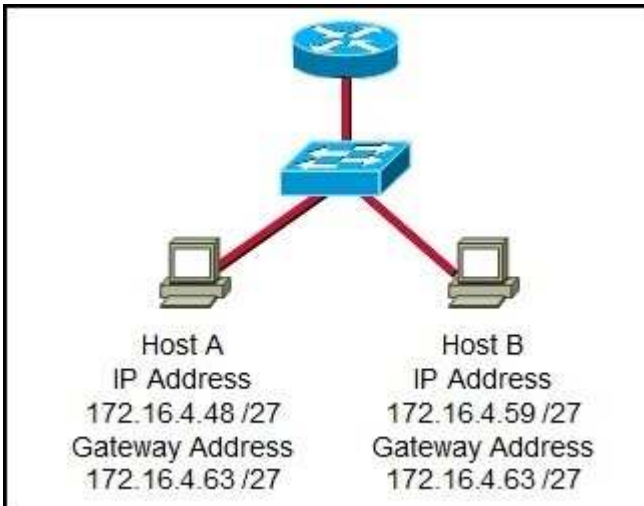
1

* 3

4

5

7

35

Refer to the exhibit. On the basis of the IP configuration that is shown, what is the reason that Host A and Host B are unable to communicate outside the local network?
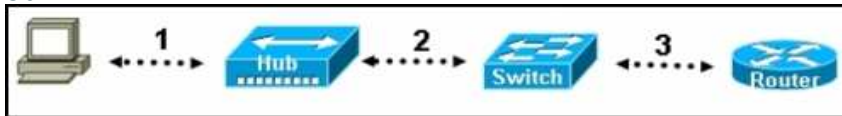
Host A was assigned a network address.

Host B was assigned a multicast address.

Host A and Host B belong to different networks.

* The gateway address was assigned a broadcast address.

36

Refer to the exhibit. Each media link is labeled. What type of cable should be used to connect the different devices?

Connection 1 - rollover cable Connection 2 - straight-through cable Connection 3 - crossover cable

Connection 1 - crossover cable Connection 2 - rollover cable Connection 3 - crossover cable

Connection 1 - straight-through cable Connection 2 - crossover cable Connection 3 - crossover cable

* Connection 1 - straight-through cable Connection 2 - crossover cable Connection 3 - straight-through cable

Connection 1 - crossover cable Connection 2 - straight-through cable Connection 3 - crossover cable

37
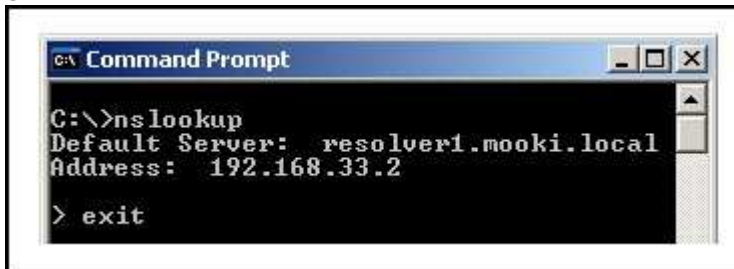
Refer to the exhibit. What does the IP address 192.168.33.2 represent?
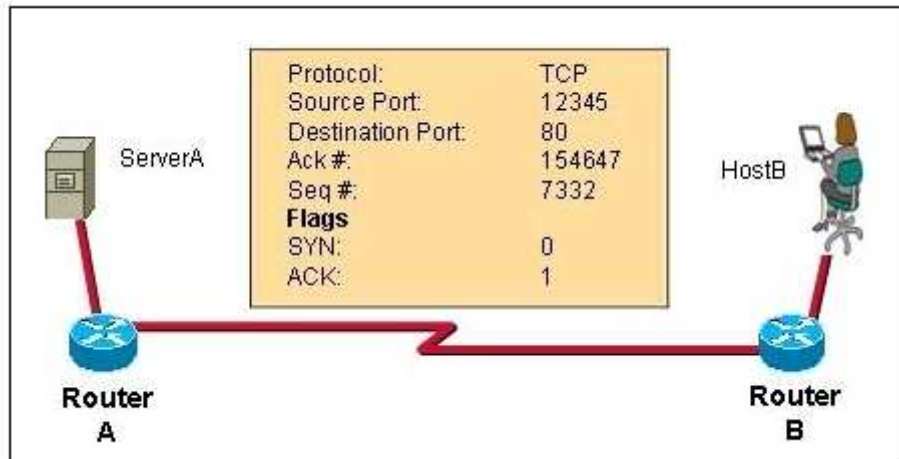
The host's default gateway.

