Cisco

Exam Questions 100-105

Cisco Interconnecting Cisco Networking Devices Part 1 (ICND1 v3.0)
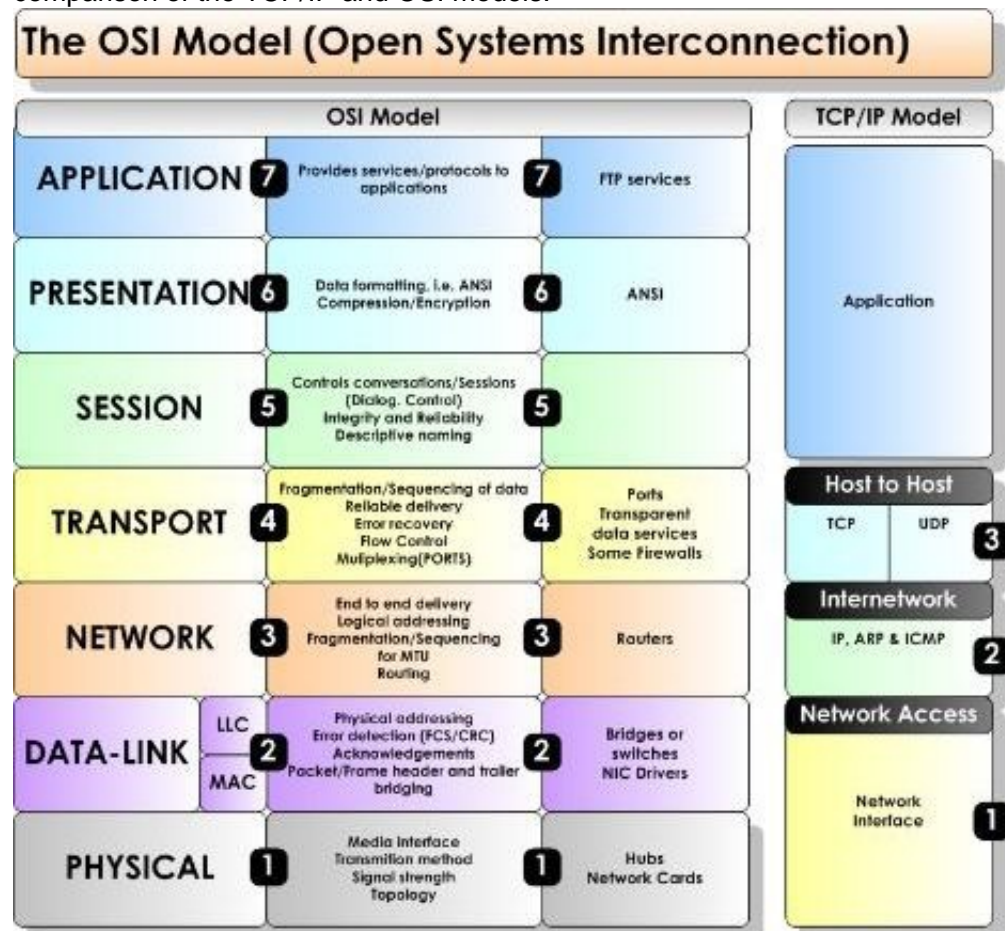
NEW QUESTION 1
Which layer of the TCP/IP stack combines the OSI model physical and data link layers?

A. Internet layer
B. transport layer
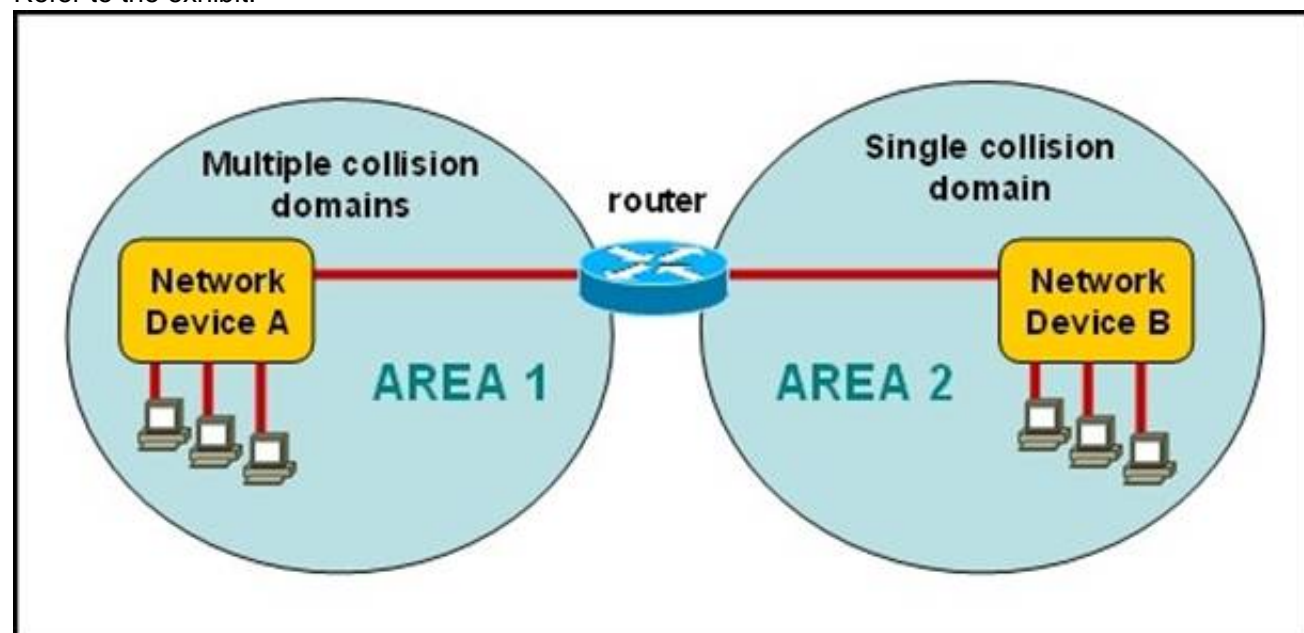C. application layer
D. network access layer

Answer: D

Explanation: The Internet Protocol Suite, TCP/IP, is a suite of protocols used for communication over the internet. The TCP/ IP model was created after the OSI 7 layer model for two major reasons. First, the foundation of the Internet was built using the TCP/IP suite and through the spread of the World Wide Web and Internet, TCP/IP has been preferred. Second, a project researched by the Department of Defense (DOD) consisted of creating the TCP/IP protocols. The DOD's goal was to bring international standards which could not be met by the OSI model.
Since the DOD was the largest software consumer and they preferred the TCP/IP suite, most vendors used this model rather than the OSI. Below is a side by side comparison of the TCP/IP and OSI models.

NEW QUESTION 2
Refer to the exhibit.

A network has been planned as shown. Which three statements accurately describe the areas and devices in the network plan? (Choose three.)

A. Network Device A is a switch.
B. Network Device B is a switch.
C. Network Device A is a hub.
D. Network Device B is a hub.
E. Area 1 contains a Layer 2 device.
F. Area 2 contains a Layer 2 device.

Answer: ADE

Explanation: Switches use a separate collision domain for each port, so device A must be a switch. Hubs, however, place all ports in the same collision domain so device B is a hub. Switches reside in layer 2 while hubs are layer 1 devices.

NEW QUESTION 3
At which layer of the OSI model does the protocol that provides the information that is displayed by the show cdp neighbors command operate?

