Chapter 2 Correct Answers:

1. 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

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. 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

4. 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).
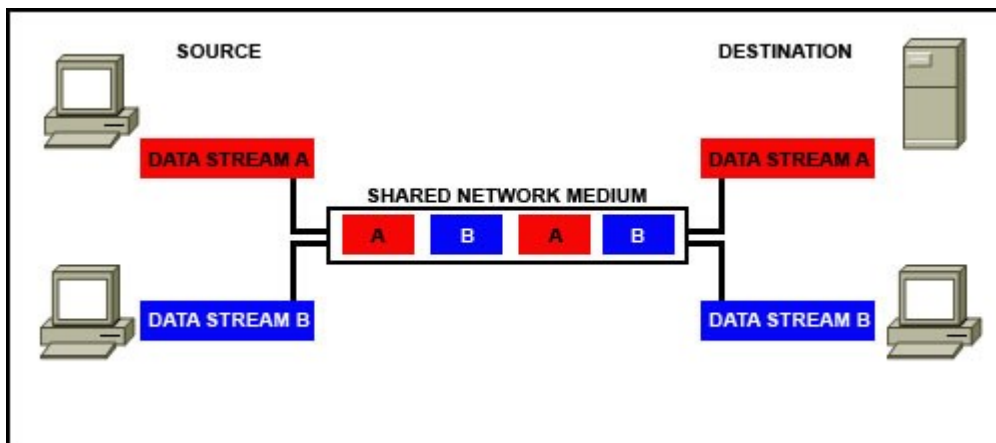
5. Refer to the exhibit. Which networking term describes the data interleaving process represented in the graphic?
        piping
        PDU
        streaming
        multiplexing
        encapsulation

6. 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

7. What can be identified by examining the network layer header?
   the destination device on the local media
   the destination host address
   the bits that will be transferred over the media
   the source application or process creating the data

8. 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

9. Which layer encapsulates the segment into packets?
   physical
   data link
   network
   transport

10. 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

11. 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
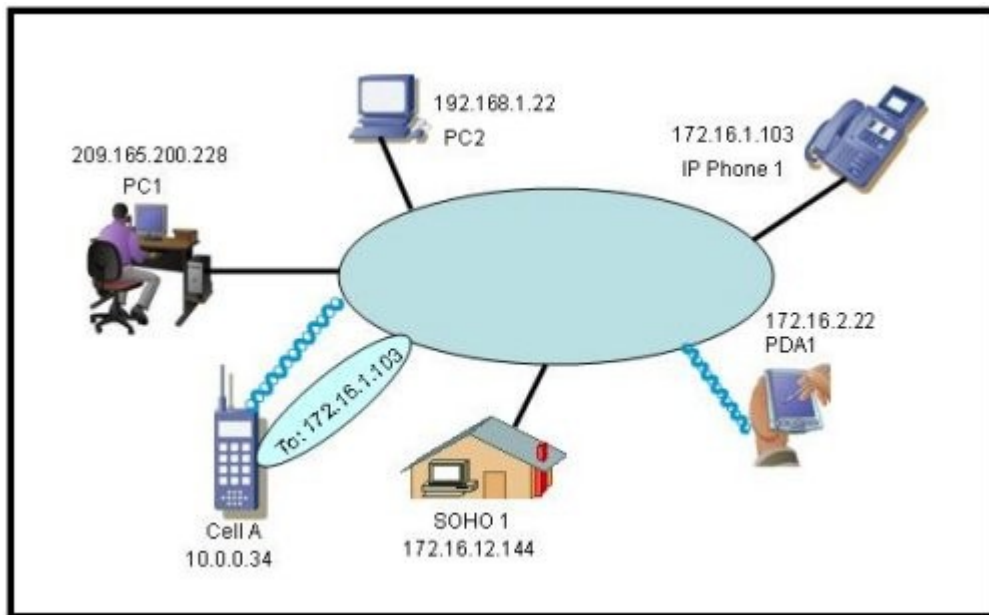
12. Refer to the exhibit. "Cell A" at IP address 10.0.0.34 has established an IP session with "IP Phone 1" at IP address 172.16.1.103. Based upon the graphic, which device type best describes the function of wireless device "Cell A?"
    the destination device
    an end device
    an intermediate device
    a media device

Packet Source   Packet Destination
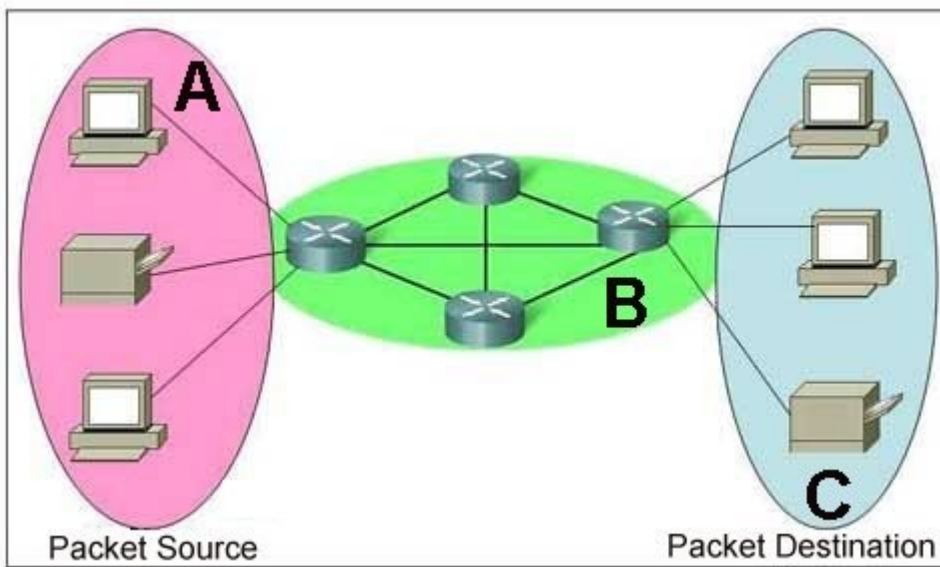
13. Refer to the exhibit. Which term correctly identifies the device type that is included in the area B?
        source
        end
        transfer
        intermediary

14. What device is considered an intermediary device?
        file server
        IP phone
        laptop
        printer
        switch

15. Which characteristic correctly refers to end devices in a network?
        manage data flows
        originate data flow
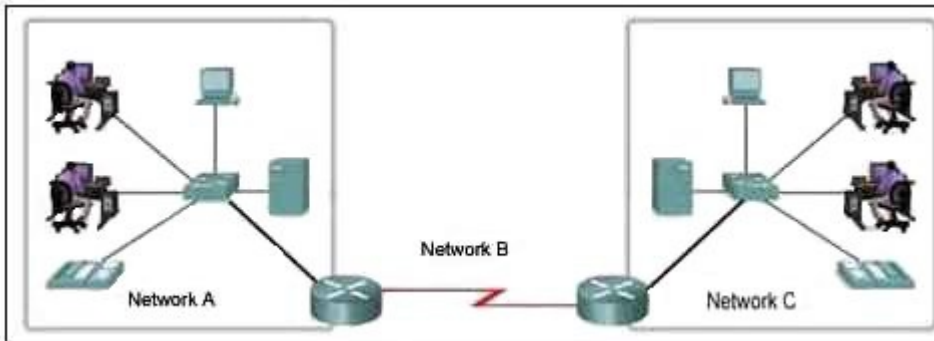   retime and retransmit data signals
        determine pathways for data
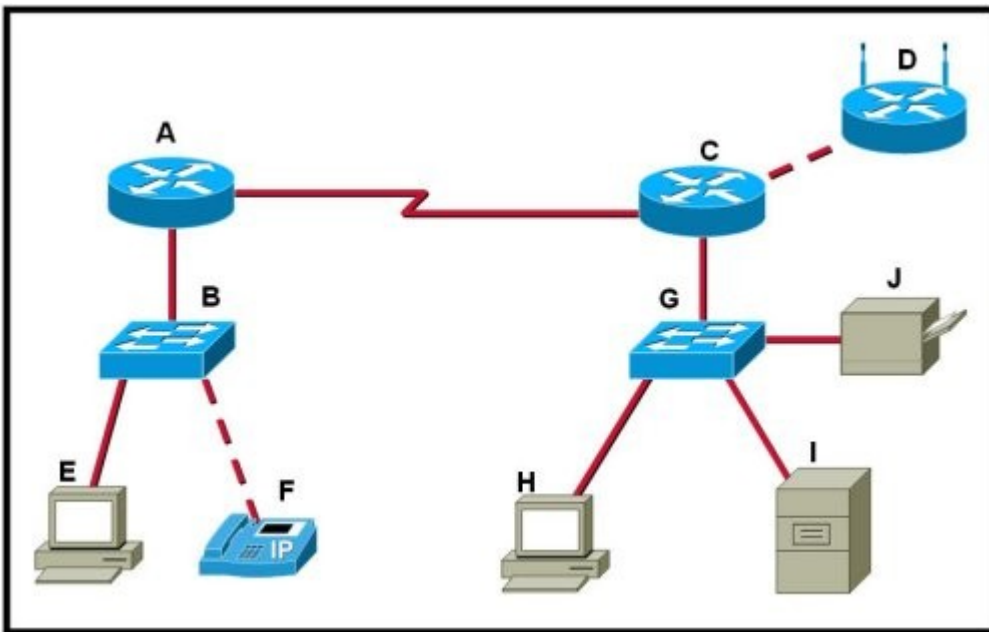
16. Refer to the exhibit. Which set of devices contains only end devices?
    A, C, D
    B, E, G, H
    C, D, G, H, I, J
    D, E, F, H, I, J
    E, F, H, I, J

17. 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.

18. 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

19. 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

20. Which statements correctly identify the role of intermediary devices in the network? (Choose three.)
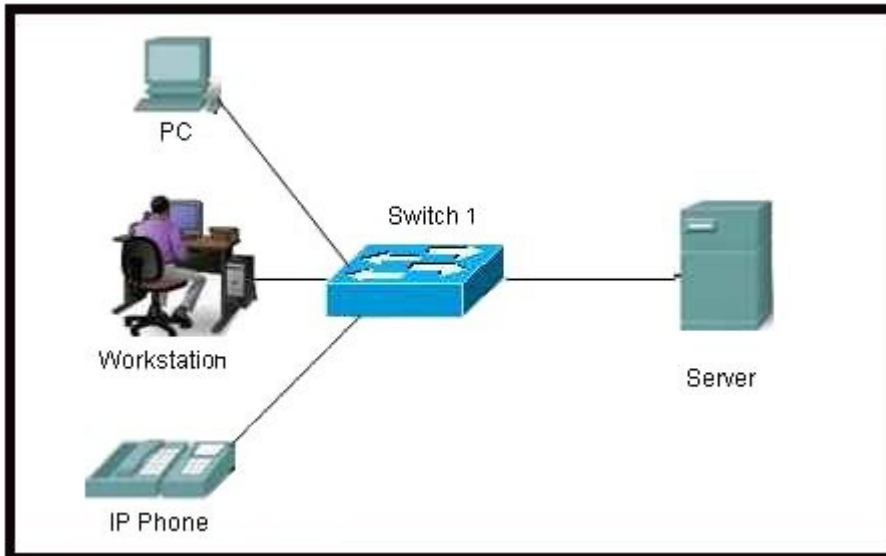**determine pathways for data**
initiate data communications
retime and retransmit data signals
originate the flow of data
manage data flows
final termination point for data flow

21. Refer to the exhibit. What type of network is shown?
WAN
MAN
LAN
WLAN

In your opinion (this has no bearing on your grade), please indicate your interest in this course:
(1) Not At All Interested
(2) Slightly Interested
(3) Interested
(4) Very Interested
(5) Completely Interested

In your opinion (this has no bearing on your grade), please indicate how enthusiastic you are about the content of this course and the things you're learning (or have learned):
(1) Not At All Enthusiastic
(2) Slightly Enthusiastic
(3) Enthusiastic
(4) Very Enthusiastic
(5) Completely Enthusiastic

In your opinion (this has no bearing on your grade), please rate your motivation to do well in this course:
(1) Not At All Motivated
(2) Slightly Motivated
(3) Motivated
(4) Very Motivated
(5) Completely Motivated

Chapter 3

22. What are two forms of application layer software? (Choose two.)
    applications
    dialogs
    requests
    services
    syntax

23. What is the purpose of resource records in DNS?
    temporarily holds resolved entries
    used by the server to resolve names
    sent by the client to during a query
    passes authentication information between the server and client

24. What three protocols operate at the Application layer of the OSI model? (Choose three.)
    ARP
    DNS
    PPP
    SMTP
    POP
    ICMP

25. 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

26. As compared to SSH, what is the primary disadvantage of telnet?
    not widely available
    does not support encryption
    consumes more network bandwidth
    does not support authentication

27. 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
    requires a direct physical connection between devices
    centralized authentication is required

28. Which email components are used to forward mail between servers? (Choose two.)
    MDA
    IMAP
    MTA
    POP
    SMTP
    MUA

29. What application layer protocol describes the services that are used for file sharing in Microsoft networks?
    DHCP
    DNS
    SMB
    SMTP
    Telnet

30. 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

31. How does the application layer on a server usually process multiple client request for services?
        ceases all connections to the service
        denies multiple connections to a single daemon
        suspends the current connection to allow the new connection
        uses support from lower layer functions to distinguish between connections to the service

32. Which layer of the OSI model supplies services that allow user to interface with the network?
        physical
        session
        network
        presentation
        application
        transport

33. What is the automated service that matches resource names with the required IP address?
        HTTP
        SSH
        FQDN
        DNS
        Telnet
        SMTP

34. Refer to the exhibit. What is the destination port for the communication that is represented on line 5?
        80
        1261
        15533
        3912
        65520

35. What are two characteristics of peer-to-peer networks? (Choose two.)
        scalable
        one way data flow
        decentralized resources
        centralized user accounts
        resource sharing without a dedicated server

36. 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

37. 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

38. What is the role of the OSI application layer?
   provides segmentation of data
   provides encryption and conversion of data
   provides the interface between the applications on either end of the network
   provides control of all the data flowing between the source and destination devices

39. A small home network has been installed to interconnect three computers together for gaming and file sharing. What two properties represent this network type? (Choose two.)
   User accounts are centralized.
   Security is difficult to enforce.
   Specialized operating system software is required.
   File permissions are controlled by a single computer.
   A computer that responds to a file sharing request is functioning as a server.

40. What application layer protocol is commonly used to support for file transfers between a client and a server?
   HTML
   HTTP
   FTP
   Telnet

41. What are two characteristics of clients in data networks? (Choose two.)
   use daemons
   initiate data exchanges
   are repositories of data
   may upload data to servers
   listen for requests from servers

Bit 0	Bit 15 Bit 16	Bit 31
Source Port 13357	Destination Port 23	
Sequence Number 43693		
Acknowlegement Number 8732		
Header Length--	Reserved --	Code Bits --	Window 12000
Checksum ---	Urgent ---	

42. 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.

43. 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

44. 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

45. 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

```
No. ·    Time      Source           Destination      Protocol  Info
     5 0.102309  Cisco_3c:78:00   Broadcast        ARP       who has 198.133.219.25?  Tell 10.21.148.177
     6 0.102351  Cisco_b6:ce:04   Cisco_3c:78:00   ARP       198.133.219.25 is at 00:08:a3:b6:ce:04
     7 0.102368  10.21.148.177    198.133.219.25   TCP       3351 > http [SYN] Seq=0 Len=0 MSS=1260
     8 0.176454  198.133.219.25   10.21.148.177    TCP       http > 3351 [SYN, ACK] Seq=0 Ack=1 Win=8192 Len=0 MSS=1380
     9 0.176519  10.21.148.177    198.133.219.25   TCP       3351 > http [ACK] Seq=1 Ack=1 Win=65520 Len=0
    10 0.176619  10.21.148.177    198.133.219.25   HTTP      GET / HTTP/1.1
    11 0.257134  198.133.219.25   10.21.148.177    TCP       http > 3351 [ACK] Seq=1 Ack=1180 Win=7074 Len=0
    12 0.271676  198.133.219.25   10.21.148.177    TCP       [TCP segment of a reassembled PDU]

Frame 7 (62 bytes on wire, 62 bytes captured)
Ethernet II, Src: Cisco_3c:78:00 (00:05:9a:3c:78:00), Dst: Cisco_b6:ce:04 (00:08:a3:b6:ce:04)
Internet Protocol, Src: 10.21.148.177 (10.21.148.177), Dst: 198.133.219.25 (198.133.219.25)
Transmission Control Protocol, Src Port: 3351 (3351), Dst Port: http (80), Seq: 0, Len: 0
    Source port: 3351 (3351)
    Destination port: http (80)
    Sequence number: 0    (relative sequence number)
    Header length: 28 bytes
    Flags: 0x02 (SYN)
        0... .... = Congestion Window Reduced (CWR): Not set
        .0.. .... = ECN-Echo: Not set
        ..0. .... = Urgent: Not set
        ...0 .... = Acknowledgment: Not set
        .... 0... = Push: Not set
        .... .0.. = Reset: Not set
        .... ..1. = Syn: Set
        .... ...0 = Fin: Not set
    Window size: 64512
```

46. 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

```
C:\> netstat -n

Active Connections

  Proto  Local Address          Foreign Address        State
  TCP    192.168.1.101:1031     64.100.173.42:443      ESTABLISHED
  TCP    192.168.1.101:1037     192.135.250.10:110     TIME_WAIT
  TCP    192.168.1.101:1042     128.107.229.50:80      ESTABLISHED
```

47. 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 three client sessions.
    The local host is using web sessions to a remote server.
    The local host is listening for TCP connections using public addresses.
    The local host is using well-known port numbers to identify the source ports.
    The local host is performing the three-way handshake with 192.168.101:1037.

48. Which information is found in both the TCP and UDP header information?
    sequencing
    flow control
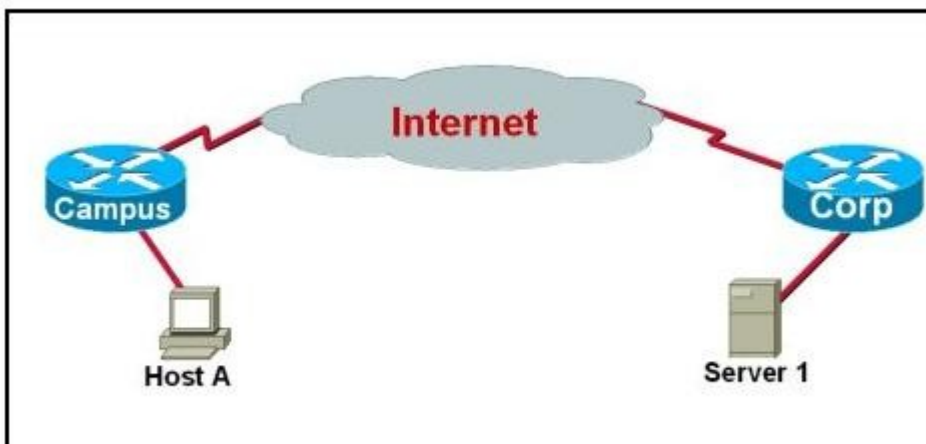   acknowledgments
    source and destination port

49. 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

50. 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

51. 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

52. 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.

53. 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

54. 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

55. 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.