The host's IP address.

* The host's primary domain name server.

The IP address of the website resolver1.mooki.local.

The IP address of the host's homepage.

38

Refer to the exhibit. What two facts can be determined from the information that is given? (Choose two.)

This exchange is part of the three-way handshake.

The source port indicates that a Telnet session has been initiated.

The data is flowing from server to client.

* The destination port indicates that an HTTP session has been initiated.

* The data listed is associated with the transport layer.

The source port does not support communication with the destination port that is listed.

39 Which of the following are the address ranges of the private IP addresses? (Choose three.)

* 10.0.0.0 to 10.255.255.255

200.100.50.0 to 200.100.25.255

150.150.0.0 to 150.150.255.255

* 172.16.0.0 to 172.31.255.255

* 192.168.0.0 to 192.168.255.255

127.16.0.0 to 127.31.255.255

40 Which two functions of the OSI model occur at layer two? (Choose two.)

* physical addressing

encoding

routing

cabling

* media access control

41 Which range of port numbers are reserved for services that are commonly used by applications that run on servers?

0 to 255

* 0 to 1023

1024 to 49151

49152 to 65535

42 As network administrator, what is the subnet mask that allows 510 hosts given the IP address 172.30.0.0?
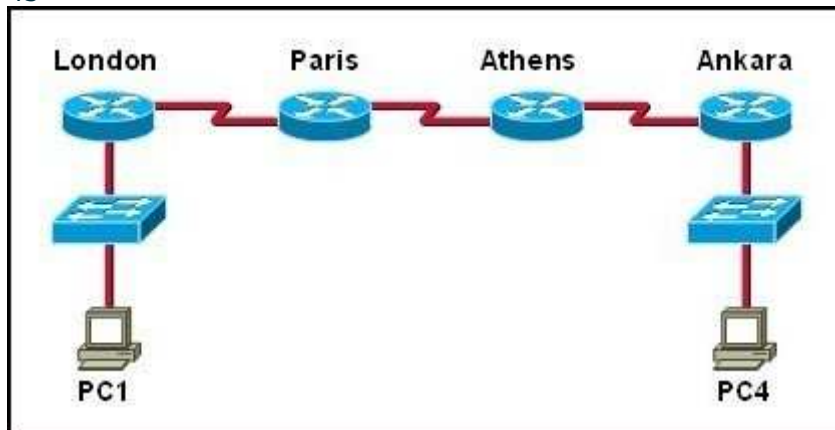
255.255.0.0

255.255.248.0

255.255.252.0

* 255.255.254.0

255.255.255.0

255.255.255.128

43

Refer to the exhibit. The tracert command is initiated from PC1 to the destination PC4. Which device will send a response to the initial packet from PC1?
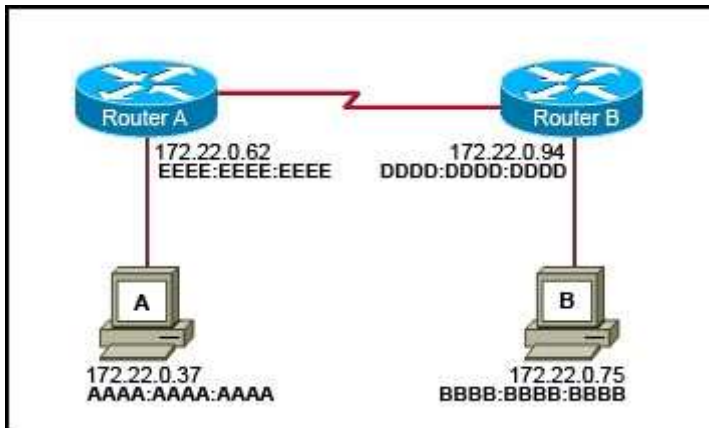
* London

Paris

Athens

Ankara

PC4

44

Refer to the exhibit. Host A is transmitting data to host B. What addresses will host A use to for the destination IP and MAC addresses in this communication?