A. application
B. transport
C. network
D. physical
E. data link

Answer: E

Explanation: CDP is a device discovery protocol that runs over Layer 2 (the data link layer) on all Cisco- manufactured devices (routers, bridges, access servers, and switches) and allows network management applications to discover Cisco devices that are neighbors of already known devices. With CDP, network management applications can learn the device type and the Simple Network Management Protocol (SNMP) agent address of neighboring devices running lower-layer, transparent protocols.
CDP allows devices to share basic configuration information without even configuring any protocol specific information and is enabled by default on all interfaces.
CDP is a Datalink Protocol occurring at Layer 2 of the OSI model.
CDP is not routable and can only go over to directly connected devices.
CDP is enabled, by default, on all Cisco devices. CDP updates are generated as multicasts every 60 seconds with a hold-down period of 180 seconds for a missing neighbor. The no cdp run command globally disables CDP, while the no cdp enable command disables CDP on an interface. Use show cdp neighbors to list out your directly connected Cisco neighboring devices. Adding the detail parameter will display the layer-3 addressing configured on the neighbor.
Reference: http://computernetworkingnotes.com/cisco-devices-administration-and-configuration/cisco-discoveryprotocol.html

NEW QUESTION 4
Which statements accurately describe CDP? (Choose three.)

A. CDP is an IEEE standard protocol.
B. CDP is a Cisco proprietary protocol.
C. CDP is a datalink layer protocol.
D. CDP is a network layer protocol.
E. CDP can discover directly connected neighboring Cisco devices.
F. CDP can discover Cisco devices that are not directly connected.

Answer: BCE

Explanation: CDP (Cisco Discovery Protocol) is a proprietary protocol designed by Cisco to help administrators collect information about both locally attached and remote devices. By using CDP, you can gather hardware and protocol information about neighbor devices containing useful info for troubleshooting and documenting the network.

NEW QUESTION 5
Which layer of the OSI model controls the reliability of communications between network devices using flow control, sequencing and acknowledgments?

A. Physical
B. Data-link
C. Transport
D. Network

Answer: C

NEW QUESTION 6
Which transport layer protocol provides best-effort delivery service with no acknowledgment receipt required?

A. HTTP
B. IP
C. TCP
D. Telnet
E. UDP

Answer: E

Explanation: UDP provides a connectionless datagram service that offers best-effort delivery, which means that UDP does not guarantee delivery or verify sequencing for any datagrams. A source host that needs reliable communication must use either TCP or a program that provides its own sequencing and acknowledgment services.

NEW QUESTION 7
DRAG DROP
On the left are various network protocols. On the right are the layers of the TCP/IP model. Assuming a reliable connection is required, move the protocols on the left to the TCP/IP layers on the right to show the proper encapsulation for an email message sent by a host on a LAN. (Not all options are used.)

On the left are various network protocols. On the right are the layers of the TCP/IP model. Assuming a reliable connection is required, move the protocols on the left to the TCP/IP layers on the right to show the proper encapsulation for an email message sent by a host on a LAN. (Not all options are used.)

UDP	application layer
SNMP	transport layer
IP	internet layer
ARP	network access layer
Ethernet	
TCP	
SMTP	

Answer:

Explanation:

On the left are various network protocols. On the right are the layers of the TCP/IP model. Assuming a reliable connection is required, move the protocols on the left to the TCP/IP layers on the right to show the proper encapsulation for an email message sent by a host on a LAN. (Not all options are used.)

UDP	SMTP
SNMP	TCP
IP	IP
ARP	Ethernet
Ethernet	
TCP	
SMTP	

NEW QUESTION 8
Which two characteristics apply to Layer 2 switches? (Choose two.)
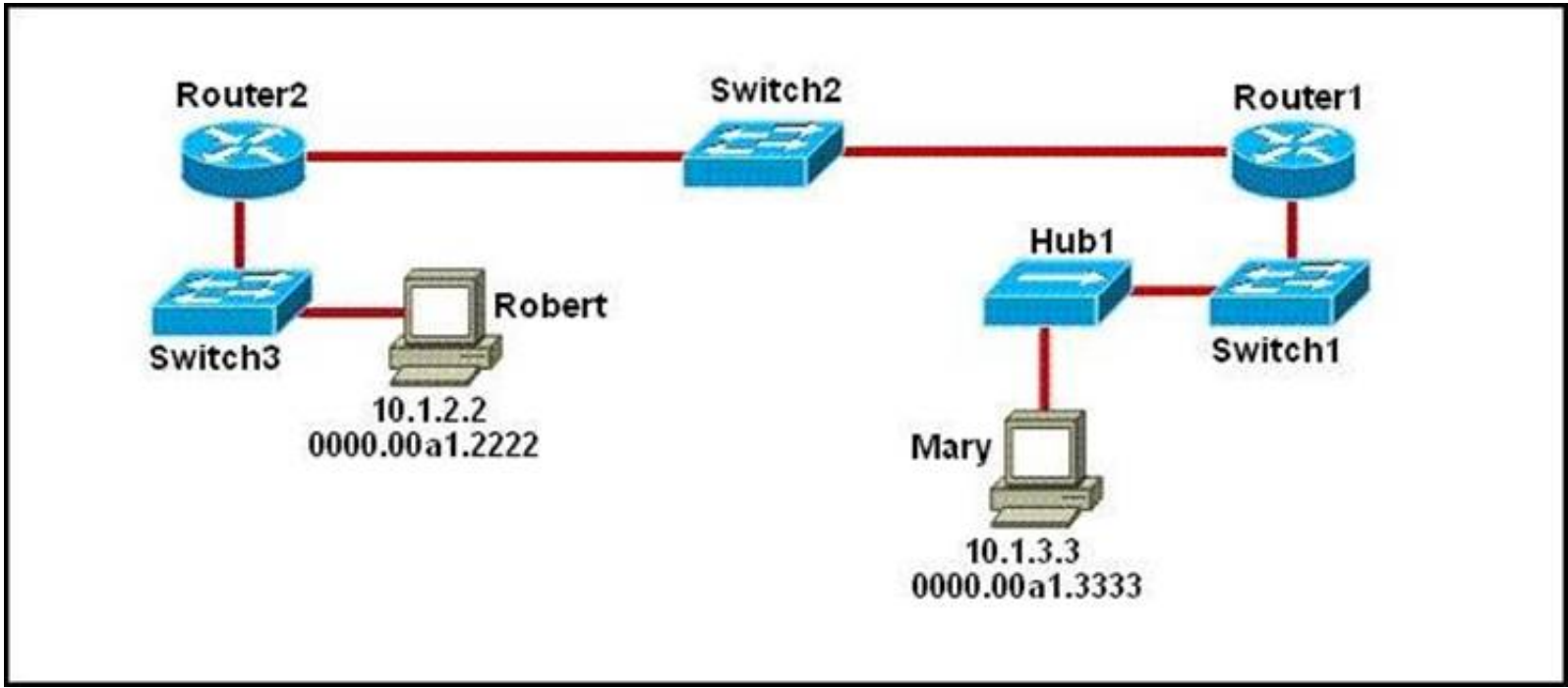
A. Increases the number of collision domains
B. Decreases the number of collision domains
C. Implements VLAN
D. Decreases the number of broadcast domains
E. Uses the IP address to make decisions for forwarding data packets

Answer: AC

Explanation: Layer 2 switches offer a number of benefits to hubs, such as the use of VLANs and each switch port is in its own separate collision domain, thus eliminating collisions on the segment.

NEW QUESTION 9
Refer to the exhibit.

As packets travel from Mary to Robert, which three devices will use the destination MAC address of the packet to determine a forwarding path? (Choose three.)