56. What mechanism is used by TCP to provide flow control as segments travel from source to destination?
>   sequence numbers
>   session establishment
>   **window size**
>   acknowledgments

57. 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

58. What is dynamically selected by the source host when forwarding data?
　　　destination logical address
　　　source physical address
　　　default gateway address
　　　source port

59. Which OSI model layer is responsible for regulating the flow of information from source to destination, reliably and accurately?
　　　application
　　　presentation
　　　session
　　　transport
　　　network
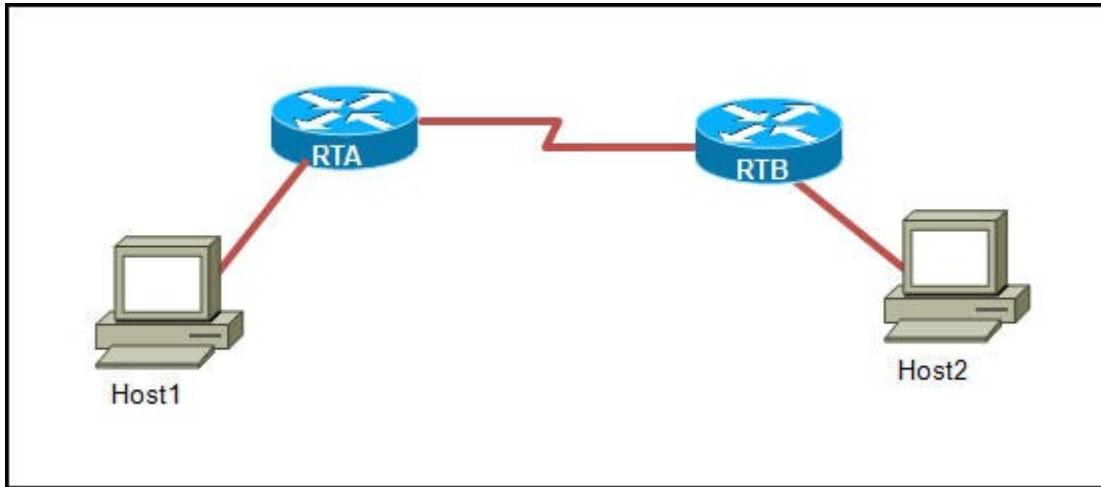
60. Refer to the exhibit. Host1 is in the process of setting up a TCP session with Host2. Host1 has sent a SYN message to begin session establishment. What happens next?
　　　Host1 sends a segment with the ACK flag = 0, SYN flag = 0 to Host2.
　　　Host1 sends a segment with the ACK flag = 1, SYN flag = 0 to Host2.
　　　Host1 sends a segment with the ACK flag = 1, SYN flag = 1 to Host2.
　　　Host2 sends a segment with the ACK flag = 0, SYN flag = 1 to Host1.
　　　Host2 sends a segment with the ACK flag = 1, SYN flag = 0 to Host1.
　　　Host2 sends a segment with the ACK flag = 1, SYN flag = 1 to Host1.

61. What are two features of the User Datagram Protocol (UDP)? (Choose two.)
　　　flow control
　　　low overhead
　　　connectionless
　　　connection-oriented
　　　sequence and acknowledgements

Chapter 5

62. 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.

63. 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

64. 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

65. 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.
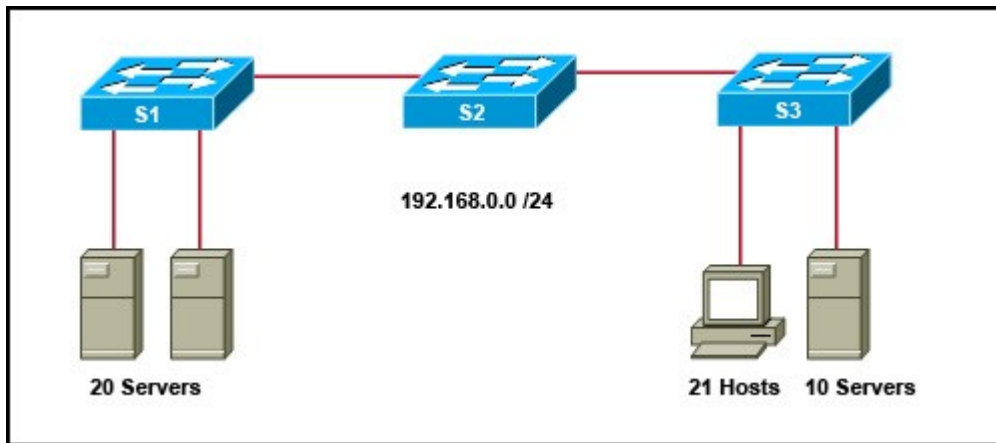
66. Refer to the exhibit. A network administrator notices that there are too many broadcasts on the network. What two steps can the network administrator take to resolve this problem? (Choose two.)

     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.

67. 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

68. 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.

69. 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

70. 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.

71. Which IP packet field will prevent endless loops?
   type-of-service
   identification
   flags
   time-to-live
   header checksum

72. What type of routing uses information that is manually entered into the routing table?
   dynamic
   interior
   static
   standard

73. 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

74. Which intermediary devices could be used to implement security between networks? (Choose two.)
   router
   hub
   switch
   firewall
   access point
   bridge

75. 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
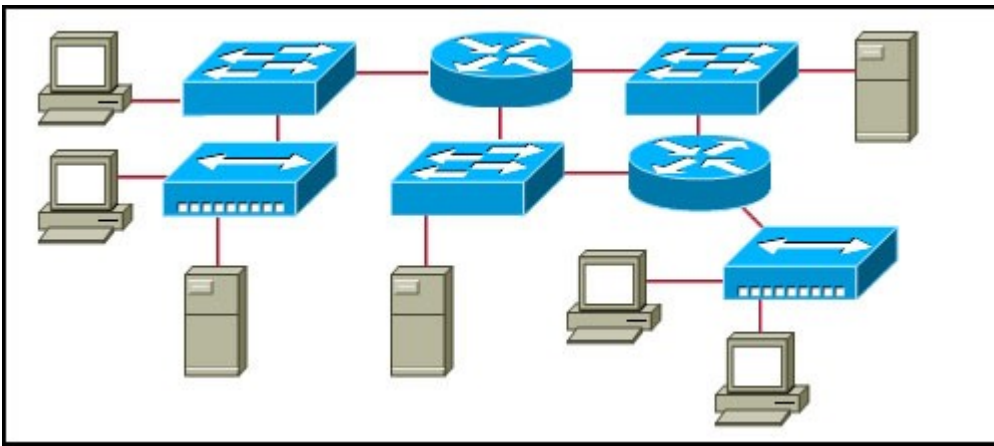
76. Refer to the exhibit. All devices shown in the exhibit have factory default settings. How many broadcast domains are represented in the topology that is shown?

    3
    4
    5
    7
    8
    11

77. Which portion of the network layer address does a router use to forward packets?
    host portion
    broadcast address
    network portion
    gateway address

78. 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

79. 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.

```
C:\Documents and Settings\administrator>netstat -r

Route Table
===========================================================================
Interface List
0x1 .......................... MS TCP Loopback interface
0x2 ...00 16 76 d5 2c 14 ...... Intel(R) 82566DC Gigabit Network Connection - Packet Scheduler
Miniport
===========================================================================

===========================================================================
Active Routes:
 Network Destination          Netmask           Gateway          Interface      Metric
           0.0.0.0             0.0.0.0        10.10.10.6        10.10.10.26          20
         10.10.10.0      255.255.255.0        10.10.10.26        10.10.10.26          20
        10.10.10.26    255.255.255.255        127.0.0.1          127.0.0.1          20
    10.255.255.255    255.255.255. 255        10.10.10.26        10.10.10.26          20
         127.0.0.0           255.0.0.0        127.0.0.1          127.0.0.1           1
         224.0.0.0           240.0.0.0        10.10.10.26        10.10.10.26          20
   255.255.255.255    255.255.255.255        10.10.10.26        10.10.10.26           1
Default Gateway:      10.10.10.6
===========================================================================
Persistent Routes:
  None
```

80. 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?
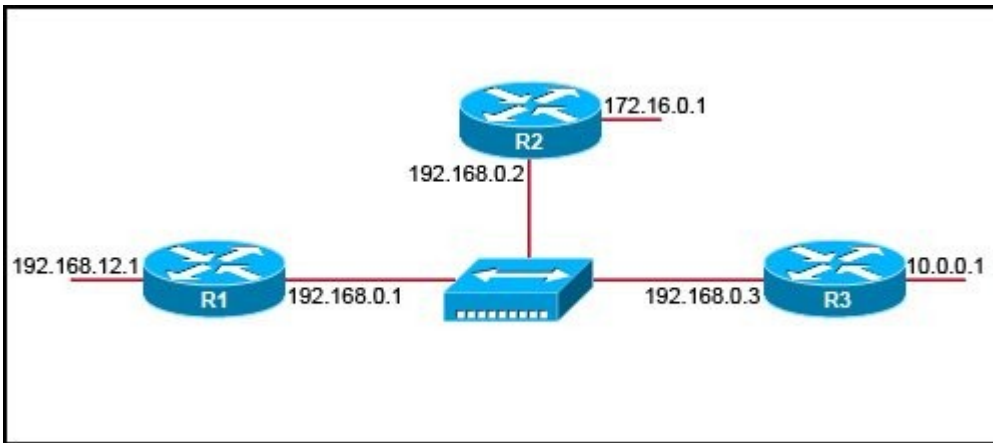
    10.10.10.26
    127.0.0.1
    10.10.10.6
    10.10.10.1
    224.0.0.0

81. 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.
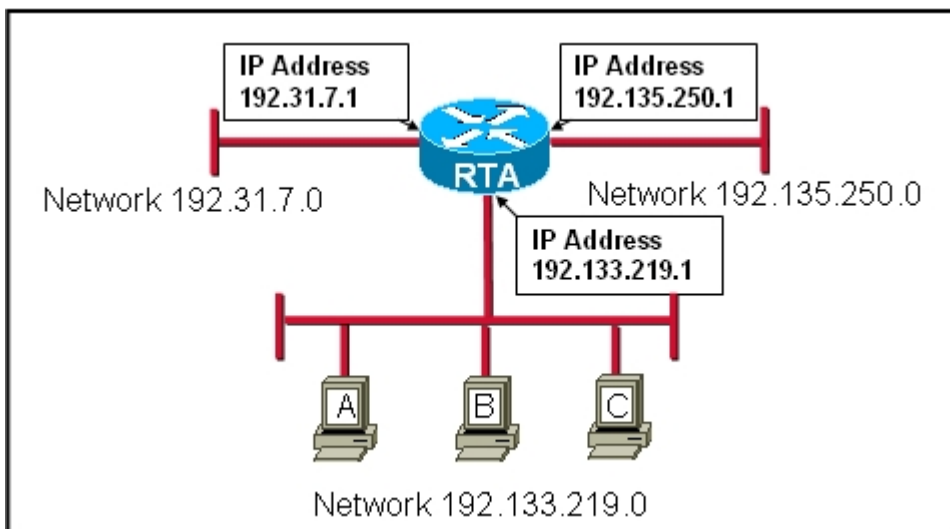   192.168.0.1 is the next-hop address that is used by R1 to route a packet from the 192.168.12.0 network to the 172.16.0.0 network.
    172.16.0.1 is the next-hop address that is used by R3 to route a packet from the 10.0.0.0 to the 172.16.0.0 network.
    192.168.0.1 is the next-hop address that is used 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.

16

Network 192.31.7.0

IP Address
192.31.7.1

IP Address
192.135.250.1

RTA

Network 192.135.250.0

IP Address
192.133.219.1

A   B   C

Network 192.133.219.0

82. 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

Chapter 6

83. 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

84. 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

85. 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

86. What is the primary reason for development of IPv6?
    security
    header format simplification
    expanded addressing capabilities
    addressing simplification

87. 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

88. 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.)
    1 The router will discard the packet.
    2 The router will decrement the TTL value and forward the packet to the next router on the path to the destination host.
    3 The router will send a time exceeded message to the source host.
    4 The router will increment the TTL value and forward the packet to the next router on the path to the destination host.
    5 The router will send an ICMP Redirect Message to the source host.

89. Which three IP addresses are private? (Choose three.)
    1 172.168.33.1
    2 10.35.66.70
    3 192.168.99.5
    4 172.18.88.90
    5 192.33.55.89
    6 172.35.16.5

90. Which process do routers use to determine the subnet network address based upon a given IP address and subnet mask?
    1 binary adding
    2 hexadecimal anding
    3 binary division
    4 binary multiplication
    5 binary ANDing

91. Given the IP address and subnet mask of 172.16.134.64 255.255.255.224, which of the following would describe this address?
    1 This is a useable host address.
    2 This is a broadcast address.
    3 This is a network address.
    4 This is not a valid address.
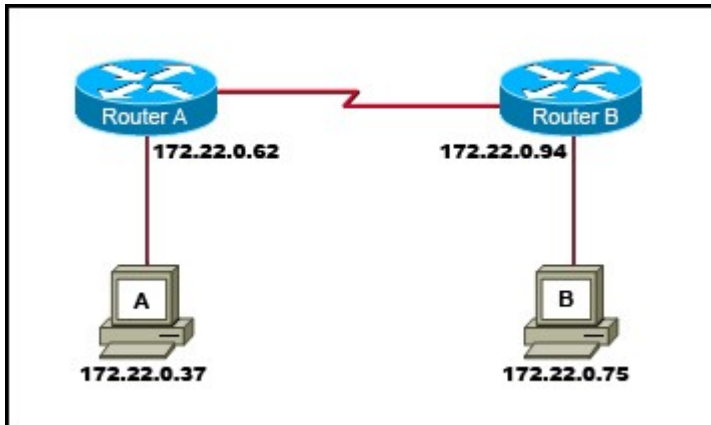
92. Refer to the exhibit. Which network prefix will work with the IP addressing scheme shown in the graphic.
   1 /24
    2 /16
    3 /20
    4 /27
    5 /25
    6 /28

```
--- 127.0.0.1 ping statistics ---
4 packets transmitted, 0 packets received, 100%
packet loss
```

93. Refer to the exhibit. Why would the response shown be displayed after issuing the command ping 127.0.0.1 on a PC?
    1 The IP settings are not properly configured on the host.
    2 Internet Protocol is not properly installed on the host.
    3 There is a problem at the physical or data link layer.
    4 The default gateway device is not operating.
   5 A router on the path to the destination host has gone down.

94. What is a group of hosts called that have identical bit patterns in the high order bits of their addresses?
    1 an internet
    2 a network
    3 an octet
    4 a radix
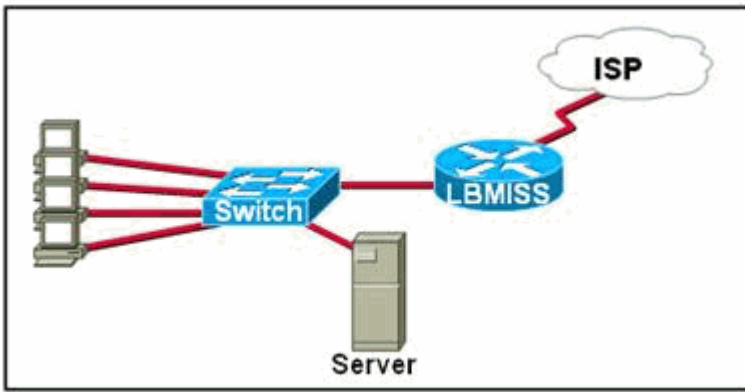
95. Refer to the exhibit. The network administrator has assigned the internetwork of LBMISS an address range of 192.168.10.0. This address range has been subnetted using a /29 mask. In order to accommodate a new building, the technician has decided to use the fifth subnet for configuring the new network (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?

    1 IP address: 192.168.10.38 subnet mask: 255.255.255.240 default gateway: 192.168.10.39
    2 IP address: 192.168.10.38 subnet mask: 255.255.255.240 default gateway: 192.168.10.33
    3 IP address: 192.168.10.38 subnet mask: 255.255.255.248 default gateway: 192.168.10.33
    4 IP address: 192.168.10.39 subnet mask: 255.255.255.248 default gateway: 192.168.10.31
    5 IP address: 192.168.10.254 subnet mask: 255.255.255.0 default gateway: 192.168.10.1
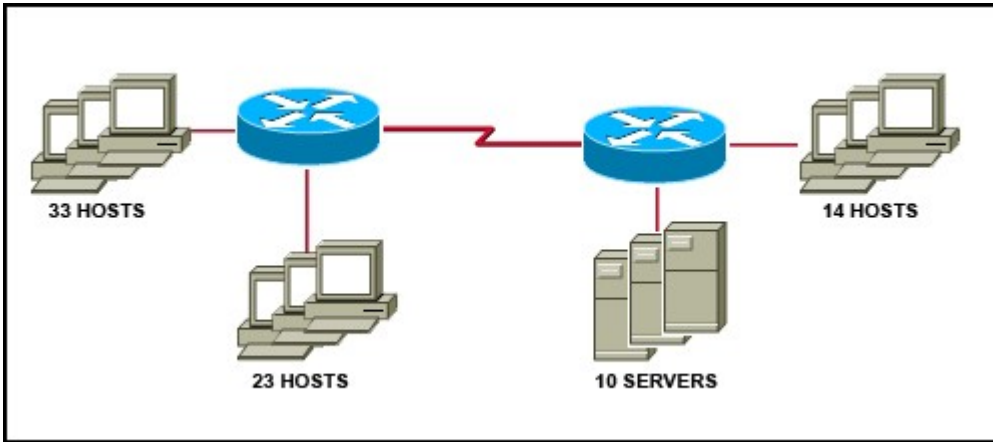
96. Refer to the exhibit. A network administrator has to develop an IP addressing scheme that uses the 192.168.1.0 /24 address space. The network that contains the serial link has already been addressed out of a separate range. Each network will be allocated the same number of host addresses. Which network mask will be appropriate to address the remaining networks?

    1 255.255.255.248
    2 255.255.255.224
    3 255.255.255.192
    4 255.255.255.240
    5 255.255.255.128
    6 255.255.255.252

97. What three facts are true about the network portion of an IPv4 address? (Choose three.)
   1 identifies an individual device
    2 is identical for all hosts in a broadcast domain
    3 is altered as packet is forwarded
    4 varies in length
    5 is used to forward packets
    6 uses flat addressing

98. Which statements are true regarding IP addressing? (Choose two.)
    1 NAT translates public addresses to private addresses destined for the Internet.
    2 Only one company is allowed to use a specific private network address space.
    3 Private addresses are blocked from public Internet by router.
    4 Network 172.32.0.0 is part of the private address space.
    5 IP address 127.0.0.1 can be used for a host to direct traffic to itself.

99. Which of the following network devices are recommended to be assigned static IP addresses? (Choose three.)
      1 LAN workstations
      2 servers
      3 network printers
      4 routers
   5 remote workstations
      6 laptops
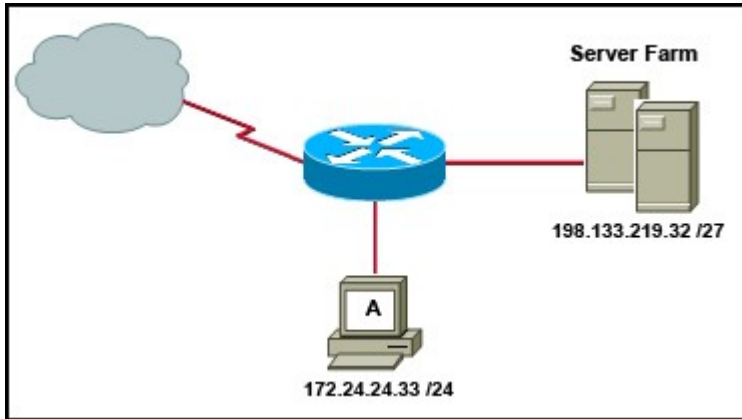
100. Refer to the exhibit. A network administrator discovers that host A is having trouble with Internet connectivity, but the server farm has full connectivity. In addition, host A has full connectivity to the server farm. What is a possible cause of this problem?
      1 The router has an incorrect gateway.
      2 Host A has an overlapping network address.
      3 Host A has an incorrect default gateway configured.
      4 Host A has an incorrect subnet mask.
      5 NAT is required for the host A network.