Destination MAC: BBBB:BBBB:BBBB Destination IP: 172.22.0.62

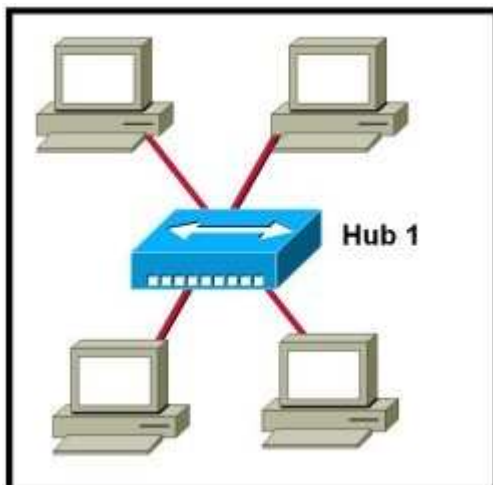Destination MAC: DDDD:DDDD:DDDD Destination IP: 172.22.0.75

Destination MAC: EEEE:EEEE:EEEE Destination IP: 172.22.0.62

Destination MAC: BBBB:BBBB:BBBB Destination IP: 172.22.0.75

* Destination MAC: EEEE:EEEE:EEEE Destination IP: 172.22.0.75

Destination MAC: DDDD:DDDD:DDDD Destination IP: 172.22.0.94

45

Refer to the exhibit. Which logical topology best describes the exhibited network?
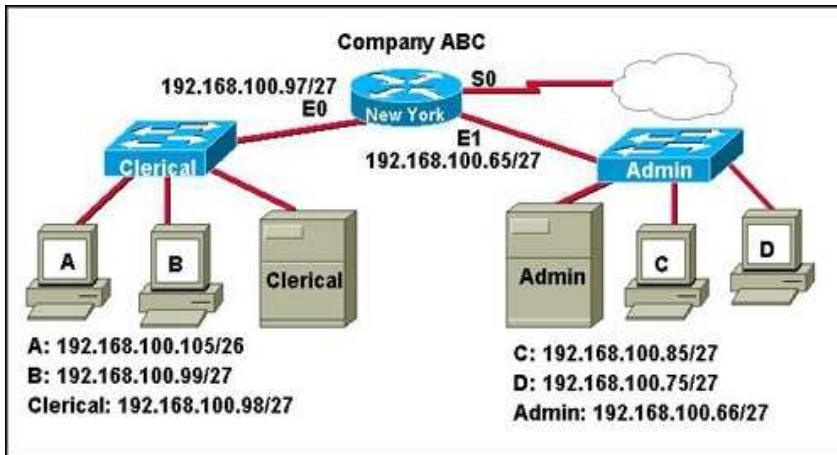
star

ring

point-to-point

* multiaccess

mesh

46

Examine the graphic with current configurations. Host A in the Clerical offices failed and was replaced. Although a ping to 127.0.0.1 was successful, the replacement computer can not access the company network. What is the likely cause of the problem?