A. Hub1
B. Switch1
C. Router1
D. Switch2
E. Router2
F. Switch3

Answer: BDF

Explanation: Switches use the destination MAC address information for forwarding traffic, while routers use the destination IP address information.
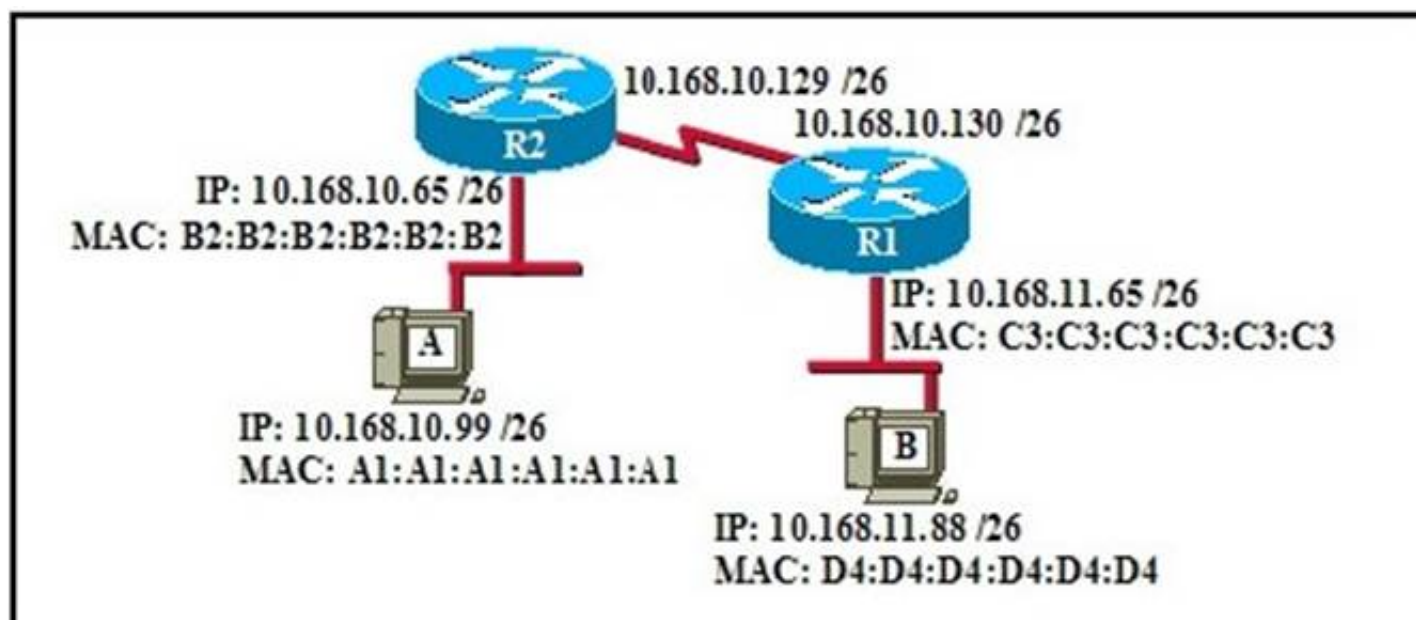Local Area Networks employ Layer 2 Switches and Bridges to forward and filter network traffic. Switches and Bridges operate at the Data Link Layer of the Open System Interconnect Model (OSI). Since Switches and Bridges operate at the Layer 2 they operate more intelligently than hubs, which work at Layer 1 (Physical Layer) of the OSI. Because the switches and bridges are able to listen to the traffic on the wire to examine the source and destination MAC address. Being able to listen to the traffic also allows the switches and bridges to compile a MAC address table to better filter and forward network traffic.
To accomplish the above functions switches and bridges carry out the following tasks: MAC address learning by a switch or a bridge is accomplished by the same method. The switch or bridge listens to each device connected to each of its ports and scan the incoming frame for the source MAC address. This creates a MAC address to port map that is cataloged in the switches/bridge MAC database. Another name for the MAC address table is content addressable memory or CAM table.
When a switch or bridge is listening to the network traffic, it receives each frame and compares it to the MAC address table. By checking the MAC table the switch/ bridge are able o determine which port the frame came in on. If the frame is on the MAC table the frame is filtered or transmitted on only that port. If the switch determines that the frame is not on the MAC table, the frame is forwarded out to all ports except the incoming port.

NEW QUESTION 10
Refer to the exhibit.

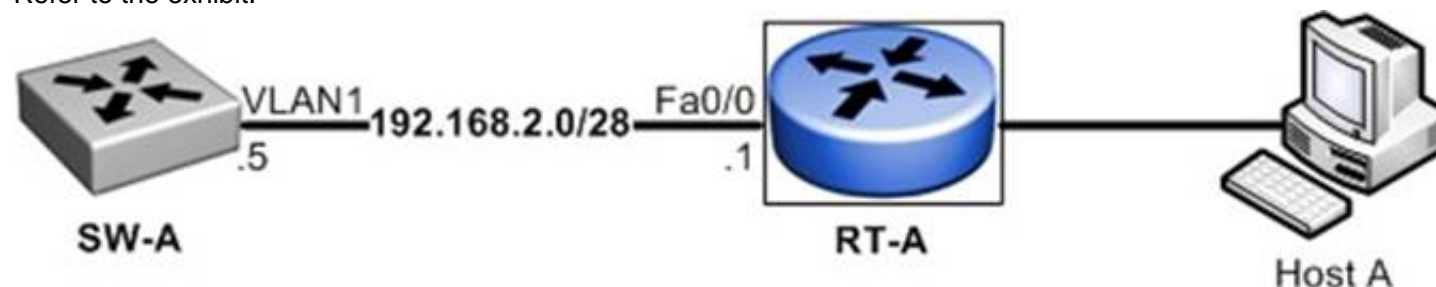If host A sends an IP packet to host B, what will the source physical address be in the frame when it reaches host B?

A. 10.168.10.99
B. 10.168.11.88
C. A1:A1:A1:A1:A1:A1
D. B2:B2:B2:B2:B2:B2
E. C3:C3:C3:C3:C3:C3
F. D4:D4:D4:D4:D4:D4

Answer: E

Explanation: When packets transfer from one host to another across a routed segment, the source IP address always remains the same source IP address, and the source physical (MAC) address will be the existing router's interface address. Similarly, the destination IP address always remains the same and the destination physical (MAC) address is the destination router's interface address.

NEW QUESTION 10
Refer to the exhibit.

What must be configured to establish a successful connection from Host A to switch SW-A through router RT-A?

A. VLAN 1 on RT-A
B. IP routing on SW-A
C. default gateway on SW-A
D. crossover cable connecting SW-A and RT-A

Answer: C

Explanation: In order for the switch to reach networks that are not local, such as networks attached to different interfaces of the router, it will need to set its default gateway to be the IP address of the attached router.