101. Which of the following are features of IPv6? (Choose three.)
      1 larger address space
      2 faster routing protocols
      3 data types and classes of service
      4 authentication and encryption
      5 improved host naming conventions
      6 same addressing scheme as IPv4
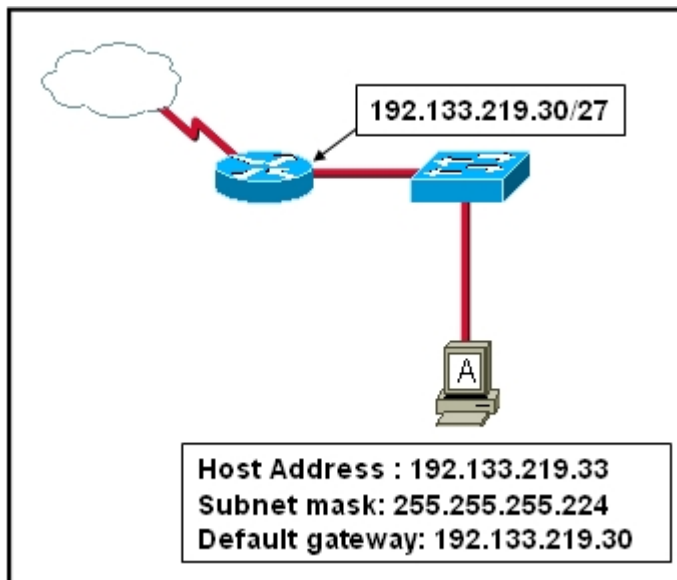
102. Refer to the exhibit. Host A is connected to the LAN, but it cannot get access to any resources on the Internet. The configuration of the host is shown in the exhibit. What could be the cause of the problem?
      1 The host subnet mask is incorrect.
      2 The default gateway is a network address.
      3 The default gateway is a broadcast address.
      4 The default gateway is on a different subnet from the host.

103. How many bits make up an IPv4 address?
    1 128
    2 64
    3 48
    4 32

Chapter 7

104. 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.

105. What determines the method of media access control? (Choose two.)
   network layer addressing
   media sharing
   application processes
   logical topology
   intermediary device function

106. 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.
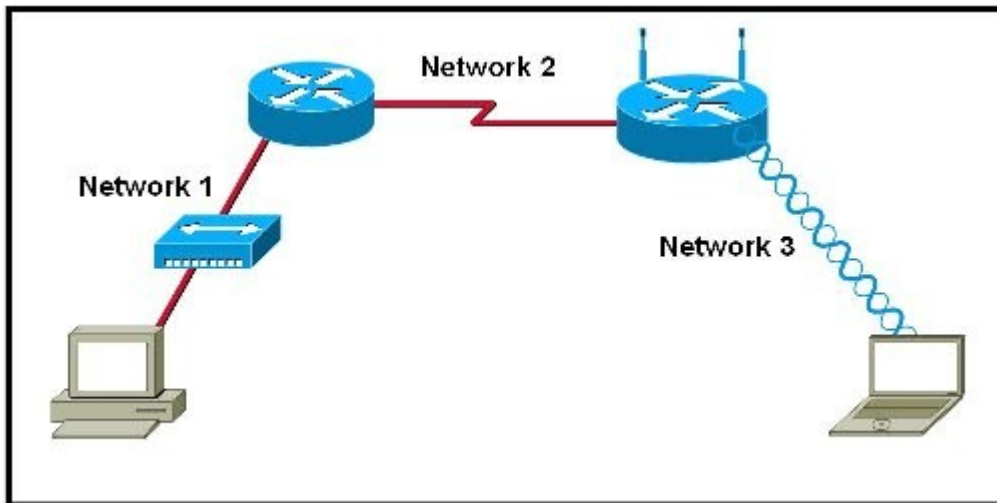
107. Refer to the exhibit. Which statement describes the media access control methods that are used by the networks in the exhibit?
   All three networks use CSMA/CA
   None of the networks require media access control.
   Network 1 uses CSMA/CD and Network 3 uses CSMA/CA.
   Network 1 uses CSMA/CA and Network 2 uses CSMA/CD.
   Network 2 uses CSMA/CA and Network 3 uses CSMA/CD.

108. 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

109. 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

110. 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

111. What statements are true regarding addresses found at each layer of the OSI model? (Choose two.)
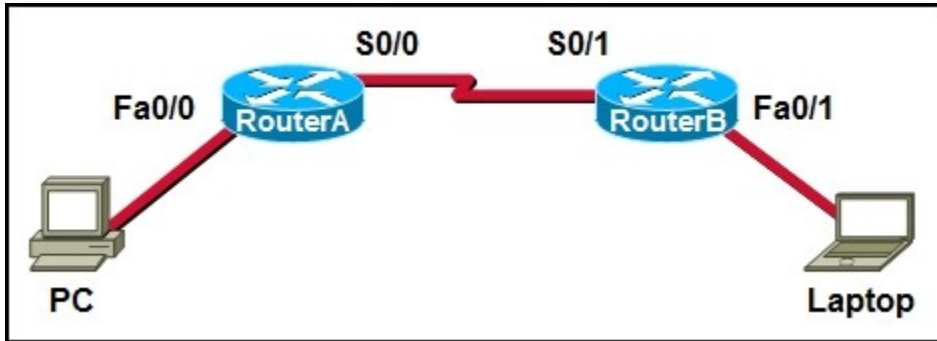   **Layer 2 may identify devices by a physical address burned into the network card**
     Layer 2 identifies the applications that are communicating
     Layer 3 represents a hierarchical addressing scheme
     Layer 4 directs communication to the proper destination network
     Layer 4 addresses are used by intermediary devices to forward data

112. 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

113. 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**

114. 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

115. 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.
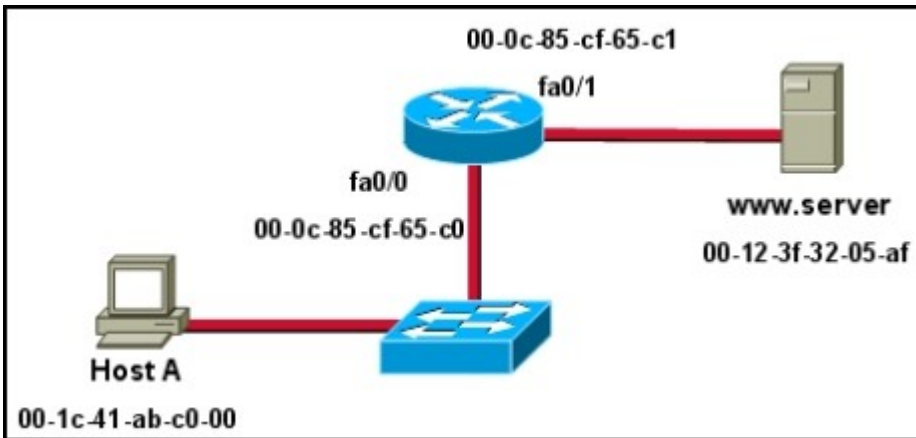   The data link layer protocol used over the link requires a large frame header.
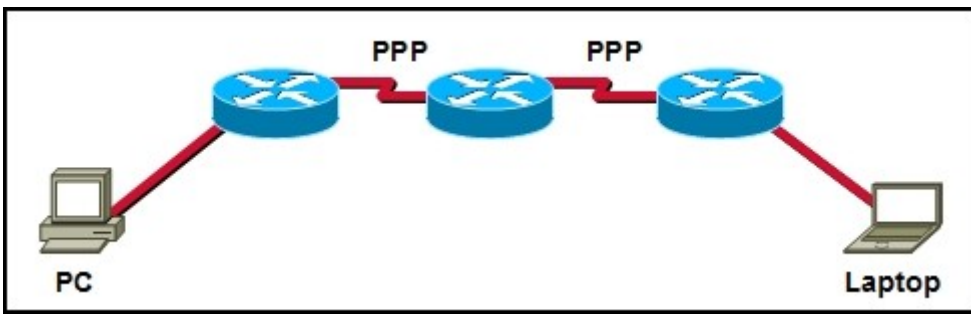
116. Refer to the exhibit. How many unique CRC calculations will take place as traffic routes from the PC to the laptop?
    1
    2
    4
    8

117. Which sublayer of the data link layer prepares a signal to be transmitted at the physical layer?
    LLC
    MAC
    HDLC
    NIC

118. 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

119. 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.

120. 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

121. 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

122. 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.

123. 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

Chapter 8

124. 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

125. 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.

126. 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

127. 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.

128. 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

129. 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

130. 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

131. Which method of signal transmission uses radio waves to carry signals?
      electrical
      optical
      wireless
      acoustic

132. What are three measures of data transfer? (Choose three.)
      goodput
      frequency
      amplitude
      throughput
      crosstalk
      bandwidth

133. Which type of cable run is most often associated with fiber-optic cable?
    backbone cable
    horizontal cable
    patch cable
    work area cable

134. 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

135. 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

136. In most business LANs, which connector is used with twisted-pair networking cable?
    BNC
    RJ-11
    RJ-45
    Type F

137. Which OSI layer is responsible for binary transmission, cable specification, and physical aspects of network communication?
    Presentation
    Transport
    Data Link
    Physical

138. Which fiber connector supports full duplex Ethernet?

This one.

139. 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

140. 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

Chapter 9

141. 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.
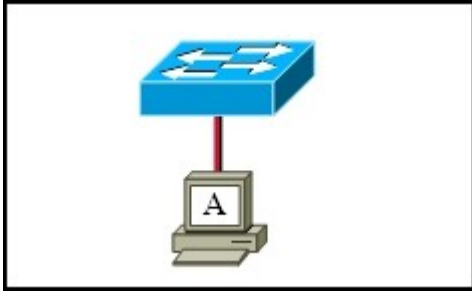
142. Refer to the exhibit. The switch and workstation are administratively configured for full-duplex operation. Which statement accurately reflects the operation of this link?
    No collisions will occur on this link.
    Only one of the devices can transmit at a time.
    The switch will have priority for transmitting data.
    The devices will default back to half duplex if excessive collisions occur.

143. 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.

144. Ethernet operates at which layers of the OSI model? (Choose two.)
    Network layer
    Transport layer
    Physical layer
    Application layer
    Session layer
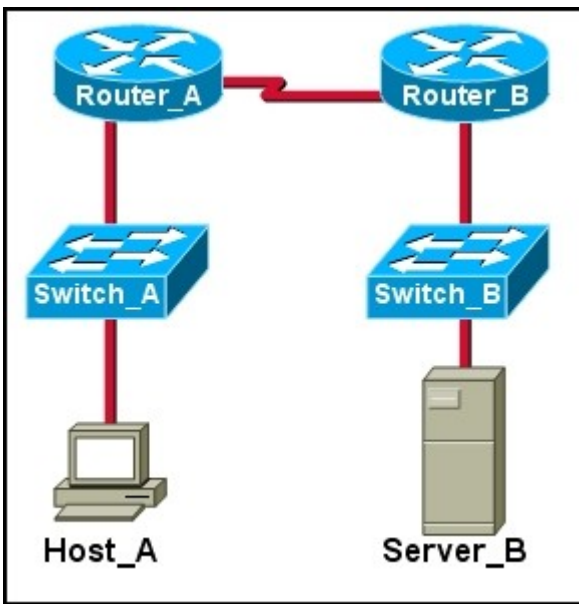   **Data-link layer**

145. What does the IEEE 802.2 standard represent in Ethernet technologies?
    MAC sublayer
    Physical layer
    Logical Link Control sublayer
    Network layer

146. 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.

147. 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.

148. 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

149. 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

150. 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

Ethernet Frame

HEADER	DATA	TRAILER
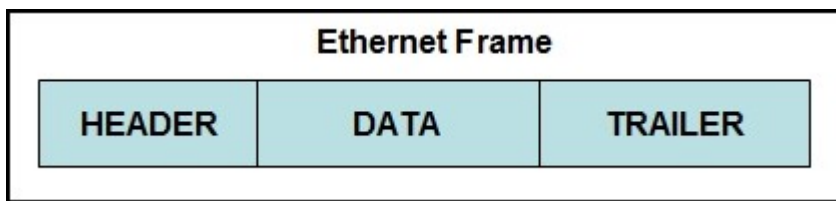
151. Refer to the exhibit. Which option correctly identifies content that the frame data field may contain?
    preamble and stop frame
    network layer packet
    physical addressing
    FCS and SoF

152. 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

153. 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

154. Convert the binary number 10111010 into its hexadecimal equivalent. Select the correct answer from the list below.
    85
    90
    BA
    A1
    B3
    1C

155. 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.

156. Ethernet operates at which layer of the TCP/IP network model?
    application
    physical
    transport
    internet
    data link
    network access
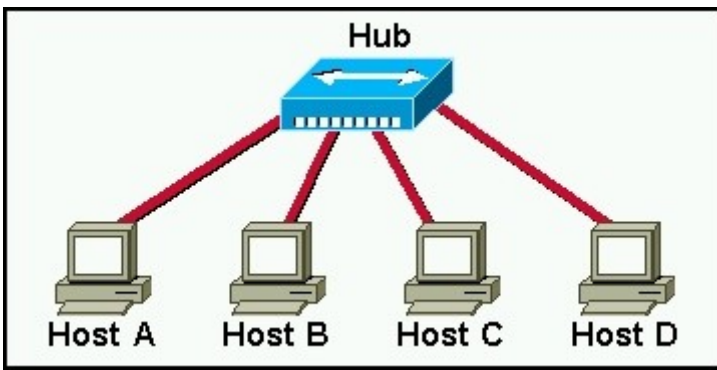
157. In the graphic, Host A has reached 50% completion in sending a 1 KB Ethernet frame to Host D when Host B wishes to transmit its own frame to Host C. What must Host B do?

      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.

158. 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

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

      addressing
      error detection
      frame delimiting
      port identification
      path determination
      IP address resolution
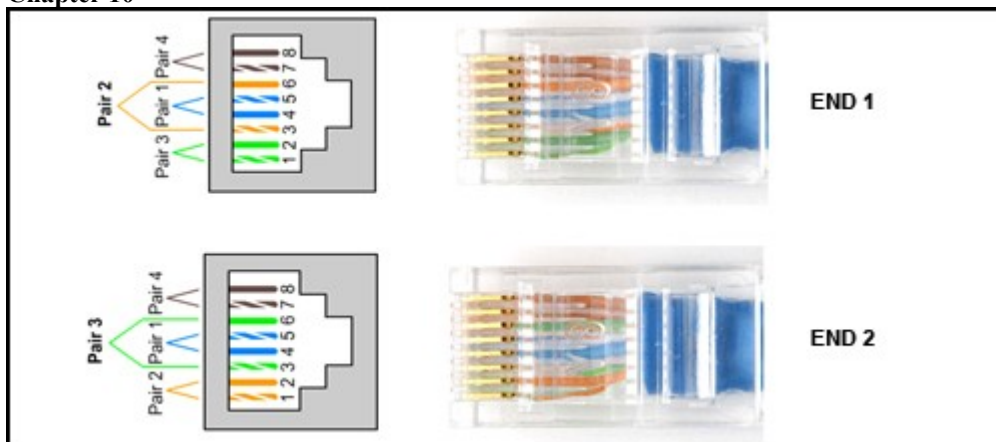
160. What is the primary purpose of ARP?

      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

161. 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

162. 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

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

      greater distances per cable run
      lower installation cost
      limited susceptibility to EMI/RFI
      durable connections
      greater bandwidth potential
      easily terminated

164. 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

165. 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
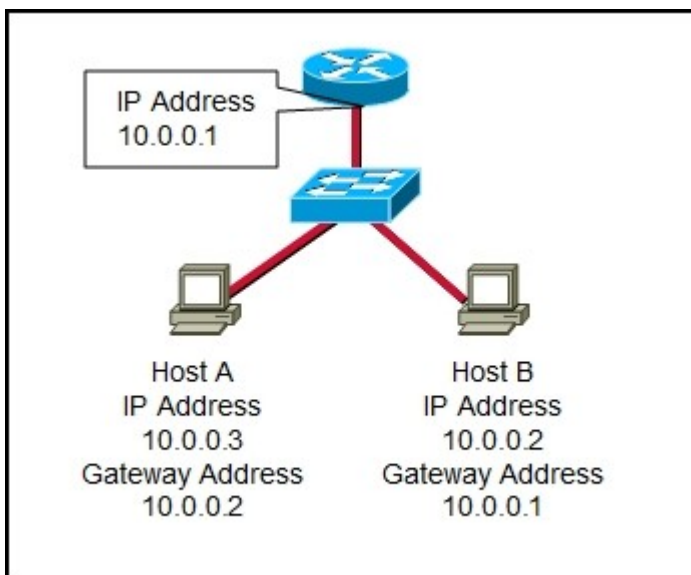   strengthening of a signal by a networking device

166. 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

167. 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

168. 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

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

cross-over
straight-through
rollover
patch cable

170. Which device is used to create or divide broadcast domains?

hub
switch
bridge
router
repeater
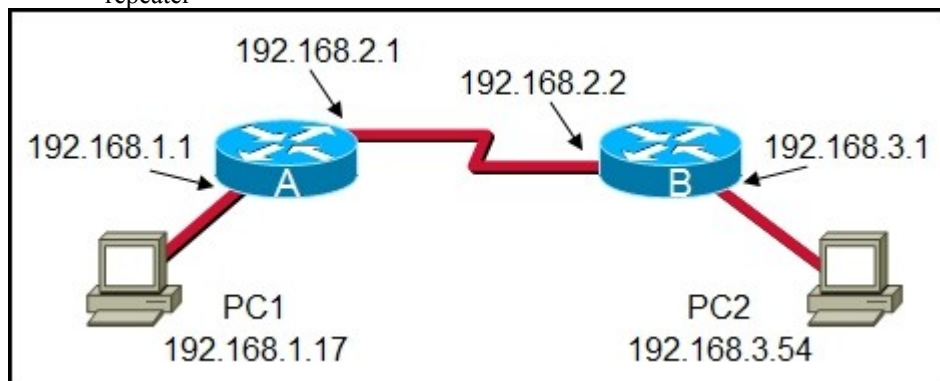
171. Refer to the exhibit. What destination IP address will PC1 place in the header for a packet destined for PC2?