IP address incorrectly entered

network cables unplugged

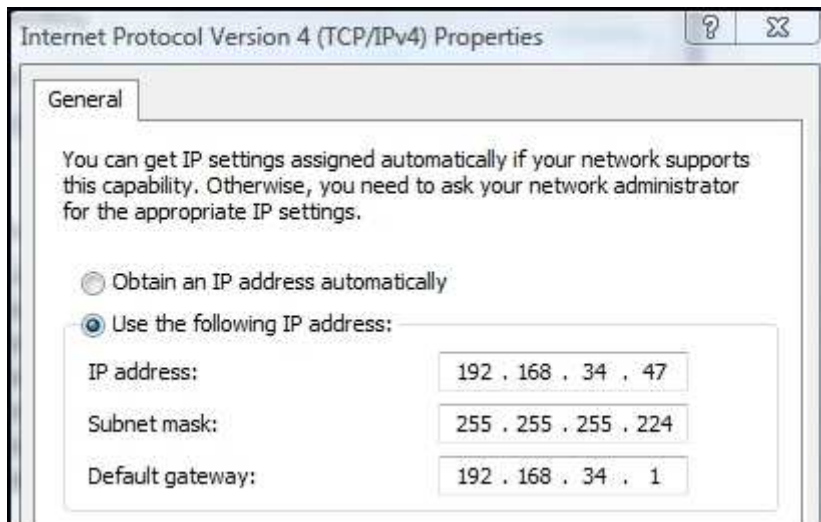* subnet mask incorrectly entered

network card failure

47
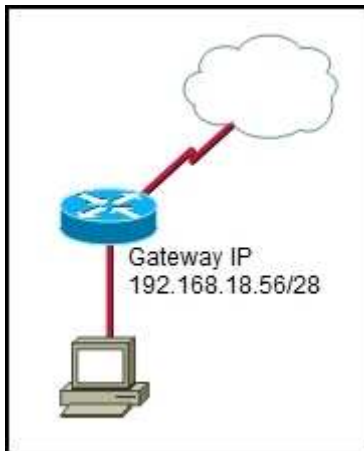
Refer to the exhibit. With the router running NAT, what IP addresses can be applied to the computer to allow access to the Internet? (Choose three.)

192.168.18.38

192.168.18.48

* 192.168.18.49
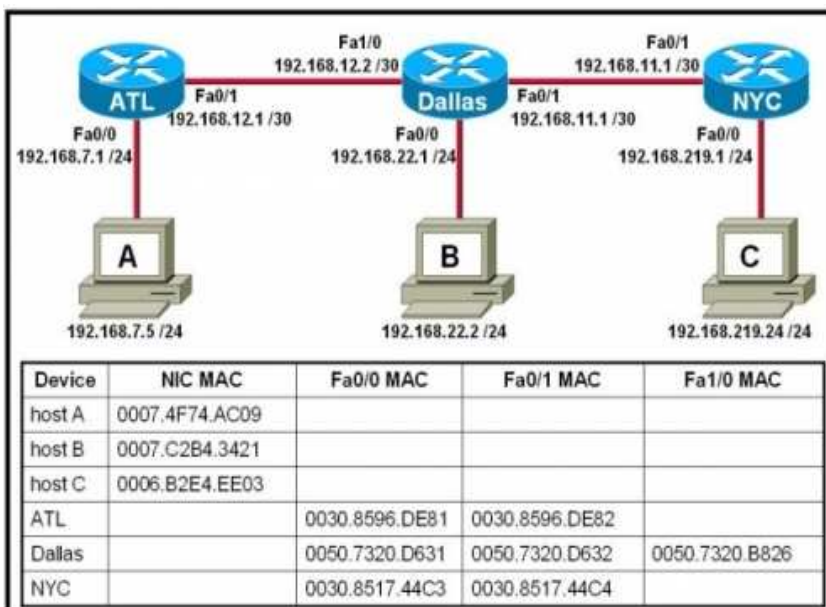
* 192.168.18.52

* 192.168.18.59

192.168.18.63

48

Refer to the exhibit. What three statements are true about the IP configuration that is shown? (Choose three.)

* The address that is assigned to the computer represents private addressing.

* The computer is unable to communicate outside of the local network.

The network of this computer can have 126 hosts.

* The prefix of the computer address is /27.

The IP address that is assigned to the computer is routable on the Internet.

The IP address that is assigned to the computer is a broadcast address.

49

Device	NIC MAC	Fa0/0 MAC	Fa0/1 MAC	Fa1/0 MAC
host A	0007.4F74.AC09			
host B	0007.C2B4.3421			
host C	0006.B2E4.EE03			
ATL		0030.8596.DE81	0030.8596.DE82	
Dallas		0050.7320.D631	0050.7320.D632	0050.7320.B826
NYC		0030.8517.44C3	0030.8517.44C4	

Refer to the exhibit. Host A attempts to establish a TCP/IP session with host C. During this attempt, a frame was captured with the source MAC address 0050.7320.D632 and the destination MAC address 0030.8517.44C4. The packet inside the captured frame has an IP source address 192.168.7.5, and the destination IP address is 192.168.219.24. At which point in the network was this packet captured?

leaving host A

leaving ATL

* leaving Dallas

leaving NYC

50 Which of the following OSI layers offers reliable, connection-oriented data

communication services?

application

presentation

session

transport

* network