NEW QUESTION 13
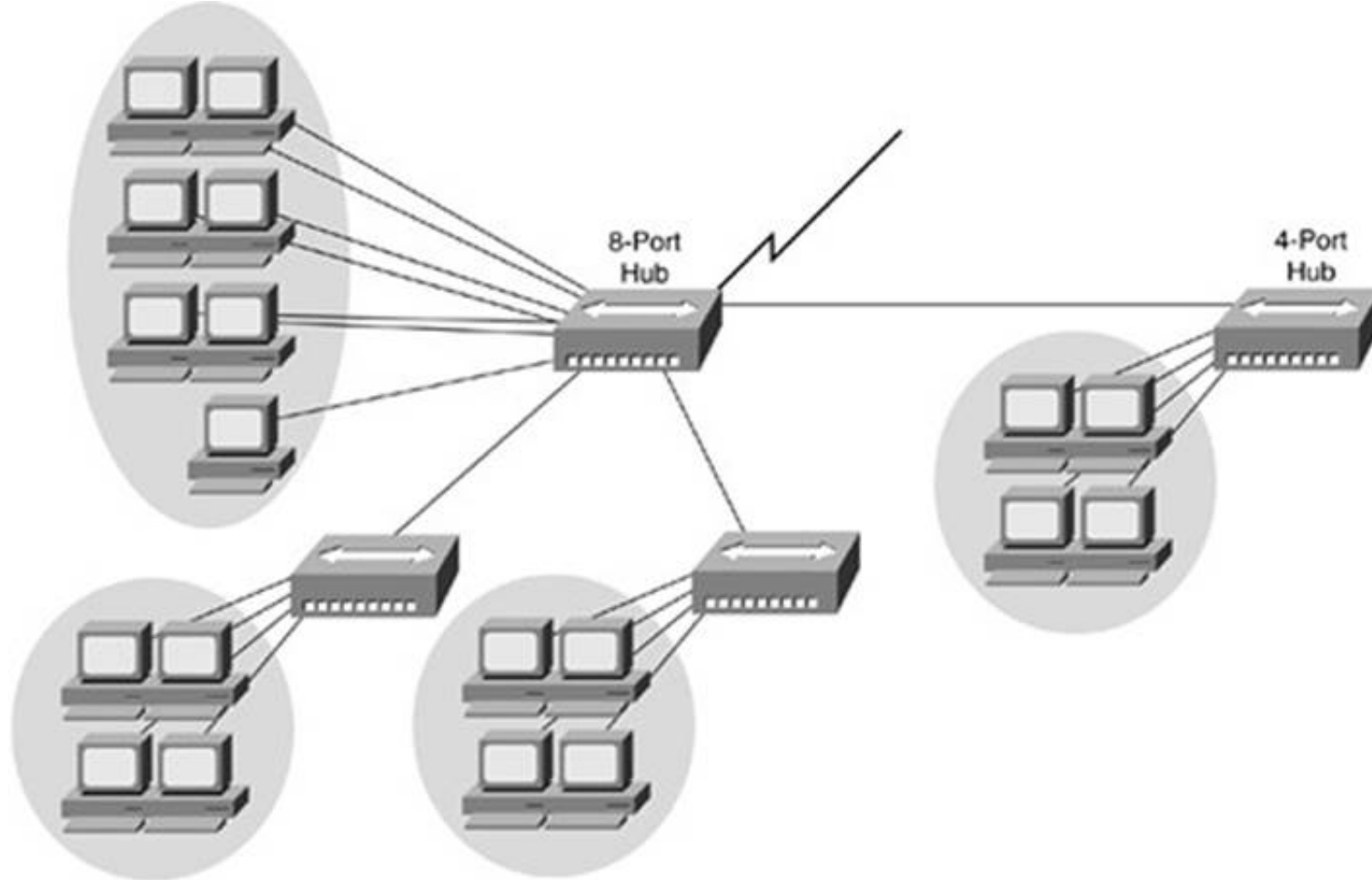Which three statements are true about the operation of a full-duplex Ethernet network? (Choose three.)

A. There are no collisions in full-duplex mode.
B. A dedicated switch port is required for each full-duplex node.
C. Ethernet hub ports are preconfigured for full-duplex mode.
D. In a full-duplex environment, the host network card must check for the availability of the network media before transmitting.
E. The host network card and the switch port must be capable of operating in full-duplex mode.

Answer: ABE

Explanation: Half-duplex Ethernet is defined in the original 802.3 Ethernet and Cisco says you only use one wire pair with a digital signal running in both directions on the wire. It also uses the CSMA/CD protocol to help prevent collisions and to permit retransmitting if a collision does occur. If a hub is attached to a switch, it must operate in half-duplex mode because the end stations must be able to detect collisions. Half-duplex Ethernet—typically 10BaseT—is only about 30 to 40 percent efficient as Cisco sees it, because a large 10BaseT network will usually only give you 3- to 4Mbps—at most.
Full-duplex Ethernet uses two pairs of wires, instead of one wire pair like half duplex. Also, full duplex uses a point-to-point connection between the transmitter of the transmitting device and the receiver of the receiving device, which means that with full-duplex data transfer, you get a faster data transfer compared to half duplex. And because the transmitted data is sent on a different set of wires than the received data, no collisions occur. The reason you don't need to worry about collisions is because now Full-duplex Ethernet is like a freeway with multiple lanes instead of the single-lane road provided by half duplex. Full-duplex Ethernet is supposed to offer 100 percent efficiency in both directions; this means you can get 20Mbps with a 10Mbps Ethernet running full duplex, or 200Mbps for FastEthernet.

NEW QUESTION 16
Refer to the exhibit.

If the hubs in the graphic were replaced by switches, what would be virtually eliminated?

A. broadcast domains
B. repeater domains
C. Ethernet collisions
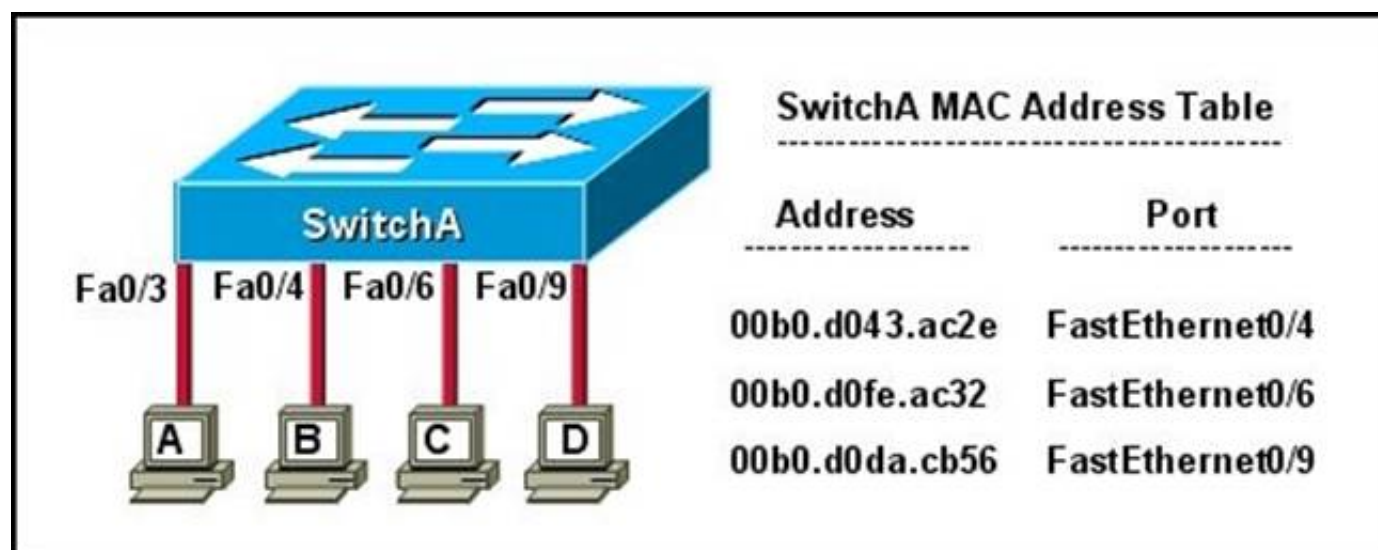D. signal amplification
E. Ethernet broadcasts

Answer: C

Explanation: Modern wired networks use a network switch to eliminate collisions. By connecting each device directly to a port on the switch, either each port on a switch becomes its own collision domain (in the case of half duplex links) or the possibility of collisions is eliminated entirely in the case of full duplex links.

NEW QUESTION 21
Refer to the exhibit.

The exhibit is showing the topology and the MAC address table. Host A sends a data frame to host D. What will the switch do when it receives the frame from host A?

A. The switch will add the source address and port to the MAC address table and forward the frame to host D.
B. The switch will discard the frame and send an error message back to host A.
C. The switch will flood the frame out of all ports except for port Fa0/3.
D. The switch will add the destination address of the frame to the MAC address table and forward the frame to host D.

Answer: A

Explanation: When switch receives the data frame from the host not having the MAC address already on the MAC table, it will add the MAC address to source port on MAC address table and sends the data frame.

NEW QUESTION 24
Refer to the exhibit.

Which option describes how SwitchA will handle the frame just received?

A. It will drop the frame.
B. It will forward the frame out of port Fa0/3 only.
C. It will flood the frame out all ports.
D. It will flood the frame out of all the ports except Fa0/3.