192.168.1.1
192.168.2.1
192.168.2.2
192.168.3.1
192.168.3.54

IP Address
10.0.0.1

Host A
IP Address
10.0.0.3
Gateway Address
10.0.0.2

Host B
IP Address
10.0.0.2
Gateway Address
10.0.0.1

172. 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

173. 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
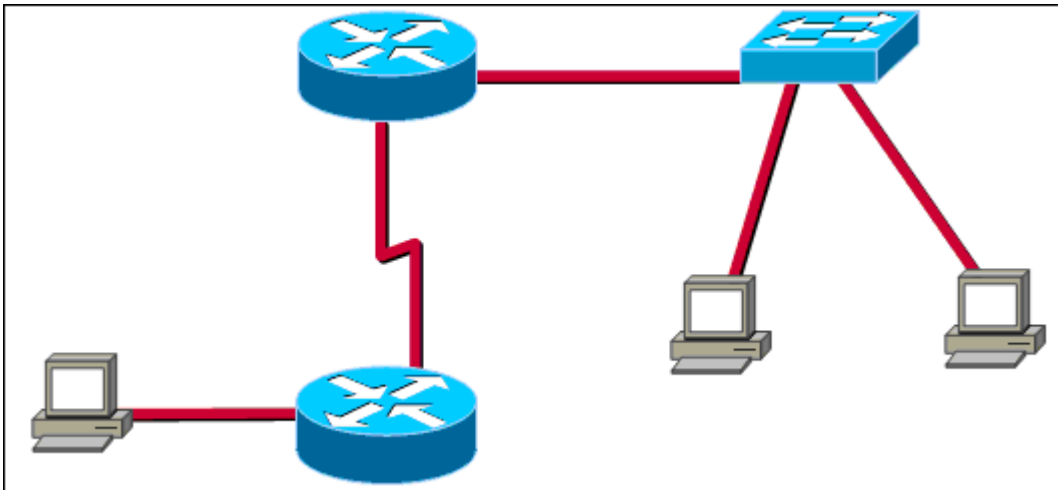
174. Refer to the exhibit. How many subnets are required to support the network that is shown?

2
3
4
5

175. 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

36
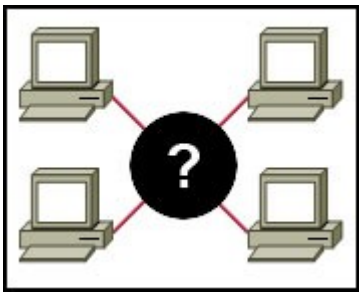
176. Refer to the exhibit. A student is setting up a home network primarily used for extensive file transfers, streaming video, and gaming. Which network device is best suited to these types of activities in the topology shown?

      wireless access point
   router
      hub
      switch

177. 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.
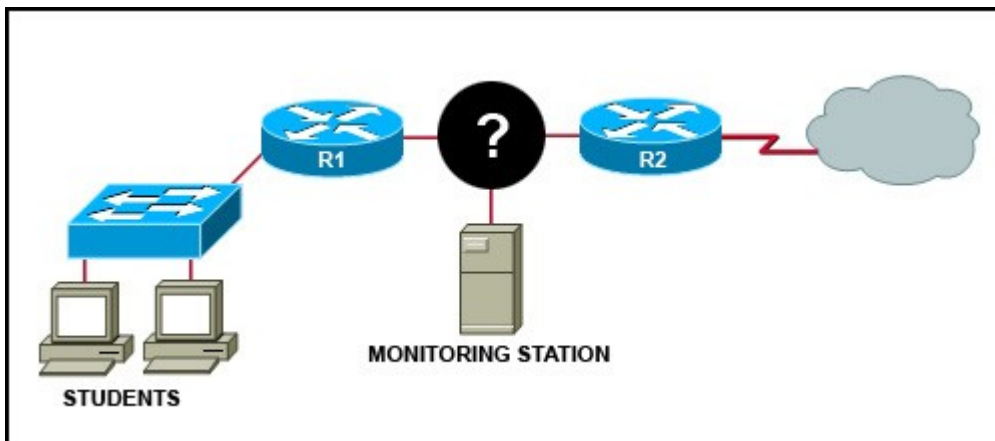

178. Refer to the exhibit. A network administrator has decided to use packet capture software to evaluate all traffic from the student subnet on the way to the Internet. To ensure that all packets are captured, what network device should be used to connect the monitoring station to the network between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

      router
      hub
      switch
      wireless access point
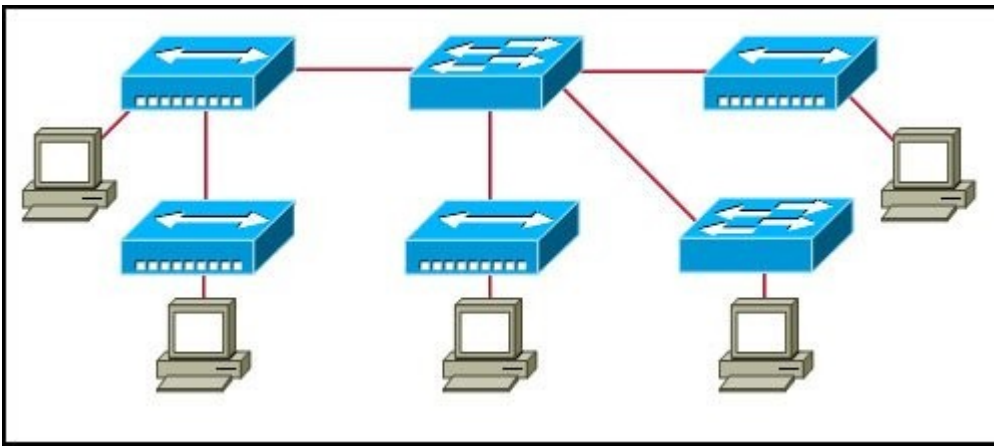
179. Refer to the exhibit. Assume that all devices are using default settings. How many subnets are required to address the topology that is shown?

1
3
4
5
7
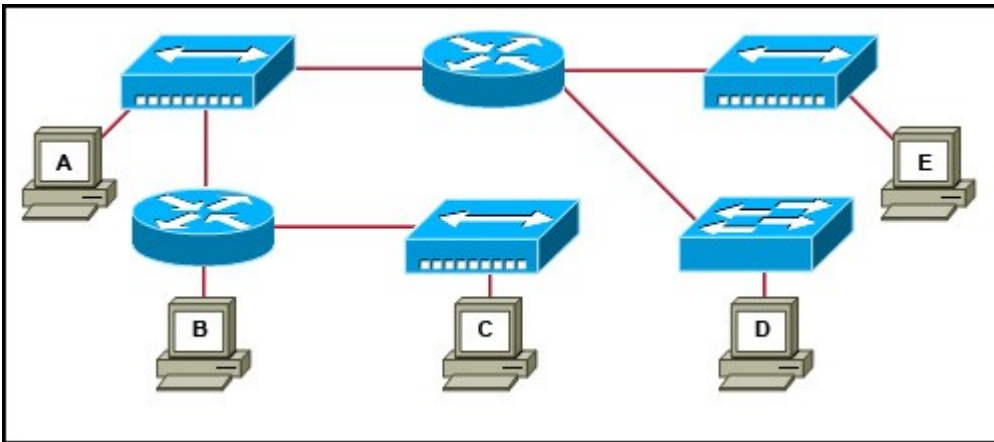
180. Refer to the exhibit. Which three statements are true about the exhibited topology? (Choose three.)
   Hosts B and C are in the same subnet.
   Five broadcast domains are present.
   Host B is using a crossover cable to connect to the router.
   Four broadcast domains are present.
   Five networks are shown.
   Host B is using a rollover cable to connect to the router.

181. 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
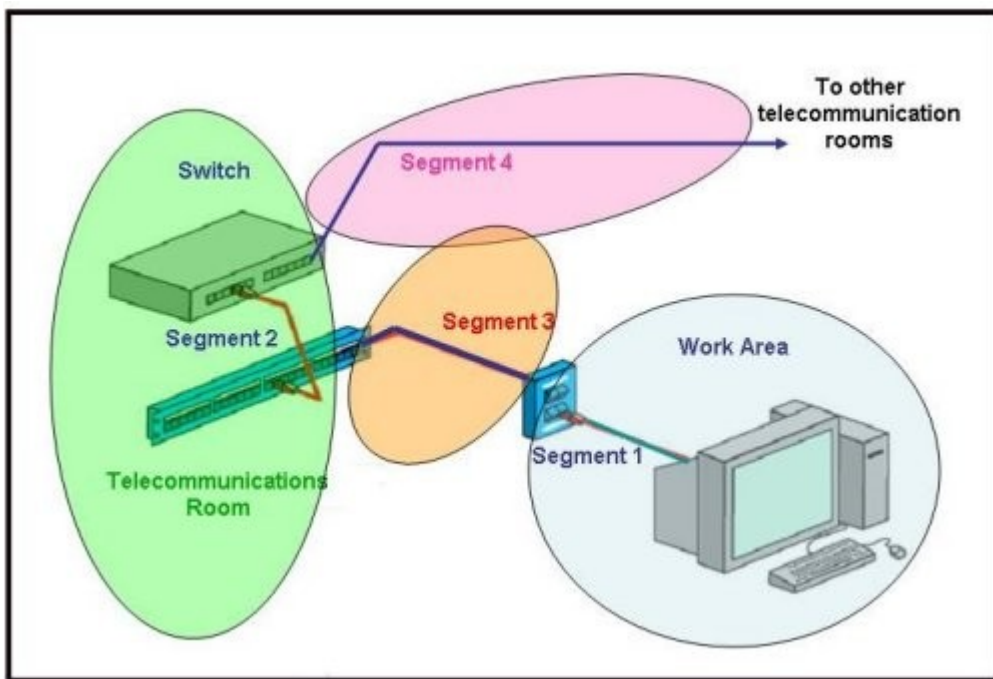
182. Refer to the exhibit. Which three statements identify the type of cabling that would be used in the segments that are shown? (Choose three.)
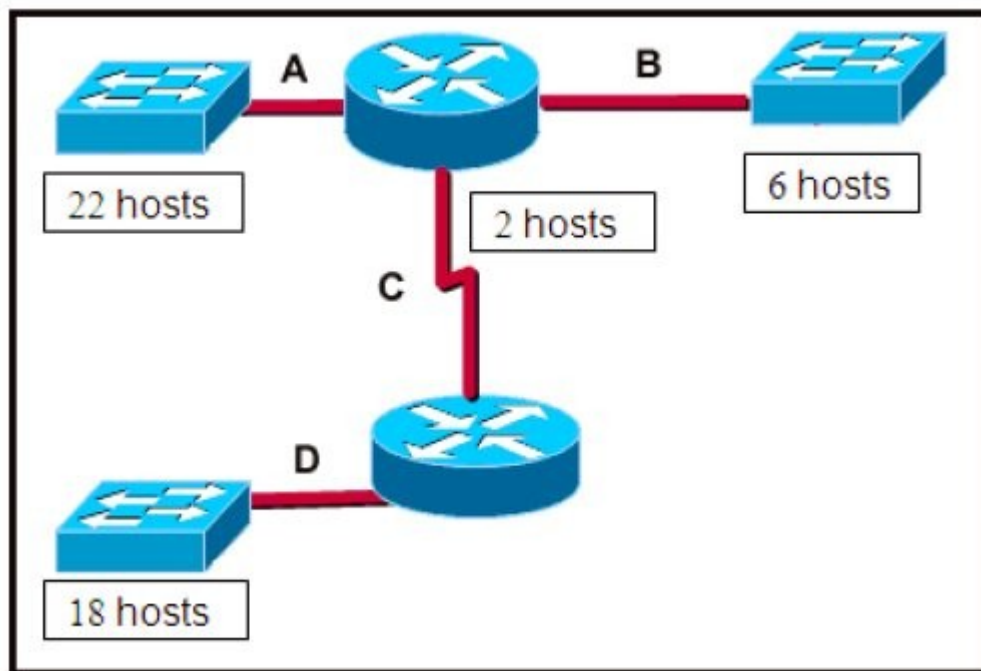
Segment 1 uses backbone cabling.
Segment 1 uses a patch cable.
Segment 3 uses patch cabling.
Segment 3 uses vertical cabling.
Segment 3 uses horizontal cabling.
Segment 4 uses vertical cabling.

183. 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

Chapter 11

184. 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

```
Router(config)# service password-encryption
Router(config)# enable secret cisco
Router(config)# enable password class
Router(config)# line console 0
Router(config-line)# password ccna
```

185. 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
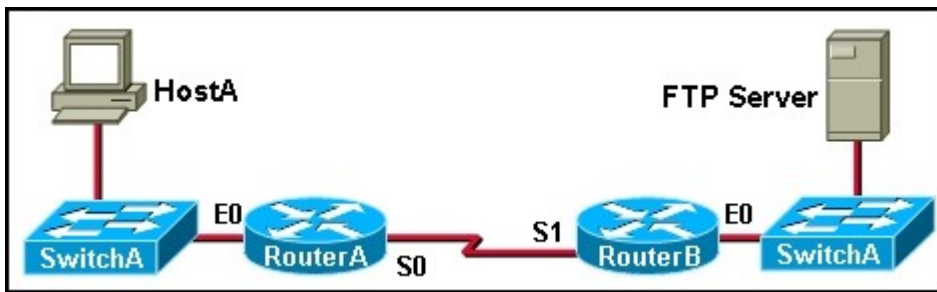
186. Refer to the exhibit. A network administrator on HostA has problems accessing the FTP server. Layer three connectivity testing was successful from HostA to the S1 interface of RouterB. Which set of commands will allow the network administrator to telnet to RouterB and run debug commands?

- RouterB(config)# <u>enable secret class</u>
  RouterB(config)# <u>line vty 0 4</u>
  RouterB(config-if)# <u>login</u>

- RouterB(config)# <u>enable secret class</u>
  RouterB(config)# <u>line vty 0 2</u>
  RouterB(config-vty)# <u>password cisco</u>
  RouterB(config-vty)# <u>login</u>

- **RouterB(config)# <u>enable secret class</u>**
  RouterB(config)# <u>line vty 0</u>
  RouterB(config-line)# <u>password cisco</u>
  RouterB(config-line)# <u>login</u>

- RouterB(config)# <u>enable secret class</u>
  RouterB(config)# <u>line aux 0</u>
  RouterB(config-line)# <u>password cisco</u>
  RouterB(config-line)# <u>login</u>

- RouterB(config)# <u>enable secret class</u>
  RouterB(config)# <u>line aux 0</u>
  RouterB(config-vty)# <u>password cisco</u>
  RouterB(config-vty)# <u>login</u>
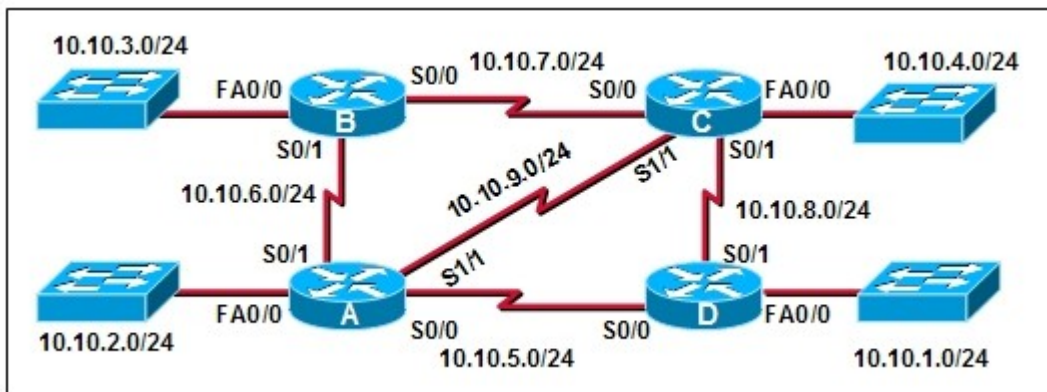
187. The connection between routers B and C has been successfully tested. However, after rebooting router C, the administrator noticed the response time between networks 10.10.3.0 and 10.10.4.0 is slower. Ping between the two routers is successful. A trace route indicates three hops from router B to 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 <u>show ip route</u> command in router B to verify routing is enabled.
Issue a <u>show ip interface brief</u> command on router C.

188. 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

Switch-East4#

189. 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**
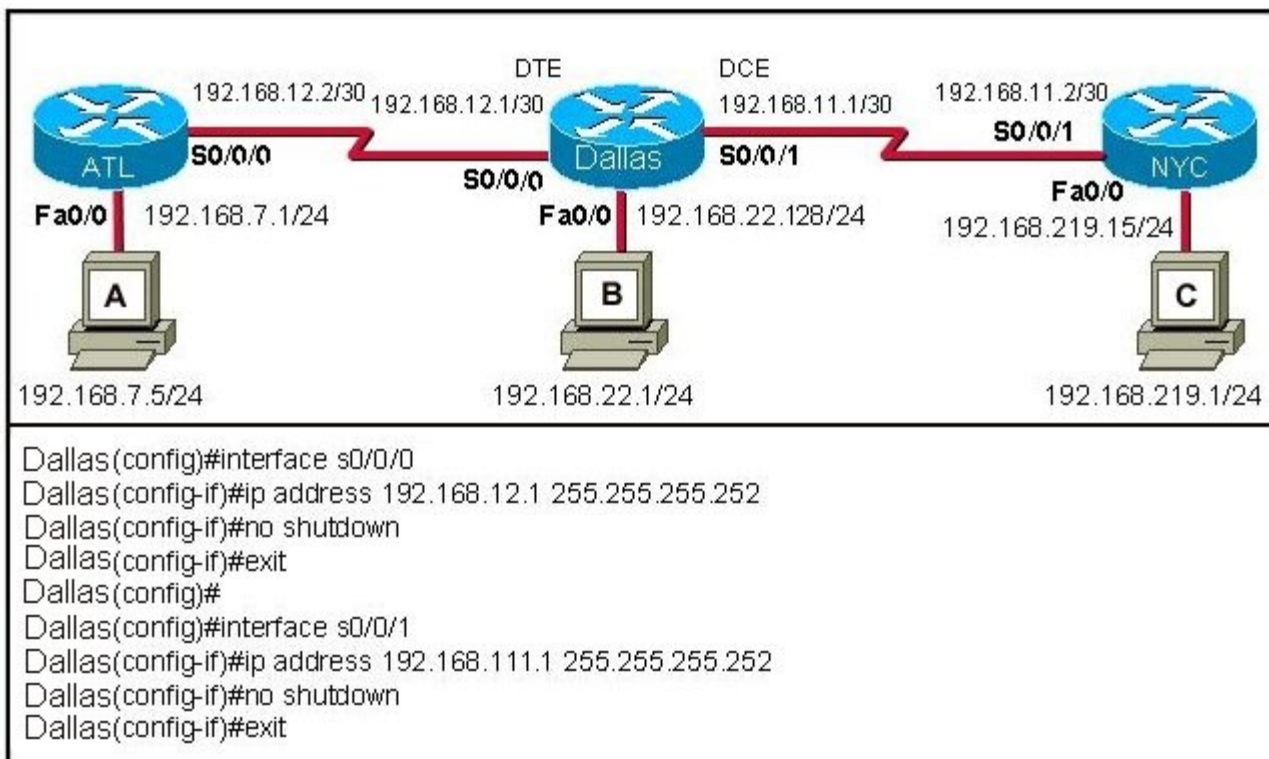> interface configuration mode
> **enable mode**

190. 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# <u>configure terminal</u>
> UBAMA(config)# <u>line vty 0 4</u>
> UBAMA(config)# <u>line console 0</u>
> UBAMA(config)# <u>interface Serial 0/0/0</u>
> **UBAMA(config)# <u>interface FastEthernet 0/1</u>**

191. 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.)
> <u>show flash</u>
> <u>show NVRAM</u>
> **<u>show startup-config</u>**
> **<u>show running-config</u>**
> <u>show version</u>

```
Dallas(config)#interface s0/0/0
Dallas(config-if)#ip address 192.168.12.1 255.255.255.252
Dallas(config-if)#no shutdown
Dallas(config-if)#exit
Dallas(config)#
Dallas(config)#interface s0/0/1
Dallas(config-if)#ip address 192.168.111.1 255.255.255.252
Dallas(config-if)#no shutdown
Dallas(config-if)#exit
```

192. 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.

193. In a Cisco device, where is the IOS file stored prior to system startup?
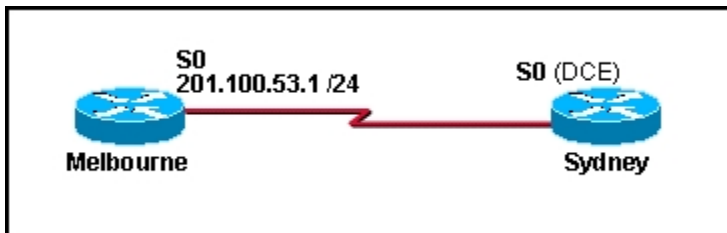
RAM
ROM
Flash
NVRAM

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

Console

195. 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

196. 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

197. 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
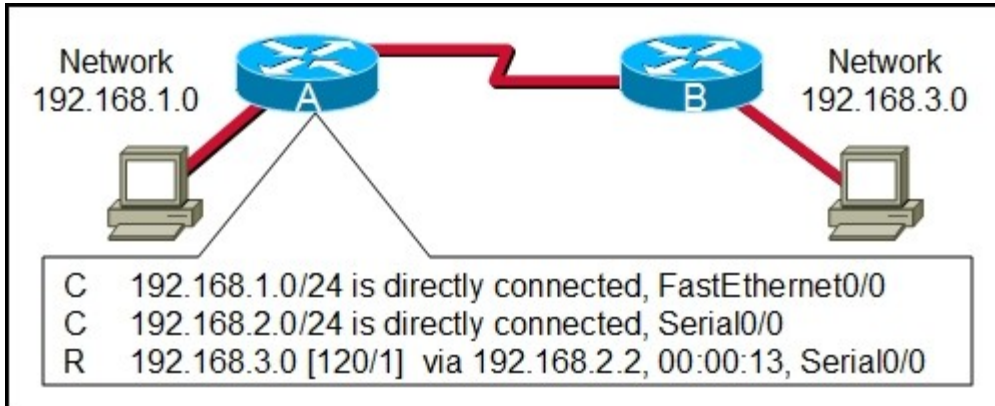
198. Refer to the exhibit. The output is shown for the show ip route command executed on Router A. What does the IP address 192.168.2.2 represent?
    Gateway for the 192.168.1.0 network
    Gateway for the 192.168.3.0 network
    IP assigned to the serial port on Router A
    IP assigned to the serial port on Router B

199. 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

200. 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*

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

Ethernet
Console
Telnet
SSH

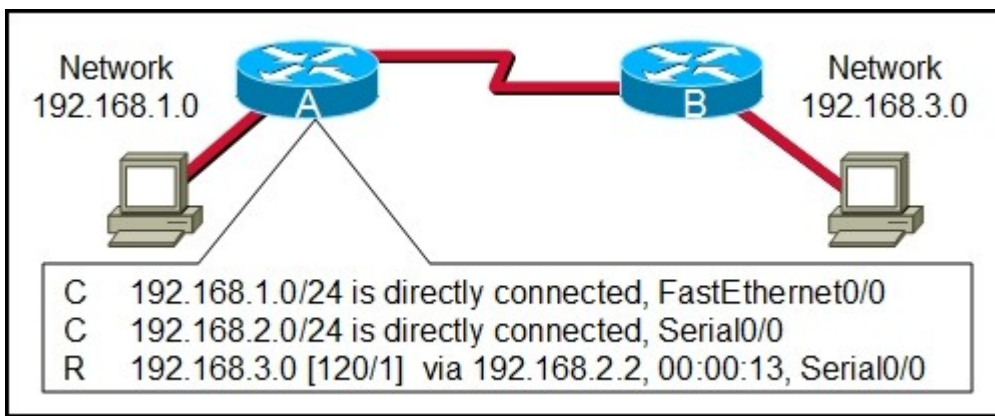202. What command is used to change the default router name to Fontana?
Router# name Fontana
Router# hostname Fontana
Router(config)# name Fontana
Router(config)# hostname Fontana

```
C    192.168.1.0/24 is directly connected, FastEthernet0/0
C    192.168.2.0/24 is directly connected, Serial0/0
R    192.168.3.0 [120/1]  via 192.168.2.2, 00:00:13, Serial0/0
```

203. 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

CCNA 4 "Blogspot" - Final Exam Answers (1)

204. Identify the factors that contribute to congestion on an Ethernet LAN. (Choose three.)
  ➢ *** improper placement of enterprise level servers
  ➢ *** addition of hosts to a physical segment
  ➢ replacement of hubs with workgroup switches
  ➢ *** increasing use of bandwidth intensive network applications
  ➢ www.ccna-4.blogspot.com
  ➢ creation of new collision domains without first adding network hosts
  ➢ migration to full-duplex Ethernet within the LAN

205. 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

206. Which of the following eliminates switching loops?
  ➢ hold-down timers
  ➢ poison reverse
  ➢ *** spanning tree protocol
  ➢ time to live
  ➢ split horizon protocol

207. The show cdp neighbors command is a very useful network troubleshooting tool. Using the output in the graphic, select the statements that are true. (Choose two.)
  ➢ CDP operates at the network layer of the OSI model.
  ➢ *** The output of this command displays information about directly connected Cisco devices only.
  ➢ The switch is attached to the SanJose1 FastEthernet0/21 interface.
  ➢ SanJose1 is running CDP version 12.0.
  ➢ SanJose1 has two fully operational, cdp-enabled Cisco switches directly connected to it.
  ➢ *** SanJose2 is a 2600 series router running several routed protocols

208. A network administrator can ping the Denver router, but gets a 'Password Required but None Set' message when trying to connect remotely via Telnet. Which command sequence must be applied to the Denver router to allow remote access?
  ➢ Router(config)# line console 0
       Router(config-line)# login
       Router(config-line)# password cisco
  ➢ *** Router(config)# line vty 0 4
       *** Router(config-line)# login
       *** Router(config-line)# password cisco
  ➢ Router(config)# line virtual terminal
       Router(config-line)# enable login

Router(config-line)# password cisco
- ➢ Router(config)# line vty 0 4
  Router(config-line)# enable secret
  Router(config-line)# password cisco
- ➢ Router(config)# enable secret cisco
  Router(config)# enable cisco

209. Which of the following is associated with link-state routing protocols?
- ➢ low processor overhead
- ➢ poison reverse
- ➢ routing loops
- ➢ split horizon
- ➢ *** shortest-path first calculations

210. A router does not load its configuration after a power failure. After running the show startup-configuration command, the adminstrator finds that the original configuration is intact. What is the cause of this problem?
- ➢ The configuration register is set for 0x2100.
- ➢ The configuration register is set for 0x2101.
- ➢ The configuration register is set for 0x2102.
- ➢ *** The configuration register is set for 0x2142.
- ➢ Boot system commands are not configured.
- ➢ Flash memory is empty causing the router to bypass the configuration in NVRAM
- ➢ Nederst på formularen

211. Which commands are used to verify the content and placement of access control lists? (Choose three.)
- ➢ *** show ip interface
- ➢ show ip route
- ➢ show processes
- ➢ *** show running-config
- ➢ show cdp neighbor
- ➢ *** show access-lists

212. Which of the following are required when creating a standard access control list? (Choose two.)
destination address and wildcard mask
- ➢ *** source address and wildcard mask
- ➢ subnet mask and wildcard mask
- ➢ access list number between 100 and 199 or 2000 and 2699
- ➢ *** access list number between 1 and 99 or 1300 to 1999

213. Which of the following are keywords that can be used in an access control list to replace a dotted decimal wildcard mask? (Choose two.)
- ➢ most
- ➢ *** host
- ➢ all
- ➢ *** any
- ➢ some
- ➢ sum

214. Refer to the diagram. All ports on Switch A are in the Sales VLAN and all ports on Switch B are in the Accounting VLAN. How many broadcast domains and how many collision domains are shown? (Choose two).
- ➢ 3 collision domains
- ➢ *** 3 broadcast domains
- ➢ 5 broadcast domains
- ➢ *** 9 collision domains
- ➢ 10 collision domains
- ➢ 13 collision domains

215. Refer to the graphic. Using the most efficient IP addressing scheme and VLSM, which address can be configured on one of the serial interfaces?
- ➢ 192.168.16.63/27
- ➢ 192.168.16.158/27
- ➢ 192.168.16.192/27
- ➢ 192.168.16.113/30
- ➢ 192.168.16.145/30
- ➢ *** 192.168.16.193/30

216. What is the purpose of the Spanning Tree Protocol (STP)?

- ➤ *** prevents Layer 2 loops
- ➤ prevents routing loops on a router
- ➤ creates smaller collision domains
- ➤ creates smaller broadcast domains
- ➤ allows Cisco devices to exchange routing table updates

217. What is the purpose of a loopback address when using the OSPF routing protocol?
- ➤ activates the OSPF neighboring process
- ➤ *** ensures a persistent router ID for the OSPF process
- ➤ provides a backdoor for connectivity during the convergence process
- ➤ streamlines and speeds up the convergence process

218. Which statement is true regarding states of the IEEE 802.1d Spanning Tree Protocol?
- ➤ Ports are manually configured to be in the forwarding state.
- ➤ *** Ports listen and learn before going into the forwarding state.
- ➤ Ports must be blocked before they can be placed in the disabled state.
- ➤ It takes 15 seconds for a port to go from blocking to forwarding

219. Which sequence of commands is used to configure a loopback address on a router?
- ➤ Router1(config)# interface loopback 1
  Router1(config-if)# ip address 192.168.1.1
- ➤ Router1(config)# interface serial 0/0
  Router1(config-if)# loopback 1
  Router1(config-if)# ip address 192.168.1.1
- ➤ Router1(config)# interface serial 0/0
  Router1(config-if)# loopback 1
  Router1(config-if)# ip address 192.168.1.1 255.255.255.0
- ➤ *** Router1(config)# interface loopback 1
  *** Router1(config-if)# ip address 192.168.1.1 255.255.255.255

220. Which routing protocols are classful and do not support VLSM? (Choose two.)
- ➤ EIGRP
- ➤ OSPF
- ➤ *** RIP v1
- ➤ RIP v2
- ➤ *** IGRP

221. Refer to the graphic. Two switches are connected together through a trunk port. SW2 displays the message shown. Which of the following will solve the duplex mismatch?
- ➤ SW1(config)# interface fastethernet 0/1
- ➤ SW1(config-if)# duplex full
- ➤ SW1(config)# interface fastethernet 0/1
- ➤ SW1(config-if)# full-duplex
- ➤ *** SW2(config)# interface fastethernet 0/1
- ➤ *** SW2(config-if)# duplex full
- ➤ SW2(config)# interface fastethernet 0/1
- ➤ SW2(config-if)# full-duplex

222. Refer to the graphic. Two routers have been configured to use EIGRP. Packets are not being forwarded between the two routers. What could be the problem?
- ➤ EIGRP does not support VLSM.
- ➤ The routers were not configured to monitor neighbor adjacency changes.
- ➤ The default bandwidth was used on the routers.
- ➤ *** An incorrect IP address was configured on a router interface.
- ➤ According to the the provided router output, which of the following statements is true regarding PPP operation?
- ➤ Only the link-establishment phase completed successfully.
- ➤ Only the network-layer phase completed successfully.
- ➤ Neither the link-establishment phase nor the the network-layer phase completed successfully.
- ➤ *** Both the link-establishment and network-layer phase completed successfully

223. Frame Relay is configured over a point-to-point connection between two routers. The output of the show frame-relay pvc command indicates that the status of this PVC is inactive. Which of the following devices could be the source of the problem? (Choose two.)
- ➤ local router
- ➤ local Frame Relay switch
- ➤ *** remote router

- ➢ *** remote Frame Relay switch
- ➢ R3 has the following configuration:
- ➢ R3# show running-config
- ➢ --some output text omitted--
- ➢ interface serial0/0
- ➢ bandwidth 128
- ➢ ip address 192.168.11.2 255.255.255.0
- ➢ encapsulation frame-relay
- ➢ frame-relay map ip 192.168.11.2 30 broadcast

224. After the command R3# debug frame-relay packet is executed, a ping is issued from R3 to R1 but is unsuccessful. Based on the output of the debug command shown in the graphic and the router configuration, what might be problem?
- ➢ *** No clock rate assigned.
- ➢ There is an incorrect DLCI number in the map statement.
- ➢ An incorrect IP address exists in the map statement.
- ➢ The encapsulation command is missing the broadcast keyword

225. Which statements are true regarding the Frame Relay LMI? (Choose three.)
- ➢ *** The LMI provides a virtual circuit (VC) status mechanism.
- ➢ The LMI type must always be manually configured.
- ➢ The available LMI types are NI1, DMS100 and 5ESS.
- ➢ The LMI types supported by Cisco routers are CISCO and IETF.
- ➢ *** The LMI type configured on the router must match the one used on the Frame Relay switch.
- ➢ *** The LMI uses reserved DLCIs to exchange messages between the DTE and DCE

226. Which statement describes the process that occurs in Network Address Translation (NAT) overloading?
- ➢ *** Multiple private IP addresses are mapped to one public IP address.
- ➢ The number of usable addresses assigned to a company is divided into smaller manageable groups.
- ➢ A pool of IP addresses are mapped to one or more MAC addresses.
- ➢ The router acts as a DHCP server and assigns multiple public IP addresses for each private IP address configured

227. Which two statements are true about the committed information rate on a Frame Relay link? (Choose two.)
- ➢ The sum of the CIRs for all PVCs must be less than the port speed.
- ➢ The sum of the CIRs for all PVCs must equal the port speed.
- ➢ *** The sum of the CIRs for all PVCs can be greater than the port speed.
- ➢ *** The DE bit will be set on frames that are transmitted in excess of the CIR.
- ➢ Frames that are transmitted at greater than the CIR will be discarded at the source.
- ➢ It is impossible to transmit frames at a rate in excess of the CIR

228. Which of the following commands would be used to troubleshoot the processing of call control functions such as call setup, signaling, and termination?
- ➢ show interface bri0/0
- ➢ show isdn active
- ➢ debug isdn q921
- ➢ *** debug isdn q931
- ➢ debug ppp negotiation
- ➢ debug ppp authentication

229. Which of the following statements are true regarding PPP? (Choose three.)
- ➢ *** PPP can use synchronous and asynchronous physical media.
- ➢ PPP can only be used between two Cisco devices.
- ➢ PPP carries packets from several network layer protocols in LCPs.
- ➢ *** PPP uses LCPs to establish, configure, and test the data link connection.
- ➢ *** PPP uses LCPs to agree on format options such as authentication, compression, and error detection

230. A network administrator is evaluating authentication protocols for a PPP link. Which of the following reasons might lead to the selection of CHAP over PAP as the authentication protocol? (Choose three.)
- ➢ establishes identities with a two-way handshake
- ➢ *** uses a three-way authentication periodically during the session to reconfirm identities
- ➢ control by the remote host of the frequency and timing of login events
- ➢ *** transmits login information in encrypted format
- ➢ *** uses an unpredictable variable challenge value to prevent playback attacks
- ➢ makes authorized network administrator intervention a requirement to establish each session

231. Why are static routes often used with ISDN DDR?
- ➢ They are more stable than dynamic routing protocols.

- ➤ They are more accurate than dynamic routing protocols because they are put in by a network administrator.
- ➤ They are easier to modify when a faster technology is installed.
- ➤ *** They prevent the unnecessary activation of the link

232. Assuming that four bits have been borrowed to make subnets, identify the subnet network addresses. (Choose three.)
- ➤ 192.168.14.8
- ➤ *** 192.168.14.16
- ➤ 192.168.14.24
- ➤ *** 192.168.14.32
- ➤ 192.168.14.148
- ➤ *** 192.168.14.208

233. A switch can be configured for three different forwarding modes based on how much of a frame is received before the forwarding process begins. Each of the numbered arrows in the accompanying graphic signifies the point in a frame where a particular forwarding mode will begin. Which one of the following groups reflects the sequence of forwarding modes signified by the numbered arrows?
- ➤ *** 1) fast forward
   *** 2) fragment free
   *** 3) store-and-forward
- ➤ store-and-forward
   2) fragment free
   3) fast forward
- ➤ fragment free
   2) fast forward
   3) store-and-forward
- ➤ fast forward
   2) store-and-forward
   3) fragment free

234. Which of the following commands will display a communication message on a router before the router prompt is shown?
- ➤ *** banner motd * Property of TLC. UNAUTHORIZED USERS WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW. *
- ➤ message Property of TLC. UNAUTHORIZED USERS WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.
- ➤ banner * Property of TLC. UNAUTHORIZED USERS WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW. *
- ➤ hostname (Property of TLC. UNAUTHORIZED USERS WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.)
   Øverst på formularen

235. A router needs to be added to OSPF area 0. Which commands should be used to enable OSPF on the router? (Choose two.)
- ➤ RouterA(config)# router ospf
- ➤ *** RouterA(config)# router ospf 1
- ➤ RouterA(config-router)# network 192.168.2.0 0.0.0.255 0
- ➤ *** RouterA(config-router)# network 192.168.2.0 0.0.0.255 area 0
- ➤ RouterA(config-router)# network 192.168.2.0 255.255.255.0 0

236. Refer to the graphic. Which of the following commands will configure router A for OSPF?
- ➤ router ospf 1
   network 192.168.10.0
- ➤ *** router ospf 1
   *** network 192.168.10.64 0.0.0.63 area 0
   *** network 192.168.10.192 0.0.0.3 area 0
- ➤ router ospf 1
   network 192.168.10.64 255.255.255.192
   network 192.168.10.192 255.255.255.252
- ➤ router ospf 1
   network 192.168.10.0 area 0

237. Which of the following protocols would exchange information between routers to share network addresses and their metrics?
- ➤ TCP
- ➤ *** RIP
- ➤ CSMA/CD
- ➤ Ethernet

238. Which ISDN device can be directly connected to a two-wire local loop in a North American city?
- ➤ a router with a serial interface
- ➤ a router with an S/T interface
- ➤ *** a router with a U interface
- ➤ an ISDN terminal adapter

51

239. The output of the show ip interfaces brief command indicates that Serial0 is up but the line protocol is down. Which of the following are possible causes for the line protocol being in the down state? (Choose two.)
- ➢ The clock rate is not set on the DTE.
- ➢ An incorrect default gateway is set on the router.
- ➢ A network is missing from the routing protocol configuration.
- ➢ *** The encapsulation on the Serial0 interface is incorrect.
- ➢ *** Keepalives are not being sent by the remote device

240. Which of the following is a characteristics of TCP? (Choose two.)
- ➢ *** data transport reliability
- ➢ best path determination
- ➢ *** establishing, maintaining, and terminating virtual circuits
- ➢ encapsulation of packets in a data frame with source and destination MAC addresses
- ➢ best-effort datagram delivery

241. Which statement is true regarding the command ip route 192.168.7.24 255.255.255.248 192.168.7.9? (Choose two.)
- ➢ *** A packet destined for host 192.168.7.30 will be forwarded to address 192.168.7.9.
- ➢ 192.168.7.9 is the destination network for this route.
- ➢ 192.168.7.24 is the next-hop router in this command.
- ➢ This command is issued from the interface configuration mode.
- ➢ *** This command is used to define a static route