Answer: D

NEW QUESTION 25
A workstation has just resolved a browser URL to the IP address of a server. What protocol will the workstation now use to determine the destination MAC address to be placed into frames directed toward the server?
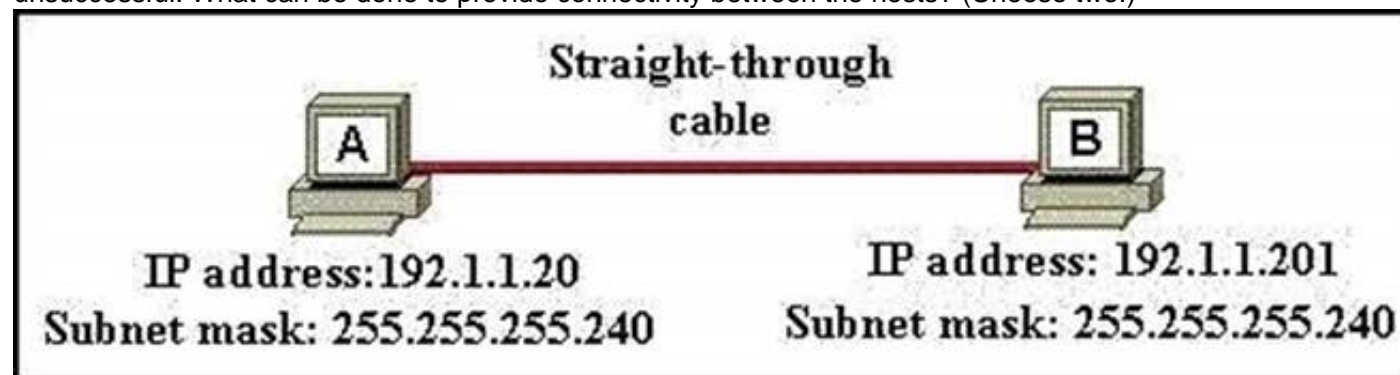
A. HTTP
B. DNS
C. DHCP
D. RARP
E. ARP

Answer: E

Explanation: The RARP protocol is used to translate hardware interface addresses to protocol addresses. The RARP message format is very similar to the ARP format. When the booting computer sends the broadcast ARP request, it places its own hardware address in both the sending and receiving fields in the encapsulated ARP data packet. The RARP server will fill in the correct sending and receiving IP addresses in its response to the message. This way the booting

computer will know its IP address when it gets the message from the RARP server

NEW QUESTION 28
A network administrator is connecting PC hosts A and B directly through their Ethernet interfaces as shown in the graphic. Ping attempts between the hosts are unsuccessful. What can be done to provide connectivity between the hosts? (Choose two.)

A. A crossover cable should be used in place of the straight-through cable.
B. A rollover cable should be used in place of the straight-through cable.
C. The subnet masks should be set to 255.255.255.192
D. A default gateway needs to be set on each host.
E. The hosts must be reconfigured to use private IP addresses for direct connections of this type.
F. The subnet masks should be set to 255.255.255.0

Answer: AF

Explanation: If you need to connect two computers but you don't have access to a network and can't set up an ad hoc network, you can use an Ethernet crossover cable to create a direct cable connection.
Generally speaking, a crossover cable is constructed by reversing (or crossing over) the order of the wires inside so that it can connect two computers directly. A crossover cable looks almost exactly like a regular Ethernet cable (a straight-through cable), so make sure you have a crossover cable before following these steps.
Both devices need to be on the same subnet, and since one PC is using 192.1.1.20 and the other is using 192.1.1.201, the subnet mask should be changed to 255.255.255.0.

NEW QUESTION 32
Which protocol uses a connection-oriented service to deliver files between end systems?

A. TFTP
B. DNS
C. FTP
D. SNMP
E. RIP

Answer: C

Explanation: TCP is an example of a connection-oriented protocol. It requires a logical connection to be
established between the two processes before data is exchanged. The connection must be maintained during the entire time that communication is taking place, then released afterwards. The process is much like a telephone call, where a virtual circuit is established-
-the caller must know the person's telephone number and the phone must be answered-- before the message can be delivered.
TCP/IP is also a connection-oriented transport with orderly release. With orderly release, any data remaining in the buffer is sent before the connection is terminated. The release is accomplished in a three-way handshake between client and server processes. The connection-oriented protocols in the OSI protocol suite, on the other hand, do not support orderly release. Applications perform any handshake necessary for ensuring orderly release.
Examples of services that use connection-oriented transport services are telnet, rlogin, and ftp.

NEW QUESTION 36
Which statements are true regarding ICMP packets? (Choose two.)

A. They acknowledge receipt of TCP segments.
B. They guarantee datagram delivery.
C. TRACERT uses ICMP packets.
D. They are encapsulated within IP datagrams.
E. They are encapsulated within UDP datagrams.

Answer: CD

Explanation: Ping may be used to find out whether the local machines are connected to the network or whether a remote site is reachable. This tool is a common network tool for determining the network connectivity, which uses ICMP protocol instead of TCP/IP and UDP/IP. This protocol is usually associated with the network management tools, which provide network information to network administrators, such as ping and traceroute (the later also uses the UDP/IP protocol).
ICMP is quite different from the TCP/IP and UDP/IP protocols. No source and destination ports are included in its packets. Therefore, usual packet-filtering rules for TCP/IP and UDP/IP are not applicable. Fortunately, a special "signature" known as the packet's Message type is included for denoting the purposes of the ICMP packet. Most commonly used message types are namely, 0, 3, 4, 5, 8, 11, and 12 which represent echo reply, destination unreachable, source quench, redirect, echo request, time exceeded, and parameter problem respectively.
In the ping service, after receiving the ICMP "echo request" packet from the source location, the destination

NEW QUESTION 39
Which two characteristics describe the access layer of the hierarchical network design model? (Choose two.)

A. layer 3 support
B. port security
C. redundant components
D. VLANs
E. PoE

Answer: BD

Explanation: Access layer
The main purpose of the access layer is to provide direct connection to devices on the network and controlling which devices are allowed to communicate over it. The access layer interfaces with end devices, such as PCs, printers, and IP phones, to provide access to the rest of the network. The access layer can include routers, switches, bridges, hubs, and wireless access points (AP).
Switch features in the Access layer:
? Port security
? VLANs
? Fast Ethernet/Gigabit Ethernet
? Power over Ethernet (PoE)
? Link aggregation
? Quality of Service (QoS)
References: http://www.ciscopath.com/content/61/ http://www.mcmcse.com/cisco/guides/hierarchical_model.shtml

NEW QUESTION 44
What are two common TCP applications? (Choose two.)