242. Which of the following application layer protocols use TCP? (Choose three.)
- ➢ *** SMTP
- ➢ *** FTP
- ➢ SNMP
- ➢ *** HTTP
- ➢ TFTP
- ➢ DHCP

243. Which terms refer to Frame Relay congestion management mechanisms? (Choose three.)
- ➢ *** BECN
- ➢ DLCI
- ➢ *** DE
- ➢ *** FECN
- ➢ LMI
- ➢ Inverse ARP

244. Which of the following router commands will verify that a path exists to a destination network?
- ➢ Router# show ip interfaces brief
- ➢ *** Router# show ip route
- ➢ Router# show cdp neighbors
- ➢ Router# show running-config
- ➢ Router# show protocols

245. When EIGRP is configured on a router, which table of DUAL information is used to calculate the best route to each destination router?
- ➢ router table
- ➢ *** topology table
- ➢ DUAL table
- ➢ CAM table
- ➢ ARP table

246. Refer to the graphic. Routers A and B have EIGRP configured and automatic summarization has been disabled on both routers. Which of the following commands is used on router A to summarize the attached routes, and to which interface is this command applied? (Choose two)
- ➢ *** ip summary-address eigrp 1 192.168.10.64 255.255.255.192
- ➢ ip area-range eigrp 1 192.168.10.80 255.255.255.224
- ➢ summary-address 192.168.10.80 0.0.0.31
- ➢ ip summary-address eigrp 1 192.168.10.64 0.0.0.63
- ➢ *** serial interface on router A
- ➢ serial interface on router B

247. A router with two LAN interfaces, two WAN interfaces, and two loopback interfaces configured is operating with OSPF as its routing protocol. What is used by the OSPF process to assign the router ID?
- ➢ the IP address of the interface configured with priority 0
- ➢ the OSPF area ID configured on the interface with the highest IP address
- ➢ *** the loopback with the highest IP address configured

- ➢ the highest IP address on the LAN interfaces
- ➢ the highest IP address configured on the WAN interfaces

248. Given the IP address and subnet mask of 172.16.134.56 255.255.255.224, on which subnetwork does this address reside?
- ➢ 172.0.0.0
- ➢ 172.16.134.0
- ➢ *** 172.16.134.32
- ➢ 172.16.134.48
- ➢ 172.16.134.47
- ➢ 172.16.134.63

249. Which commands show when the last IGRP routing update was received? (Choose two.)
- ➢ *** Router# show ip protocols
- ➢ Router# show version
- ➢ Router# show interfaces
- ➢ Router# show ip updates
- ➢ *** Router# show ip route

250. When using access control lists to filter traffic, which of the following is used to track multiple sessions occurring between hosts?
- ➢ IP addresses
- ➢ subnet masks
- ➢ *** port numbers
- ➢ routed protocols
- ➢ routing protocols
- ➢ interfaces

251. 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

252. The company network shown in the drawing has to be subnetted. The company has leased the Class C IP address of 200.1.2.0. Which of the following network addresses and masks would be appropriate for one of the subnetworks?
- ➢ 200.1.2.96 255.255.255.192
- ➢ *** 200.1.2.160 255.255.255.224
- ➢ 200.1.2.80 255.255.255.224
- ➢ 200.1.2.32 255.255.255.240

253. When connectionless protocols are implemented at the lower layers of the OSI model, what is usually used to acknowledge that was received and to request the retransmission of missing data?
- ➢ IP
- ➢ UDP
- ➢ Ethernet
- ➢ A connectionless acknowledgement
- ➢ ****An upper-layer, connection-oriented protocol or service

254. 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

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

- ➢ Application
- ➢ Presentation
- ➢ Session
- ➢ ****Transport

256. What is true regarding network layer addressing? (Choose three.)
- ➢ Uses a flat structure
- ➢ Prevent broadcasts
- ➢ ****Hierarchical
- ➢ ****Uniquely identifies each host
- ➢ 48 bits in length
- ➢ ****Contains a network portion

257. A PC can not connect to any remote websites, ping its default gateway, or ping a printer that is functioning properly on the location 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.

258. Which type of meia 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

259. Refer to the exhibit. The command that is shown was issued on a PC. What does the IP address 192.168.33.2 represent?
- ➢ IP address of the host
- ➢ Default gateway of the host
- ➢ IP address of the homepage for the host
- ➢ ****Primary domain name server for the host
- ➢ IP address of the website resolver1.mooki.local

260. Refer to the exhibit. The diagram represents the process of sending email between clients. Select the one 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

261. 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.

262. Which OSI layers offers reliable, connection-oriented data communication services?
- ➢ application
- ➢ presentation
- ➢ session
- ➢ ****transport
- ➢ network

263. Examine the graphic with current configurations. Host A in the Clerical office failed and was replaced. Although a ping to 127.0.0.1 was successful, the replacement computer cannot access the company network. With proxy ARP disabled on the Fa0/0 interface of the New York router, what is the likely cause of the problem?
- ➢ Network card failure
- ➢ Network cables unplugged
- ➢ IP address incorrectly entered
- ➢ ****Subnet mask incorrectly entered

264. 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

265. 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

266. What are three characteristics of CSMA/CD? (Choose three.)
- ➢ Devices can be configure 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.

267. 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

268. Which combination of network id and subnet mask correctly identifies all IP addresses from 172.16.128.0 through 172.16.159.2?

- ➢ 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

269. Which password is automatically encrypted when it is created?

- ➢ Vty
- ➢ Aux
- ➢ Console
- ➢ ****Enable secret
- ➢ Enable password

270. 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.

271. 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

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

- ➢ ****Physical addressing
- ➢ Encoding
- ➢ Routing
- ➢ Cabling
- ➢ ****Media access control

273. 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

274. 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

275. 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.

276. 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

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

- ➢ ****Segment1
- ➢ Segment2
- ➢ ****Segment3
- ➢ ****Segment4
- ➢ Segment5

278. 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.

279. 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

280. 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.

281. The Layer 4 header contains which type of information to aid in the delivery of data?
#1: Service port number

282. During the encapsulation process, which identifiers are added at the transport layer?
#2: Two applications communicating the data

283. Refer to the exhibit. What is the correct destination socket number for a web page request from Host A to the web server?
#2: 198.133.219.25:80

284. Refer to the exhibit. Which logical topology best describes the exhibited network?
#4: Multiaccess

285. 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 for this communication?
#5: Destination MAC: EEEE:EEEE:EEEE Destination IP: 172.22.0.75

286. 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?
#3: The packet will be forwarded to the destination host.

287. Refer to the exhibit. Which set of devices contains only intermediary devices?
#1: A, B, D, G

288. Refer to the exhibit. A technician is working on a network problem that requires verification of the router LAN interface. Which address should be pinged from the host to confirm that the router interface is operational?
#3: 192.168.245.1

289. Which prompt represents the appropriate mode used for the **copy running-config startup-config** command?
#2: Switch-6J#

290. A technician is asked to secure the privileged EXEC mode of a switch by requiring a password. Which type of password would this login and be considered the most secure?
#3: Enable secret

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

#2: 0 to 1023

292. Refer to the exhibit. Which two statements describe the information that is represented in the header? (Choose two.)

#3: The destination port indicates a Telnet session.

#4: The return segment will contain a source port of 23.

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

#2: NVRAM

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

#1: A single broadcast domain is present

#5: Five collision domains exist.

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

#2: 3

296. Refer to the exhibit. What is required on host A for a network technician to create the initial configuration on Router 1?

#3: A terminal emulation program

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

#3: London

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

#2: Only computer A and computer D

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

#1: Address translation

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

#4: Issue the **no shutdown** command on interface FastEthernet 0/1

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

#3: The cable is suitable for use as a Fast Ethernet crossover.

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

302. A host is transmitting a video over the network. How does the transport layer allow this host to use multiple applications to transmit data at the same time as the video transmission?

#4: It uses multiple port numbers.

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

#2: Connection 1 – straight-through cable Connection 2 – crossover cable Connection 3 – rollover cable

304. Which OSI layer uses a connection-oriented protocol to ensure reliable delivery of data?

#4. Transport layer

Which three statements are true about network layer addressing? (Choose three.)

#1: It uniquely identifies each host.

#2. It assists in forwarding packets across internetworks.

#3: It uses a logical 32-bit IPv4 address.

305. Refer to the exhibit. A PC is communicating with another PC on a remote network. The two networks are connected by three routers. Which action will help to identify the path between the hosts?

#3: Use the tracert command at the host.

Which two types of media are useful for connecting two devices separated by a distance of 5000 meters? (Choose two.)

#4. 1000 BASE LX

#5. 1000 BASE-SX

306. Refer to the exhibit. A technician uses the **nslookup** command on the PC and views the output that is displayed in the exhibit. What is the IP address of the primary domain name server used by the host?

#1: 10.10.10.32

307. Refer to the exhibit. The diagram represents the process of sending e-mail between clients. Which list correctly identifies the correct sequence or protocol used at each numbered stage of the diagram?

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

308. Which three statements are true about transport layer protocols? (Choose three.)

#1: TCP and UDP manage communication between multiple applications.

#2: TCP retransmits the packets for which the acknowledgment is not received.

#3: TCP acknowledges received data.

309. Which OSI layer offers ordered data reconstruction services?

#5: Transport layer

310. Refer to the exhibit. Host C is able to ping 127.0.0.1 successfully, but is unable to communicate with hosts A or B in the organization. What is the likely cause of the problem?

#2: The IP addresses on the router serial interfaces are wrong.

311. Refer to the exhibit. A host is connected to hub 1. Which combination of IP address, subnet mask, and default gateway can allocate the host to function in the network?

#6: IP address: 172.16.31.37 Subnet mask 255.255.255.224 Default gateway: 172.16.31.35

312. An organization wants to create a subnet of the IP network 172.16.0.0. This subnet will accommodate 1000 hosts. Which subnet should be assigned to this network?
#3: 255.255.252.0

313. What are three characteristics of CSMA/CD? (Choose three.)
#1: It monitors the media for presence of a data signal.
#2: After detecting a collision, hosts can resume transmission after a random timer has expired.
#3: A jam signal is used to ensure that all hosts are aware that a collision has occurred.

314. Which three addresses belong to the category of public IP addresses? (Choose three.)
#2: 196.1.105.6
#3: 132.11.9.99
#6: 46.1.1.97

315. An organization has been assigned network ID 10.10.128.0 and subnet mask 255.255.224.0. Which IP address range can be used in this organization?
#2: 10.10.128.0 to 10.10.159.255

316. Which password restricts Telnet access to the router?
#1: Enable

317. Because of a security violation, the router password must be changed. What information can be learned from these configuration entries? (Choose two.)
Router(config)# **line vty 0 4**
Router(config-line)# **password arj15**
Router(config-line)# **login**
#3: This configuration allows users to connect to the router via the use of the **telnet** command.
#4: This configuration allows five users to make simultaneous connections to this router.

318. What is the result of using the **clock rate 56000** command at the serial interface of the router?
#1: The interface is configured as a DCE device.

319. What are two functions of the data link layer? (Choose two.)
#1: It segments and reorders the data.
#3: It controls how data is placed onto the media.

320. Which device should be used for routing a packet to a remote network?
#4: Router

321. Refer to the exhibit. A host is using NAT to connect to the Internet. Which three IP addresses enable this connection? (Choose three.)
#2: 10.1.1.37
#3: 10.1.1.39
#5: 10.1.1.60

322. Refer to the exhibit. What two facts can be determined from the session information that is displayed? (Choose two.)
#1: The protocol is a connection-oriented protocol.
#4: The destination port indicates that a Telnet session has been initiated.

323. Refer to the exhibit. Host B attempts to establish a TCP/IP session with host C. During this attempt, a frame was captured at the FastEthernet interface fa0/1 of the San Francisco router. The packet inside the captured frame has the source IP address 10.10.1.2. What is the destination IP address is 10.31.1.20. What is the destination MAC address of the frame at the time of capture?
#3: 0040.8517.44C3

324. Refer to the exhibit. The network administrator wants to remotely access the CLI of the router from PC1 using modem 1. Which cable the router should be connected to modem 2 to enable this access?
#3: Auxiliary

325. Refer to the exhibit. Cable 1 and Cable 2 are wired for specific physical layer requirements. Which three segments use Cable 2? (Choose three.)
#2: Segment 2
#4: Segment 4
#5: Segment 5

326. Refer to the exhibit. Which three statements are true about the IP configuration that is displayed? (Choose three.)
#1: The assigned address is a private address.
#4: The prefix of the computer address is /26.
#5: The IP address is routable on the Internet.

327. Which three IPv4 addresses represent valid host addresses for a subnet? (Choose three.)
#2: 10.1.12.113/28
#4: 10.1.11.5/27
#5: 10.1.11.97/27

328. Refer to the exhibit. Communication for hosts X and Y is restricted to the local network. What is the reason for this?
#4: The gateway addresses are broadcast addresses.

329. Which information is used by the router to determine the path between the source and destination hosts?
#2: The network portion of the IP address.

330. Refer to the exhibit. In a network, PC1 sends a message to PC2. The frame received at PC2 is shown. What information in this determines the correct destination application?
#4: destination and source process numbers

331. Refer to the exhibit. Host A is accessing multiple servers. Which combination of port number and address will uniquely identify particular process running on a specific server?
#1: MAC address of the server and port number of the service

332. Refer to the exhibit. Which logical topology describes the exhibited network?
#3: point-to-point

333. Refer to the exhibit. Host A wants to access the Internet. Which combination of a Layer 2 address and a Layer 3 address will enable this access from host A?
#4: Destination MAC: 0030.8517.44C4 Default gateway: 209.165.202.130

334. Refer to the exhibit. The PC, the routing table of which is displayed, is configured correctly. To which network interface does the IP address 192.168.1.154 belong?
#4: router interface fa0/1

335. Refer to the exhibit. Which list refers only to end devices?
#1: D,E,F,G

336. Refer to the exhibit. PC1 is unable to access PC2. To trouble shoot this problem, the technician needs to confirm that the next hop interface is operational. Which default gateway address should the technician ping from PC1 to confirm this?
#1: 10.0.0.254

337. A network technician wants to configure an IP address on a router interface by using the **ip address 192.168.1.0 255.255.255.0** command. Which prompt should the technician see when entering this command?
#2: Router(config-if)#

338. What is the effect of using the **Router# copy running-config startup-config** command on a router?
#3: The contents of NVRAM will change.

339. The network administrator wants to install a private application on a server. Which range of port numbers is normally assigned to this application to make it accessible by clients?
#4: 0 to 1023

340. Refer to the exhibit. In a network, host A is sending data segments to host B. The flow control of the segments that are being exchanged is displayed. Which two statements are true about this communication? (Choose two.)
#1: The initial window size is determined via the two-way handshake.
#3: Acknowledgment number 3001 indicates that host A will send the next segment with sequence number 3001.

341: Which statement is true about the running configuration file in a Cisco IOS device?
#1: It affects the operation of the device immediately when modified.

342. Refer to the exhibit. Which two facts can be determined about the topology? (Choose two.)
#3: A single broadcast domain is present.
#4: Three collision domains are present.

343. Refer to the exhibit. All devices in the network use default configurations. How many logical address ranges are required in this topology?
#4: 5 logical topologies

344. Refer to the exhibit. A technician has connected the PC to the switch using a Category 6 UTP cable. Which two statements are true about this connection? (Choose two.)
#3: The maximum distance between the switch and the PC can be 100 m.
#4: The maximum supported bandwidth is 1000 Mb/s.

345. Refer to the exhibit. To create the initial configuration, a network technician connected host A to the router using the connection that is shown. Which statement is true about this connection?
#2: It provides out-of-band console access.

346. Refer to the exhibit. Host X is unable to communicate with host Y. Which command can be run at host X to determine which intermediary device is responsible for this failure?
#4: tracert 192.168.1.1

347. Refer to the exhibit. Host B was powered off. What change will occur in the MAC table of the switch?
#2: The switch will remove the MAC address at Fa0/19.

Refer to the exhibit. The NAT functionality of the router is enabled to provide Internet access to the PC. However, the PC is still unable to access the Internet. Which IP address should be changed to 209.165.201.1 to enable the PC to access the Internet?
#4: 192.168.1.254

348. Refer to the exhibit. The serial interface of the router was configured with the use of the commands that are shown. The router cannot ping the router that is directly connected to interface serial 0/0/0. What should the network technician do to solve this problem?
#2: Configure an IP address on interface serial 0/0/0.
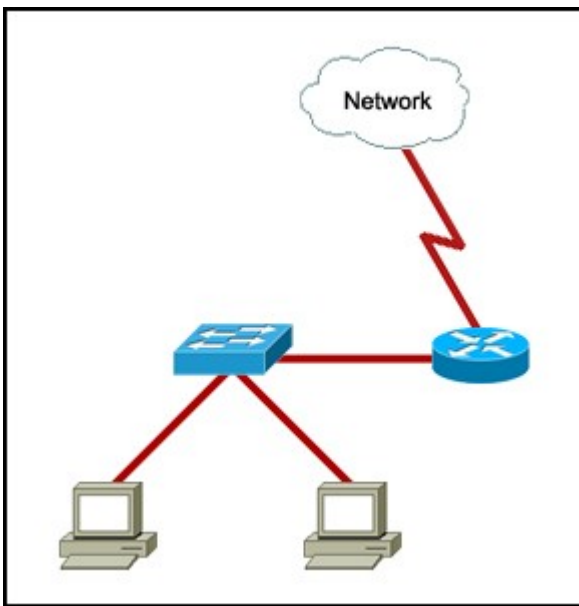
Refer to the exhibit. Which two facts can be determined about the topology? (Choose two.)

Three networks are needed.
Two logical address ranges are required.
A single broadcast domain is present.
**Three collision domains are present.**
Four networks are needed.

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

****The assigned address is a private address.**
The PC cannot communicate with the DNS server.
The network can have 126 hosts.
****The prefix of the computer address is /26.**
****The IP address is routable on the Internet.**

62

The IP address is a multicast address.

3
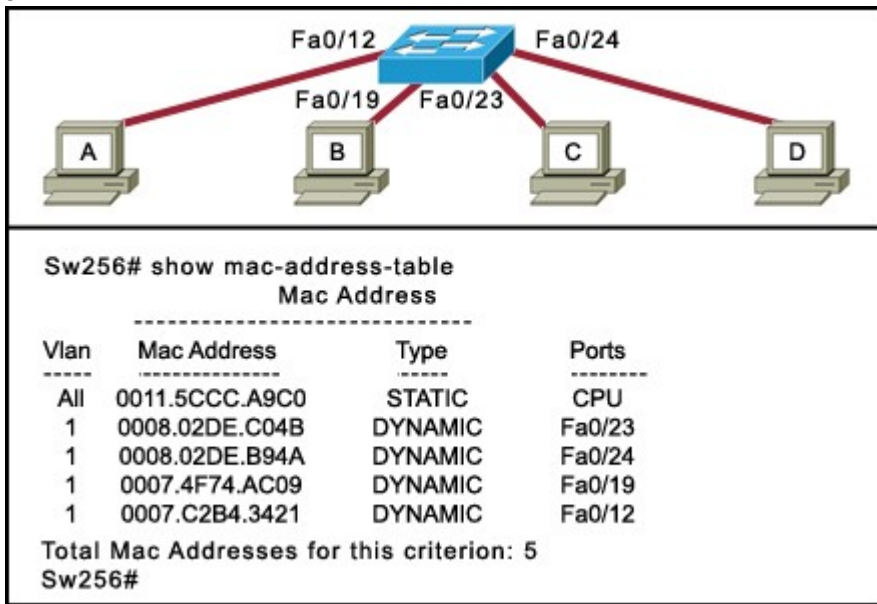
Refer to the exhibit. Host B was powered off. What change will occur in the MAC table of the switch?