A. TFTP
B. SMTP
C. SNMP
D. FTP
E. DNS

Answer: BD
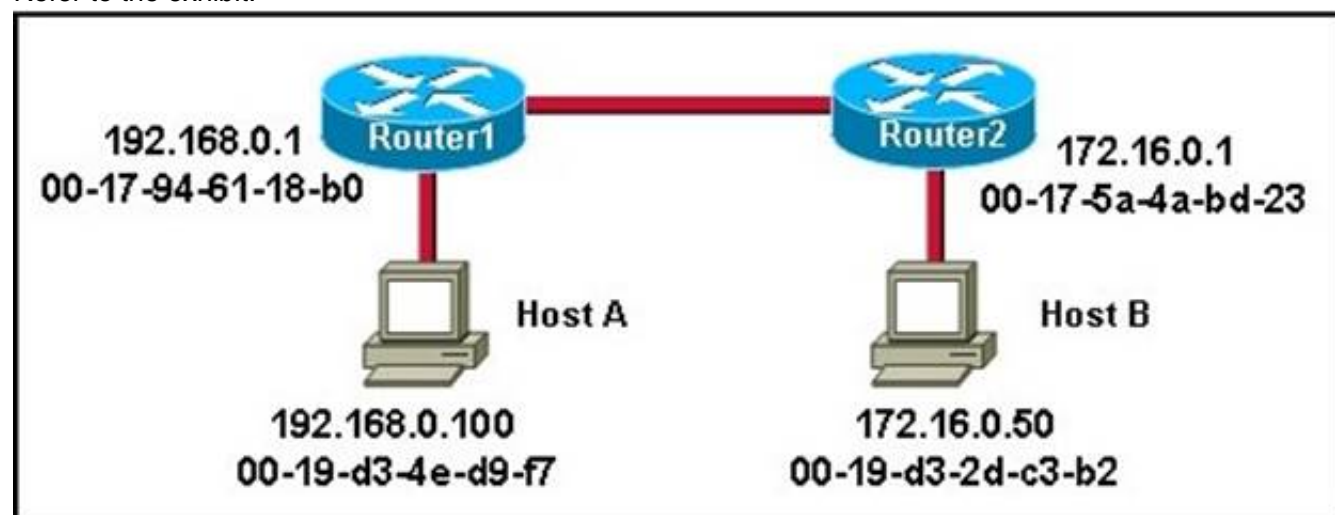
Explanation: SMTP uses TCP port 25, while FTP uses TCP ports 20 and 21.
Reference: http://pentestlab.wordpress.com/2012/03/05/common-tcpip-ports/

NEW QUESTION 47
Refer to the exhibit.

Host A is sending a packet to Host B for the first time. What destination MAC address will Host A use in the ARP request?

A. 192.168.0.1
B. 172.16.0.50
C. 00-17-94-61-18-b0
D. 00-19-d3-2d-c3-b2
E. ff-ff-ff-ff-ff-ff
F. 255.255.255.255

Answer: E

Explanation: For the initial communication, Host A will send a broadcast ARP (all F's) to determine the correct address to use to reach the destination.
ARP sends an Ethernet frame called an ARP request to every host on the shared link-layer legmen. The Ethernet header includes the source host MAC address and a destination address of all Fs representing a broadcast frame. The ARP request contains the sender's MAC and IP address and the target (destination) IP address. The target's MAC address is set to all 0s.
ARP Request
Reference: http://www.technicalhowto.com/protocols/arp/arp.html

NEW QUESTION 49
Which two statements describe the operation of the CSMA/CD access method? (Choose two.)

A. In a CSMA/CD collision domain, multiple stations can successfully transmit data simultaneously.

B. In a CSMA/CD collision domain, stations must wait until the media is not in use before transmitting.
C. The use of hubs to enlarge the size of collision domains is one way to improve the operation of the CSMA/CD access method.
D. After a collision, the station that detected the collision has first priority to resend the lost data.
E. After a collision, all stations run a random backoff algorith
F. When the backoff delay period has expired, all stations have equal priority to transmit data.
G. After a collision, all stations involved run an identical backoff algorithm and then synchronize with each other prior to transmitting data.

Answer: BE

Explanation: Ethernet networking uses Carrier Sense Multiple Access with Collision Detect (CSMA/CD), a protocol that helps devices share the bandwidth evenly without having two devices transmit at the same time on the network medium. CSMA/CD was created to overcome the problem of those collisions that occur when packets are transmitted simultaneously from different nodes. And trust me, good collision management is crucial, because when a node transmits in a CSMA/CD network, all the other nodes on the network receive and examine that transmission. Only bridges and routers can effectively prevent a transmission from propagating throughout the entire network! So, how does the CSMA/CD protocol work? Like this: when a host wants to transmit over the network, it first checks for the presence of a digital signal on the wire. If all is clear (no other host is transmitting), the host will then proceed with its transmission. But it doesn't stop there. The transmitting host constantly monitors the wire to make sure no other hosts begin transmitting. If the host detects another signal on the wire, it sends out an extended jam signal that causes all nodes on the segment to stop sending data (think, busy signal). The nodes respond to that jam signal by waiting a while before attempting to transmit again. Backoff algorithms determine when the colliding stations can retransmit. If collisions keep occurring after 15 tries, the nodes attempting to transmit will then time out.

NEW QUESTION 52
Refer to the exhibit.

```
SwitchA# show mac-address-table
< non-essential output omitted >
     Destination Address   Address Type   VLAN   Destination Port
     -------------------   ------------   ----   -------------------
     00b0.d056.fe4d        Dynamic        1      FastEthernet0/3
     00b0.d043.ac2e        Dynamic        1      FastEthernet0/4
     00b0.d0fe.ac32        Dynamic        1      FastEthernet0/5
     00b0.d0da.cb56        Dynamic        1      FastEthernet0/6

Frame received by SwitchA:
```

Source MAC	Destination MAC	Source IP	Destination IP
00b0.d056.fe4d	00b0.d0da.895a	192.168.40.5	192.168.40.6

SwitchA receives the frame with the addressing shown in the exhibit. According to the command output also shown in the exhibit, how will SwitchA handle this frame?

A. It will drop the frame.
B. It will forward the frame out port Fa0/6 only.
C. It will forward the frame out port Fa0/3 only.
D. It will flood the frame out all ports.
E. It will flood the frame out all ports except Fa0/3.

Answer: E

Explanation: When frame receives the frame, it checks the source address on MAC table if MAC address found in MAC table it tries to forward if not in MAC table adds the Address on MAC table. After checking the source address, it checks the destination address on MAC table, if MAC address found on MAC table it forwards to proper ports otherwise floods on all ports except the source port.

NEW QUESTION 54
To what type of port would a cable with a DB-60 connector attach?

A. Serial port
B. Console port
C. Ethernet port
D. Fibre optic port

Answer: A

Explanation: Serial Connection

cl_3_dte_male

cl_2_dce

The picture on the left shows a V.35 DTE cable with a male DB60 connector and a male standard 34-pin Winchester-type connector. The right picture shows a V.35 DCE serial cable with a male DB60 connector and a female 34-pin Winchester-type connector. As you probably guessed already, the male connector of the DTE cable is attached to the DCE cable's female connector, this is depicted in the picture below. This is known as a back-to-back connection, and 'simulates' a WAN link. In a real world setup, the DTE cable's male connector typically connects to a port on a CSU/DSU provided by a service provider (i.e. telco), which in turn connects to a CSU/DSU at another location, thru a T1 link for example. The DB60 connector connects to a Serial interface on a router.

cl_4_malefemale
Reference: http://www.techexams.net/techlabs/ccna/lab_hardware.shtml

NEW QUESTION 57
How does TCP differ from UDP? (Choose two.)