The table will remain unaffected.

****The switch will remove the MAC address at Fa0/19.

The switch will retain the MAC address until host B is powered on again.

The switch will rebuild the MAC table by assigning the FFFF.FFFF.FFFF address to port Fa0/19.

4
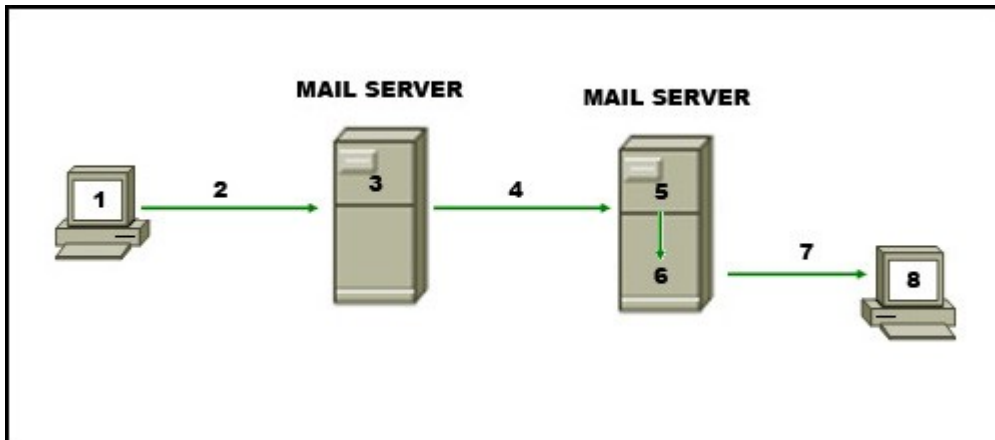
Refer to the exhibit. The diagram represents the process of sending e-mail between clients. Which list correctly identifies the component or protocol used at each numbered stage of the diagram?

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

5
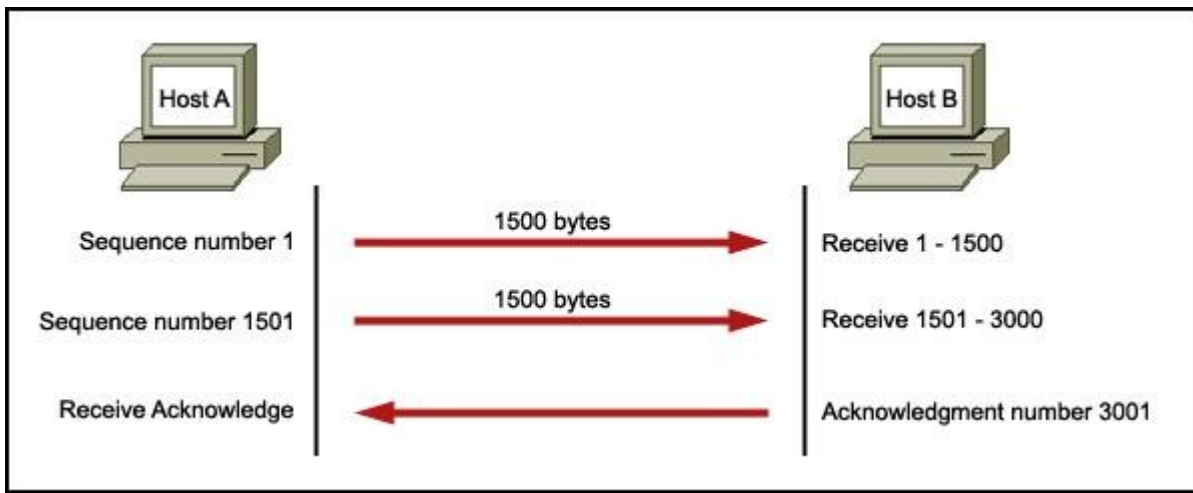
Refer to the exhibit. In a network, host A is sending data segments to host B. The flow control of the segments that are being exchanged is displayed. Which two statements are true about this communication? (Choose two.)

**The initial window size is determined via the two-way handshake.**
The window size for the TCP session that is represented is initially set to 3000 bytes.
Acknowledgment number 3001 indicates that host A will send the next segment with sequence number 3001.
Host B expects that the next received segment number will be 3000.
No more acknowledgments will be exchanged.

6
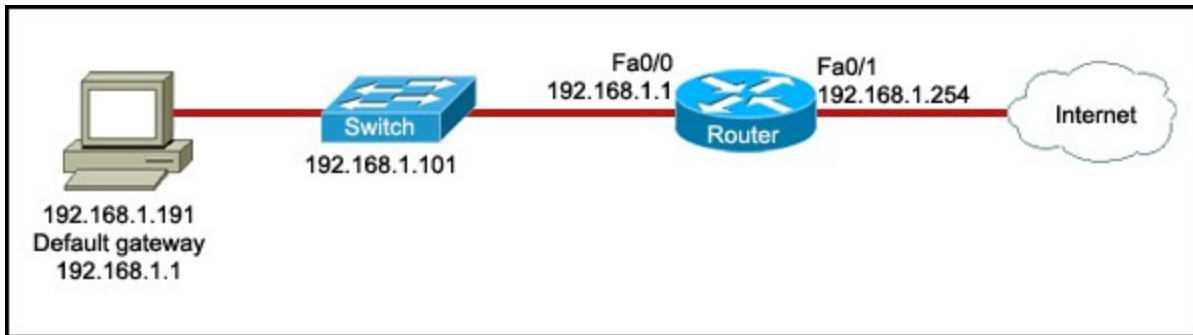
Refer to the exhibit. The NAT functionality of the router is enabled to provide Internet access to the PC. However, the PC is still unable to access the Internet. Which IP address should be changed to 209.165.201.1 to enable the PC to access the Internet?
192.168.1.191
192.168.1.101
192.168.1.1
192.168.1.254

7
Which OSI layer uses a connection-oriented protocol to ensure reliable delivery of data?
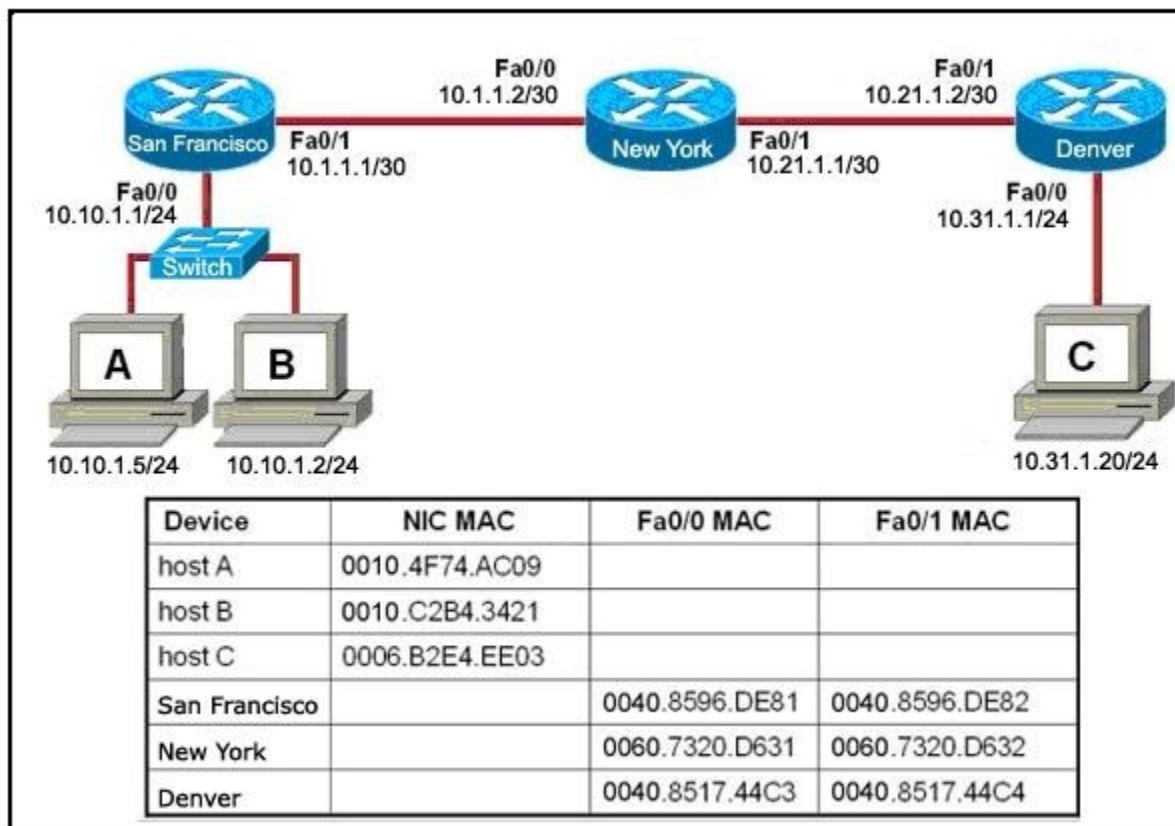application layer
presentation layer
session layer
transport layer

8

Refer to the exhibit. Host B attempts to establish a TCP/IP session with host C. During this attempt, a frame was captured at the FastEthernet interface fa0/1 of the San Francisco router. The packet inside the captured frame has the source IP address 10.10.1.2, and the destination IP address is 10.31.1.20. What is the destination MAC address of the frame at the time of capture?

0060.7320.D632
0060.7320.D631
****0040.8517.44C3
0009.B2E4.EE03
0010.C2B4.3421

9
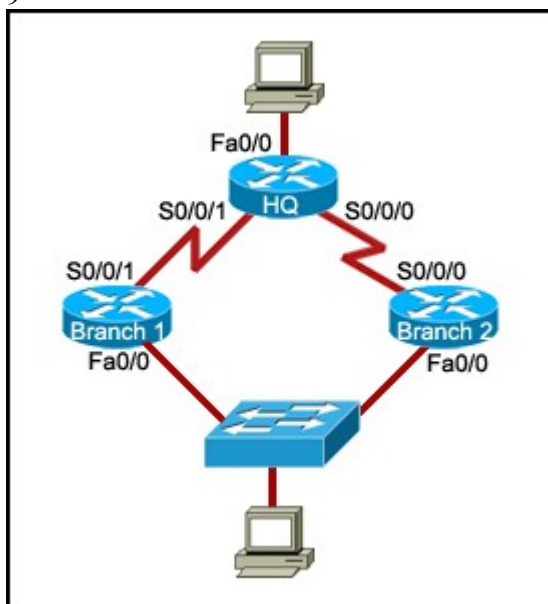
Refer to the exhibit. All devices in the network use default configurations. How many logical address ranges are required in this topology?

2
3
4
5 logical topologies

10

Which three statements are true about network layer addressing? (Choose three.)

It uniquely identifies each host.
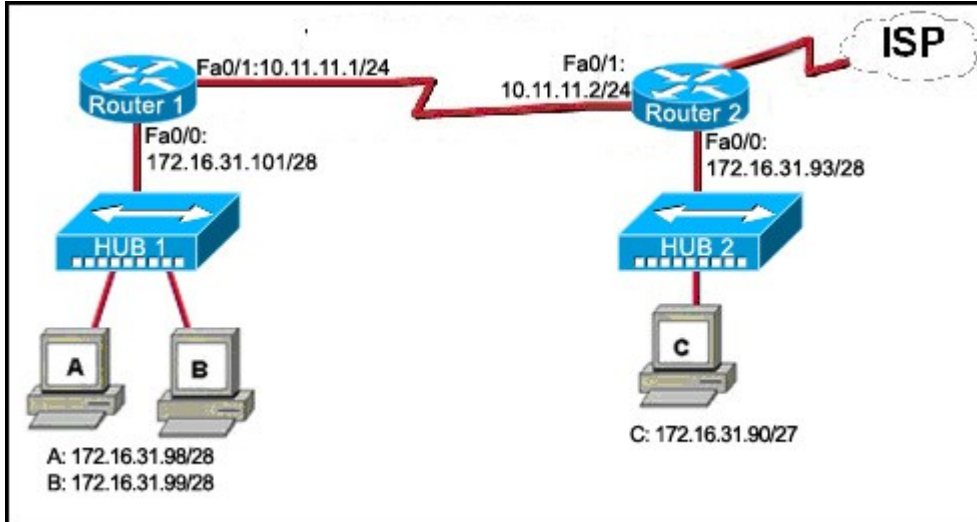**It assists in forwarding packets across internetworks.**
It uses a logical 32-bit IPv4 address.
It is not a configurable address.
It is a physical address.
It identifies the host from the first part of the address.

11

Caution Refer to the exhibit. Host C is able to ping 127.0.0.1 successfully, but is unable to communicate with hosts A and B in the organization. What is the likely cause of the problem?

Hosts A and B are not on the same subnet as host C.
The IP addresses on the router serial interfaces are wrong.
The subnet mask on host C is improperly configured.
The FastEthernet interface fa0/0 of router 1 is wrongly configured.

12

Which statement is true about the running configuration file in a Cisco IOS device?

It affects the operation of the device immediately when modified.
It is stored in NVRAM.
It should be deleted using the erase running-config command.
It is automatically saved when the router reboots.

13

Caution An organization wants to create a subnet of the IP network 172.16.0.0. This subnet will accommodate 1000 hosts. Which subnet mask should be assigned to this network?
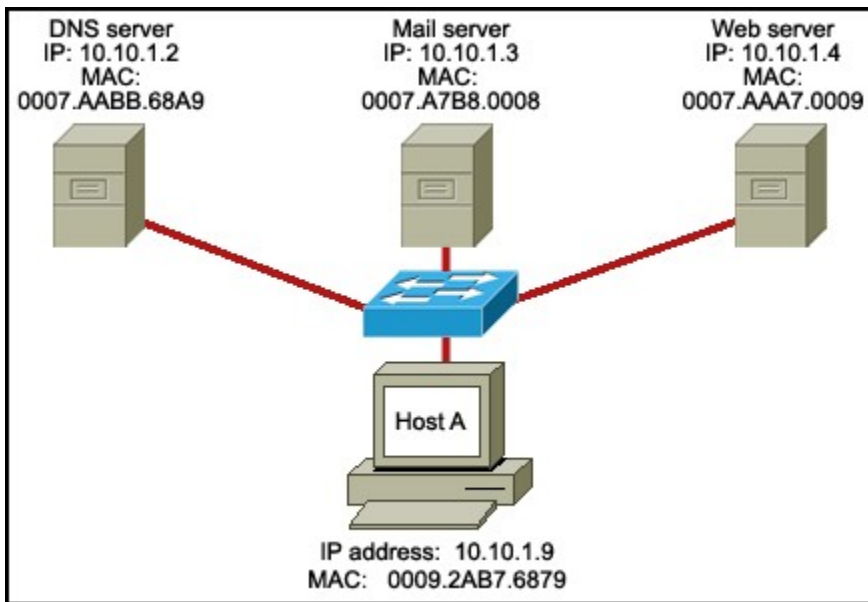
255.255.0.0
255.255.248.0
255.255.252.0
255.255.254.0
255.255.255.0
255.255.255.128

14

Refer to the exhibit. Host A is accessing multiple servers. Which combination of port number and address will uniquely identify a particular process running on a specific server?

MAC address of the server and port number of the service
IP address of the host and port number of the service
MAC address of the host and port number of the service
IP address of the server and port number of the service

15
Which three addresses belong to the category of public IP addresses? (Choose three.)
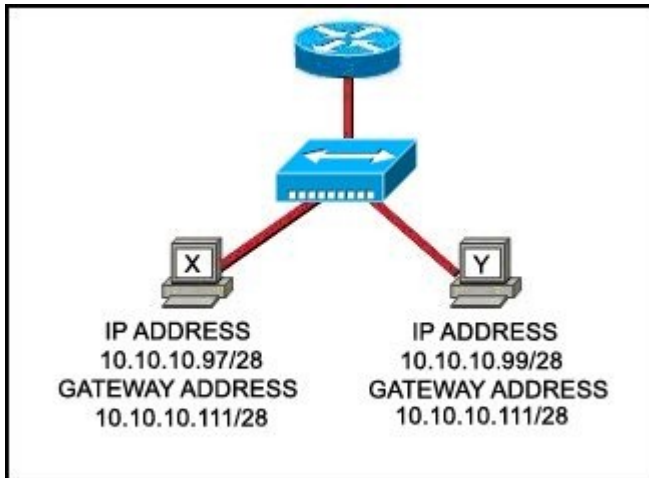127.0.0.1
196.1.105.6
132.11.9.99
10.0.0.1
172.16.9.10
46.1.1.97

16.

Refer to the exhibit. Communication for hosts X and Y is restricted to the local network. What is the reason for this?
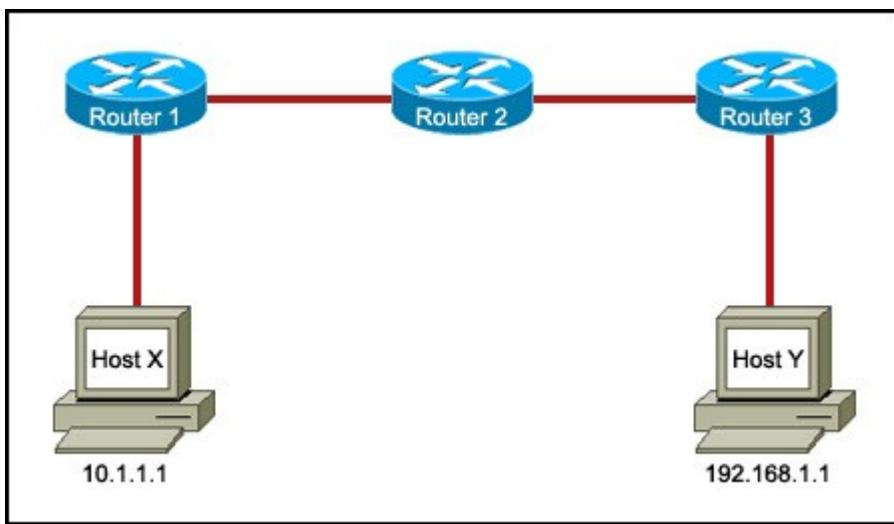Host X is assigned a network address.
Host Y is assigned a multicast address.
Host X and host Y belong to different networks.
****The gateway addresses are broadcast addresses.**

17

Refer to the exhibit. Host X is unable to communicate with host Y. Which command can be run at host X to determine which intermediary device is responsible for this failure?

> telnet 192.168.1.1
> ping 192.168.1.1
> ftp 192.168.1.1
> **tracert 192.168.1.1**

18

Caution A host is transmitting a video over the network. How does the transport layer allow this host to use multiple applications to transmit other data at the same time as the video transmission?
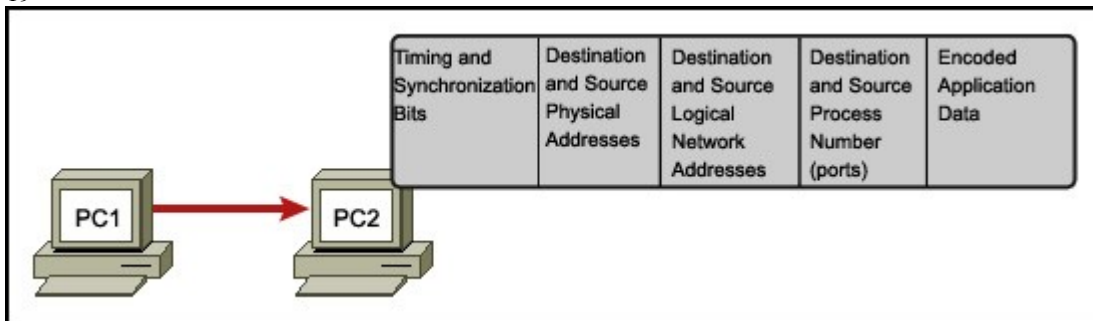
> It uses error control mechanisms.
> It uses a connectionless protocol only for multiple simultaneous transmissions.
> It uses multiple Layer 2 source addresses.
> **It uses multiple port numbers.**

19

Caution Refer to the exhibit. In a network, PC1 sends a message to PC2. The frame received at PC2 is shown. What information in this frame determines the correct destination application?