A. TCP provides best effort delivery.
B. TCP provides synchronized communication.
C. TCP segments are essentially datagrams.
D. TCP provides sequence numbering of packets.
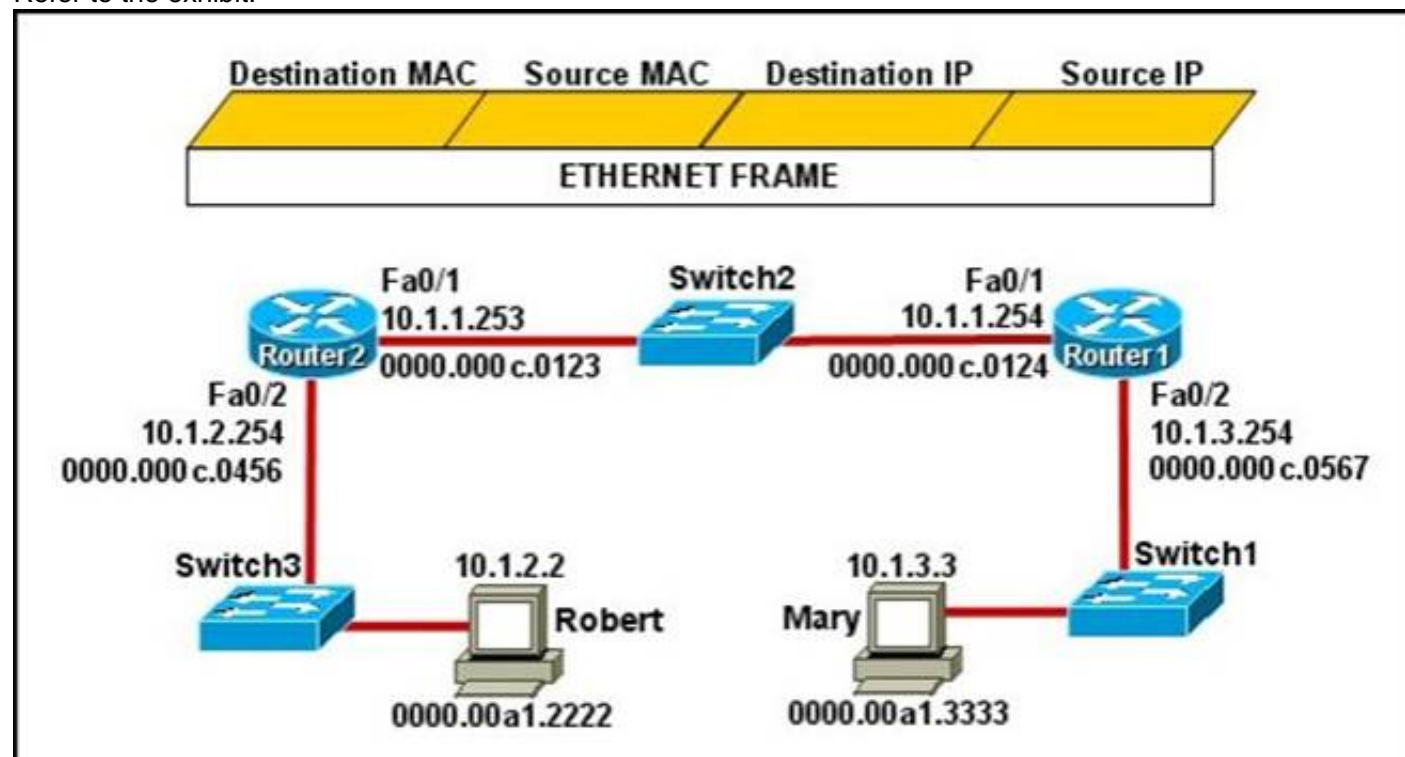E. TCP uses broadcast delivery.

Answer: BD

Explanation: Because TCP is a connection-oriented protocol responsible for ensuring the transfer of a datagram from the source to destination machine (end-to-end communications), TCP must receive communications messages from the destination machine to acknowledge receipt of the datagram. The term virtual circuit is usually used to refer to the handshaking that goes on between the two end machines, most of which are simple acknowledgment messages (either confirmation of receipt or a failure code) and datagram sequence numbers.
Rather than impose a state within the network to support the connection, TCP uses synchronized state between the two endpoints. This synchronized state is set up as part of an initial connection process, so TCP can be regarded as a connection-oriented protocol. Much of the protocol design is intended to ensure that each local state transition is communicated to, and acknowledged by, the remote party.
Reference: http://en.wikibooks.org/wiki/Communication_Networks/TCP_and_UDP_Protocols

NEW QUESTION 59
Refer to the exhibit.

Mary is sending an instant message to Robert. The message will be broken into a series of packets that will traverse all network devices. What addresses will populate these packets as they are forwarded from Router1 to Router2?

A.

| Destination MAC | Source MAC | Destination IP | Source IP |
| 0000.00a1.2222 | 0000.00a1.3333 | 10.1.2.2 | 10.1.3.3 |

B.

| Destination MAC | Source MAC | Destination IP | Source IP |
| 0000.000c.0123 | 0000.000c.0124 | 10.1.2.2 | 10.1.3.3 |

C.

| Destination MAC | Source MAC | Destination IP | Source IP |
| 0000.000c.0123 | 0000.000c.0124 | 10.1.1.253 | 10.1.1.254 |

D.

| Destination MAC | Source MAC | Destination IP | Source IP |
| 0000.00a1.2222 | 0000.00a1.3333 | 10.1.1.253 | 10.1.1.254 |

E.

| Destination MAC | Source MAC | Destination IP | Source IP |
| 0000.000c.0456 | 0000.000c.0567 | 10.1.2.2 | 10.1.3.3 |

A. Option A
B. Option B
C. Option C
D. Option D
E. Option E

Answer: B

Explanation: The Source and Destination IP address is not going to change. Host 1 IP address will stay as being the source IP and the Host 2 IP address will stay the destination IP address. Those two are not going to change.
For the MAC address it is going to change each time it goes from one hope to another. (Except switches... they don't change anything)
Frame leaving HOST 1 is going to have a source MAC of Host 1 and a destination MAC of Router 1.
Router 1 is going to strip that info off and then will make the source MAC address of Router1's exiting interface, and making Router2's interface as the destination MAC address.
Then the same will happen... Router2 is going to change the source/destination info to the source MAC being the Router2 interface that it is going out, and the destination will be Host2's MAC address.

Topic 2, LAN Switching Technologies

NEW QUESTION 64
A switch receives a frame on one of its ports. There is no entry in the MAC address table
for the destination MAC address. What will the switch do with the frame?

A. drop the frame
B. forward it out of all ports except the one that received it
C. forward it out of all ports
D. store it until it learns the correct port

Answer: B

Explanation: Understanding this concept is prime for understanding that when switch receives the data frame from the host not having the MAC address already in the MAC table, it will add the MAC address to the source port on the MAC address table and sends the data frame. If the switch already has the MAC address in its table for the destination, it will forward the frame directly to the destination port. If it was not already in its MAC table, then they frame would have been flooded out all ports except for the port that it came from.

NEW QUESTION 66
Refer to the exhibit.

Instructions

This item contains several questions that you must answer. You can view these questions by clicking on the corresponding button to the left. Changing questions can be accomplished by clicking the numbers to the left of each question. In order to complete the questions, you will need to refer to the Exhibit.

To gain access to the Exhibit, click on the Exhibit button at the bottom of the screen. When you have finished viewing the Exhibit, you can return to your questions by clicking on the Questions button to the left.

Each of the windows can be minimized by clicking on the [-]. You can also reposition a window by dragging it by the title bar.

Scenario

Refer to the Exhibit. As the first step in verifying a local host configuration, a network technician issues the **ipconfig /all** command on a computer. Use the results of the command to answer the five questions shown on the Questions tab.

Exhibit

```
C:\WINNT\system32\cmd.exe

        Connection-specific DNS Suffix  . : cisco.com
        Description . . . . . . . . . . . : Intel(R) PRO/1000 MT Mobile

        Physical Address. . . . . . . . . : 00-0D-60-FD-F0-34
        DHCP Enabled. . . . . . . . . . . : Yes
        Autoconfiguration Enabled . . . . : Yes
        IP Address. . . . . . . . . . . . : 172.16.236.227
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 172.16.236.1
        DHCP Server . . . . . . . . . . . : 172.15.3.2
        DNS Servers . . . . . . . . . . . : 10.4.8.1
                                            10.5.2.22
        Primary WINS Server . . . . . . . : 10.69.2.87
        Secondary WINS Server . . . . . . : 10.69.235.228
        Lease Obtained. . . . . . . . . . : Monday, June 11, 2007 9:26:45 AM
        Lease Express . . . . . . . . . . : Thursday, June 14, 2007 9:26:45 AM

Ethernet adapter Local Area Connection:

        Media State . . . . . . . . . . . : Cable Disconnected
        Description . . . . . . . . . . . : Cisco Systems Wireless LAN Adapter

        Physical Address. . . . . . . . . : 00-0E-9B-48-86-2A
```

What two things can the technician determine by successfully pinging from this computer to the IP address 172.16.236.1? (Choose two)

A. The network card on the computer is functioning correctly.
B. The default static route on the gateway router is correctly configured.
C. The correct default gateway IP address is configured on the computer.
D. The device with the IP address 172.16.236.1 is reachable over the network.
E. The default gateway at 172.16.236.1 is able to forward packets to the internet.