> timing and synchronization bits
> destination and source physical addresses
> destination and source logical network addresses
> **destination and source process numbers**

20

Caution 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 - straight-through cable Connection 2 - crossover cable Connection 3 - rollover cable**
> Connection 1 - crossover cable Connection 2 - rollover cable Connection 3 - straight-through cable
> Connection 1 - crossover cable Connection 2 - straight-through cable Connection 3 - rollover cable

21

```
Router(config)# int serial 0/0/0
Router(config-if)# clock rate 56000
Router(config-if)# no shutdown
Router(config-if)# exit
Router(config)#
```

Refer to the exhibit. The serial interface of the router was configured with the use of the commands that are shown. The router cannot ping the router that is directly connected to interface serial 0/0/0. What should the network technician do to solve this problem?
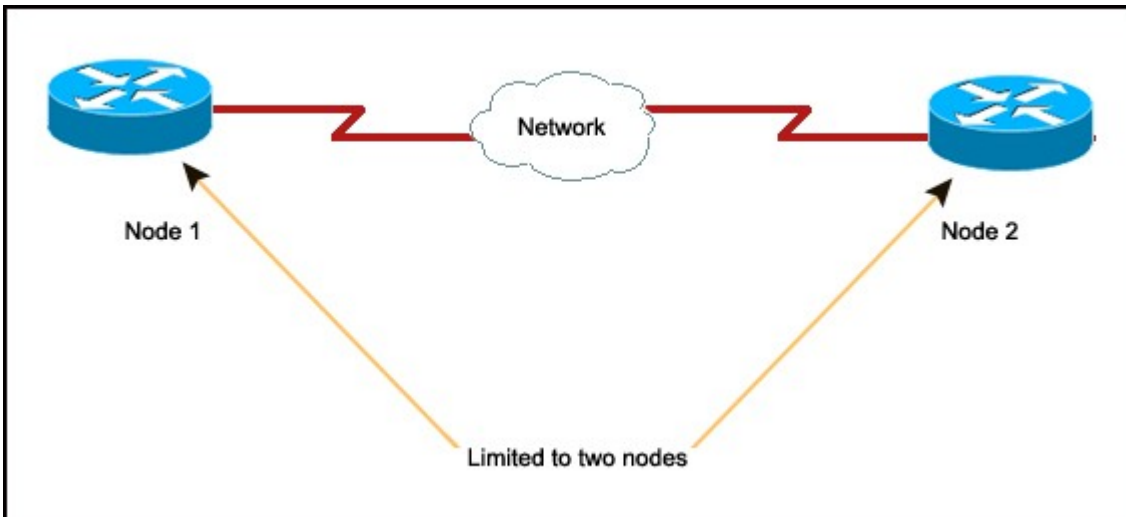
Configure the description at interface serial 0/0/0.
Configure an IP address on interface serial 0/0/0.
Remove the no shutdown command at interface serial 0/0/0
Reboot the router.

22

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

star
ring
point-to-point
multi-access

23

Which three statements are true about transport layer protocols? (Choose three.)

TCP and UDP manage communication between multiple applications.
TCP retransmits the packets for which the acknowledgment is not received.
TCP acknowledges received data.
UDP exchanges frames between the nodes of the network.
TCP has no mechanism to acknowledge transmission errors.
UDP uses windowing and sequencing to provide reliable transfer of data.

24

Which OSI layer offers ordered data reconstruction services?

application layer
network layer
presentation layer
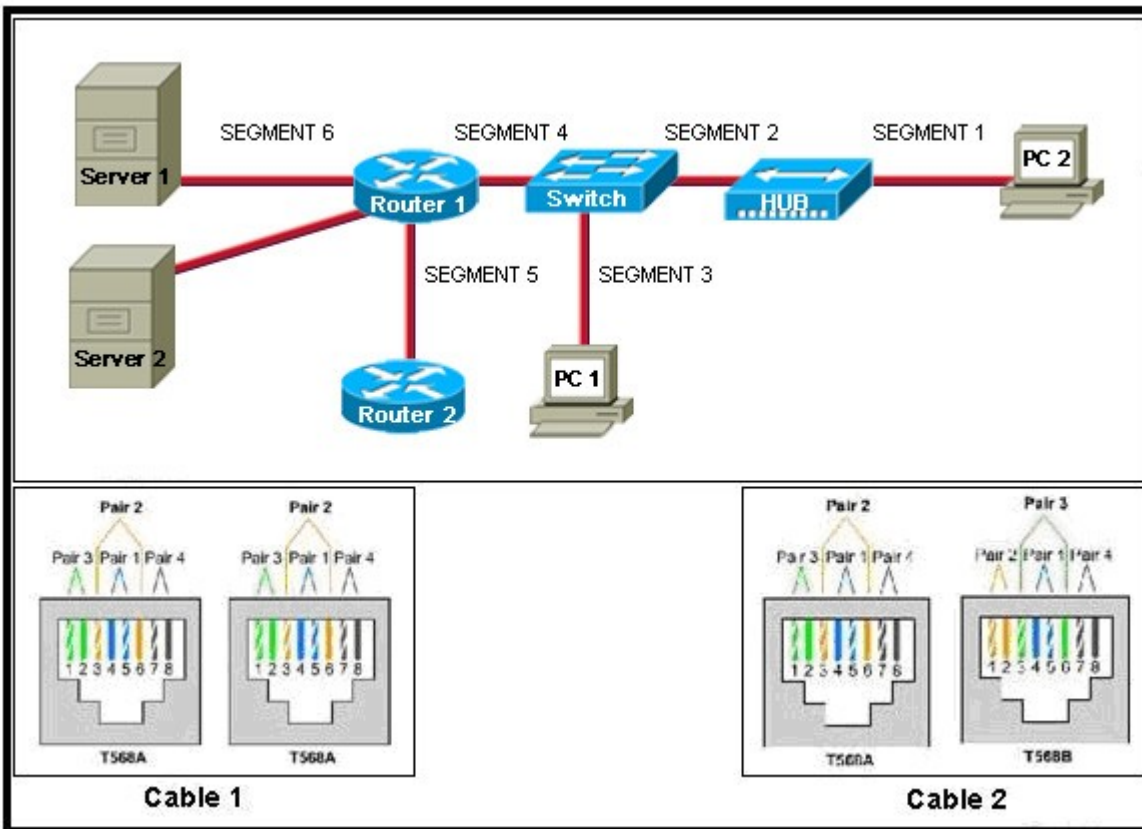session layer
transport layer

25

Which password restricts Telnet access to the router?

enable
enable secret
console
VTY

26

Refer to the exhibit. Cable 1 and Cable 2 are wired for specific physical layer requirements. Which three segments use Cable 2? (Choose three.)

      Segment 1
      ****Segment 2
      Segment 3
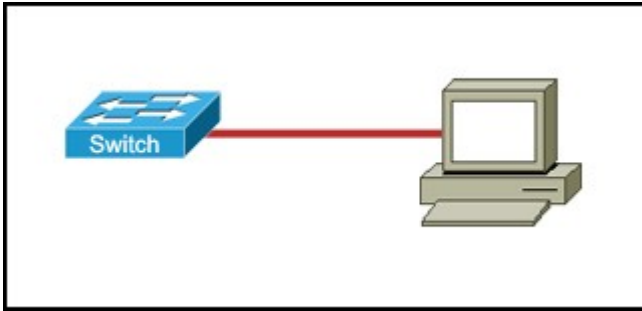   ****Segment 4
      ****Segment 5
      Segment 6

27

Refer to the exhibit. A technician uses the nslookup command on the PC and views the output that is displayed in the exhibit. What is the IP address of the primary domain name server used by the host?

10.10.10.32
192.168.1.5
192.168.1.99
192.168.2.100

28

Refer to the exhibit. A technician has connected the PC to the switch using a Category 6 UTP cable. Which two statements are true about this connection? (Choose two.)

  The cable that is used is an Ethernet crossover cable.
  The transmit pin of the cable is terminated to the receive pin.
  The maximum distance between the switch and the PC can be 100 m.
  The maximum supported bandwidth is 1000 Mb/s.
  The Category 6 cable simulates a point-to-point WAN link and is unusable for this type of connection.

29

What is the effect of using the Router# copy running-config startup-config command on a router?

  The contents of ROM will change.
  The contents of RAM will change.
  The contents of NVRAM will change.
  The contents of flash will change.

30
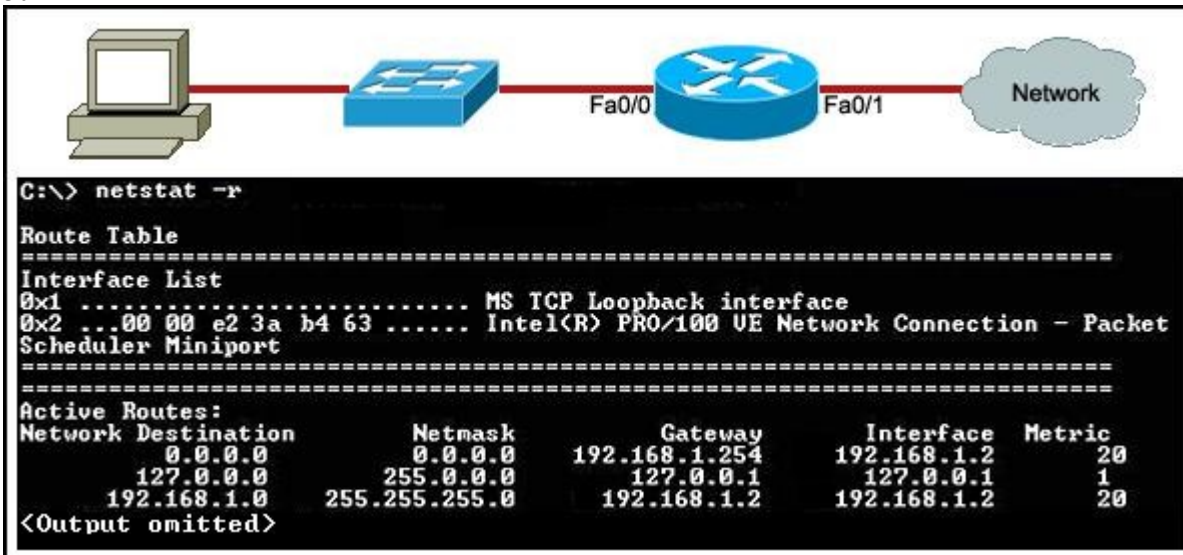
****Caution**** Refer to the exhibit. The PC, the routing table of which is displayed, is configured correctly. To which network device or interface does the IP address 192.168.1.254 belong?

  PC
  switch
  router interface fa0/0
  router interface fa0/1

31

Which three IPv4 addresses represent valid host addresses for a subnet? (Choose three.)

  10.1.12.79/28
  10.1.12.113/28
  10.1.12.32/28
  10.1.11.5/27

10.1.11.97/27
10.1.11.128/27

32
The network administrator wants to install a private application on a server. Which range of port numbers is normally assigned to this application to make it accessible by clients?

    0 to 255
    49152 to 65535
    1024 to 49151
    0 to 1023

33
A network technician wants to configure an IP address on a router interface by using the ip address 192.168.1.0 255.255.255.0 command. Which prompt should the technician see when entering this command?

    Router>
    Router(config-if)#
    Router#
    Router(config)#

34

Refer to the exhibit. A PC is communicating with another PC on a remote network. The two networks are connected by three routers. Which action will help to identify the path between the hosts?

    Use the ipconfig command at the host.
    Use the ipconfig/all command at the destination.
    Use the tracert command at the host.
    Use the ping command at the destination.

35
Which device should be used for routing a packet to a remote network?

    access switch
    DHCP server
    hub
    router

36

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

    The protocol is a connection-oriented protocol.
    This exchange is part of the three-way handshake.
    The SYN flag is representing the initial establishment of a session.
    The destination port indicates that a Telnet session has been initiated.
    The source port does not support communication with the destination port that is listed.

37

Refer to the exhibit. A host is using NAT to connect to the Internet. Which three IP addresses enable this connection? (Choose three.)

    10.1.1.63
    10.1.1.37
    10.1.1.39
    10.1.1.32
    10.1.1.60
    10.1.1.2

38

****Caution**** Refer to the exhibit. PC1 is unable to access PC2. To troubleshoot this problem, the technician needs to confirm that the next hop interface is operational. Which default gateway address should the technician ping from PC1 to confirm this?

    10.0.0.254
    192.168.0.249
    192.168.0.250
    10.0.1.254

39

****Caution**** Refer to the exhibit. A host is connected to hub 1. Which combination of IP address, subnet mask, and default gateway can allow this host to function in the network?

    IP address: 172.16.31.36 Subnet mask: 255.255.255.240 Default gateway: 172.16.31.35
    IP address: 172.16.31.63 Subnet mask: 255.255.255.224 Default gateway: 172.16.31.35
    IP address: 172.16.31.29 Subnet mask: 255.255.255.248 Default gateway: 172.16.31.35
    IP address: 172.16.31.32 Subnet mask: 255.255.255.224 Default gateway: 172.16.31.35
    IP address: 172.16.31.29 Subnet mask: 255.255.255.240 Default gateway: 172.16.30.1
    IP address: 172.16.31.37 Subnet mask: 255.255.255.224 Default gateway: 172.16.31.35

40

An organization has been assigned network ID 10.10.128.0 and subnet mask 255.255.224.0. Which IP address range can be used for this organization?

    10.10.128.0 to 10.10.160.255
    10.10.128.0 to 10.10.159.255
    10.10.128.0 to 10.10.192.255
    10.10.128.0 to 10.10.0.159
    10.10.128.0 to 10.10.159.0

41

Which two types of media are useful for connecting two devices separated by a distance of 500 meters? (Choose two.)

    10 BASE-T
    1000 BASE-TX
    10 BASE-2
    1000 BASE LX
    1000 BASE-SX

42

Refer to the exhibit. Host A wants to access the Internet. Which combination of a Layer 2 address and a Layer 3 address will enable this access from host A?

    Destination MAC: 0030.8596.DE83 Default gateway: 209.165.202.130
    Destination MAC: 0030.8596.DE82 Default gateway: 172.16.9.2
    Destination MAC: 0030.8517.44C4 Default gateway: 172.16.1.1
    Destination MAC: 0030.8517.44C4 Default gateway: 209.165.202.130

43

Refer to the exhibit. To create the initial configuration, a network technician connected host A to the router using the connection that is shown. Which statement is true about this connection?

    It terminates at the Ethernet port of the router.
    It provides out-of-band console access.
    It terminates at the serial interface of the router.
    It requires a Telnet client on host A to access the router.

44

Refer to the exhibit. Which list refers only to end devices?

   D,E,F,G
   A,H,B,C
   A,D,E,F
   A,D,E,G

45

Refer to the exhibit. The network administrator wants to remotely access the CLI of the router from PC1 using modem 1. Which port of the router should be connected to modem 2 to enable this access?

   console
   Ethernet
   auxiliary
   serial

46

What is the result of using the clock rate 56000 command at the serial interface of the router?

   The interface is configured as a DCE device.
   The interface timers are cleared.
   The FastEthernet interface is made to emulate a serial interface by assigning it a timing signal.
   The IP address for the serial interface is configured.

47

What are two functions of the data link layer? (Choose two.)

   It segments and reorders the data.
   It exchanges data between programs that are running on the source and destination hosts.
   It controls how data is placed onto the media.
   It generates signals to represent the bits in each frame.
   It encapsulates each packet with a header and a trailer to transfer it across the local media.

48

Because of a security violation, the router password must be changed. What information can be learned from these configuration entries? (Choose two.)

Router(config)# line vty 0 4
Router(config-line)# password arj15
Router(config-line)# login

   This configuration allows users to connect by using a modem.
   Users must specify which line, 0 or 4, they wish to connect to when making a connection.
   This configuration allows users to connect to the router via the use of the telnet command.
   This configuration allows five users to make simultaneous connections to this router.
   The configured password is automatically encrypted on the router.

49

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

   It monitors the media for presence of a data signal.
   After detecting a collision, hosts can resume transmission after a random timer has expired.
   A jam signal is used to ensure that all hosts are aware that a collision has occurred.
   Devices can be configured with a higher transmission priority.
   Data is transmitted only when the data signal is present.
   It uses a token system to avoid collisions.

50

Which information is used by the router to determine the path between the source and destination hosts?

   the host portion of the IP address
   the network portion of the IP address
   host default gateway address

the MAC address

Domain Knowledge - Weighted Score
Max Points: 108
Earned Points: 75
Percentage: 69.4%

Personalized Feedback has been generated based on your responses to this exam. Click Here to view your Personalized Feedback

Domain Knowledge - Binary Score
Max Points: 50
Earned Points: 31
Percentage: 62.0%

Close

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.

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

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.

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)#

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.

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

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

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

Which OSI layers offers reliable, connection-oriented data communication services?

application
presentation
session
transport
network

Refer to the exhibit. What is required on host A for a network technician to create the initial configuration on Router1?

an FTP client
a Telnet client
a terminal emulation program
a web browser

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

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

18

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.

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

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

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.

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

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

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

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

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

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

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

Examine the graphic with current configurations. Host A in the Clerical office failed and was replaced. Although a ping to 127.0.0.1 was successful, the replacement computer cannot access the company network. With proxy ARP disabled on the Fa0/0 interface of the New York router, what is the likely cause of the problem?

network card failure
network cables unplugged
IP address incorrectly entered
subnet mask incorrectly entered

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

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.

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.

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

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

physical addressing
encoding
routing
cabling
media access control

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

IP
UDP
Ethernet
a connectionless acknowledgement
an upper-layer, connection-oriented protocol or service

****Caution****   Refer to the exhibit. A network administrator remotely accesses the CLI of RouterB from PC1 using Telnet. Which statement is true about this connection?

The data is automatically encrypted.
A Telnet server process is running on PC1.
The connection is made through a VTY session on the router.
A GET request was sent to RouterB to retrieve data during this session.

37   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

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

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

Flash
NVRAM
RAM
ROM

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.

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

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

application
presentation
session
transport

****CAUTION****   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

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

Athens
Ankara
London
Paris
PC4

Refer to the exhibit. The command that is shown was issued on a PC. What does the IP address 192.168.33.2 represent?

IP address of the host
default gateway of the host
IP address of the homepage for the host
primary domain name server for the host
IP address of the website resolver1.mooki.local

Which password is automatically encrypted when it is created?

vty
aux
console
enable secret
enable password

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

48

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

star
ring
point-to-point

multiaccess
mesh

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.

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 clock rate command on interface Serial 0/0/0
issue the description command on interface Serial 0/0/1
issue the ip address command on interface FastEthernet 0/0
issue the no shutdown command on interface FastEthernet 0/1