Answer: AD

Explanation: The source and destination addresses are on the same network therefore, a default gateway is not necessary for communication between these two addresses.

NEW QUESTION 71
Which address type does a switch use to make selective forwarding decisions?

A. Source IP address
B. Destination IP address
C. Source and destination IP address

D. Source MAC address
E. Destination MAC address

Answer: E

Explanation: Switches analyze the destination MAC to make its forwarding decision since it is a layer 2 device. Routers use the destination IP address to make forwarding decisions.

NEW QUESTION 72
Which two options will help to solve the problem of a network that is suffering a broadcast storm? (Choose two.)

A. a bridge
B. a router
C. a hub
D. a Layer 3 switch
E. an access point

Answer: BD

Explanation: Routers and layer 3 switches will not propagate broadcast traffic beyond the local segment, so the use of these devices is the best method for eliminating broadcast storms.

NEW QUESTION 73
What is the purpose of flow control?

A. To ensure data is retransmitted if an acknowledgement is not received.
B. To reassemble segments in the correct order at the destination device.
C. To provide a means for the receiver to govern the amount of data sent by the sender.
D. To regulate the size of each segment.

Answer: C

Explanation: Flow control is the management of data flow between computers or devices or between nodes in a network so that the data can be handled at an efficient pace. Too much data arriving before a device can handle it causes data overflow, meaning the data is either lost or must be retransmitted. For serial data transmission locally or in a network, the Xon/Xoff protocol can be used. For modem connections, either Xon/Xoff or CTS/RTS (Clear to Send/Ready to Send) commands can be used to control data flow.
In a network, flow control can also be applied by refusing additional device connections until the flow of traffic has subsided.
Reference: http://whatis.techtarget.com/definition/flow-control

NEW QUESTION 78
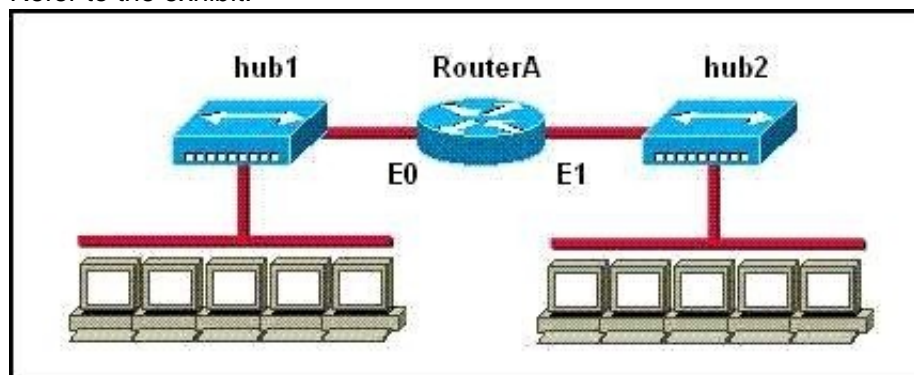What does a host on an Ethernet network do when it is creating a frame and it does not have the destination address?

A. Drops the frame
B. Sends out a Layer 3 broadcast message
C. Sends a message to the router requesting the address
D. Sends out an ARP request with the destination IP address

Answer: D

Explanation: In this case, it will send out an ARP request for MAC address of the destination IP (assuming it doesn't already have it in its table) and then address it to the destination's MAC address.

NEW QUESTION 83
Refer to the exhibit.

How many collision domains are shown?

A. one
B. two
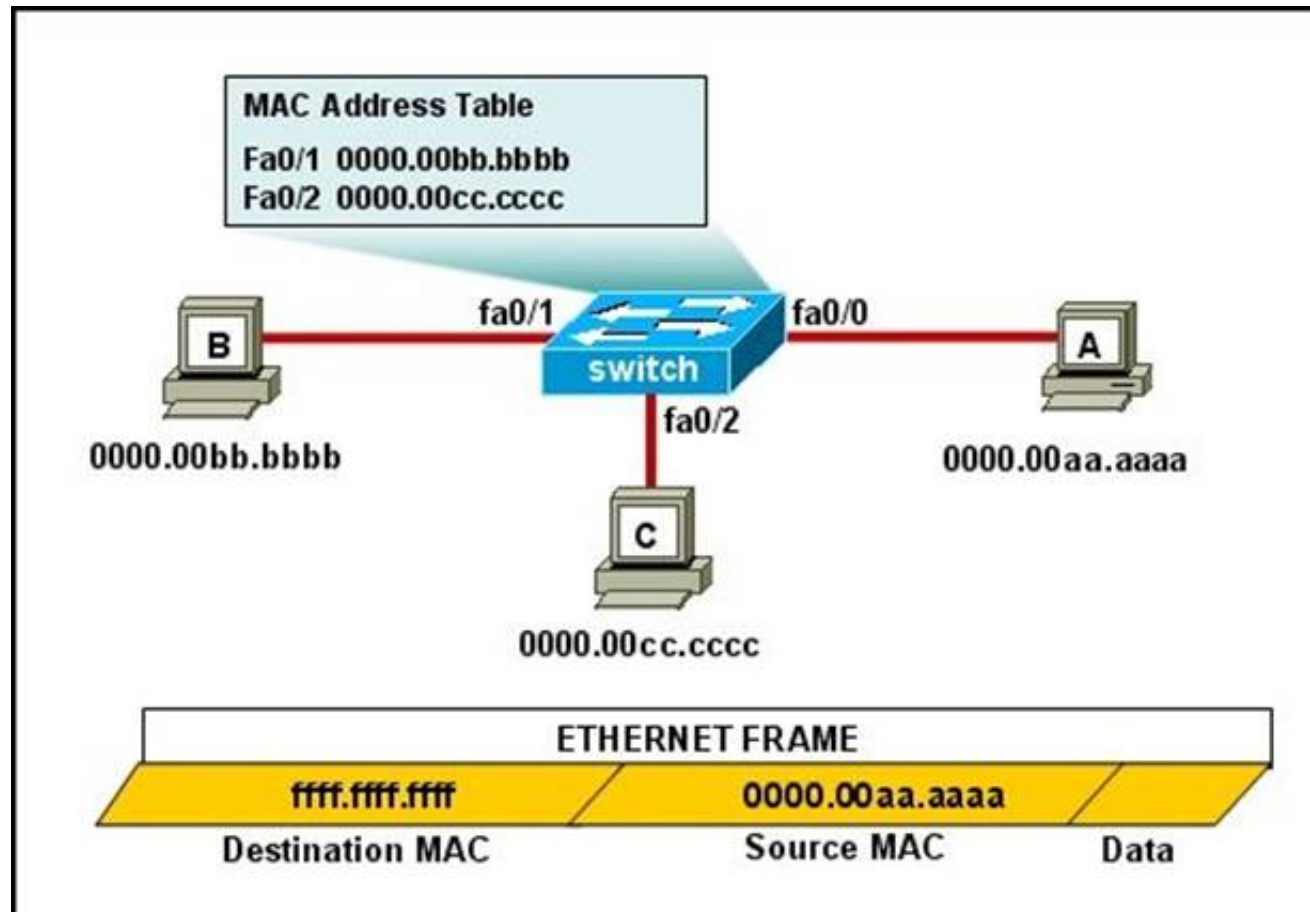C. three
D. four
E. six
F. twelve

Answer: B

Explanation: Hubs create single collision and broadcast domains, so in this case there will be a single collision domain for each of the two hubs.

NEW QUESTION 87
Refer to the exhibit.

The MAC address table is shown in its entirety. The Ethernet frame that is shown arrives at the switch.
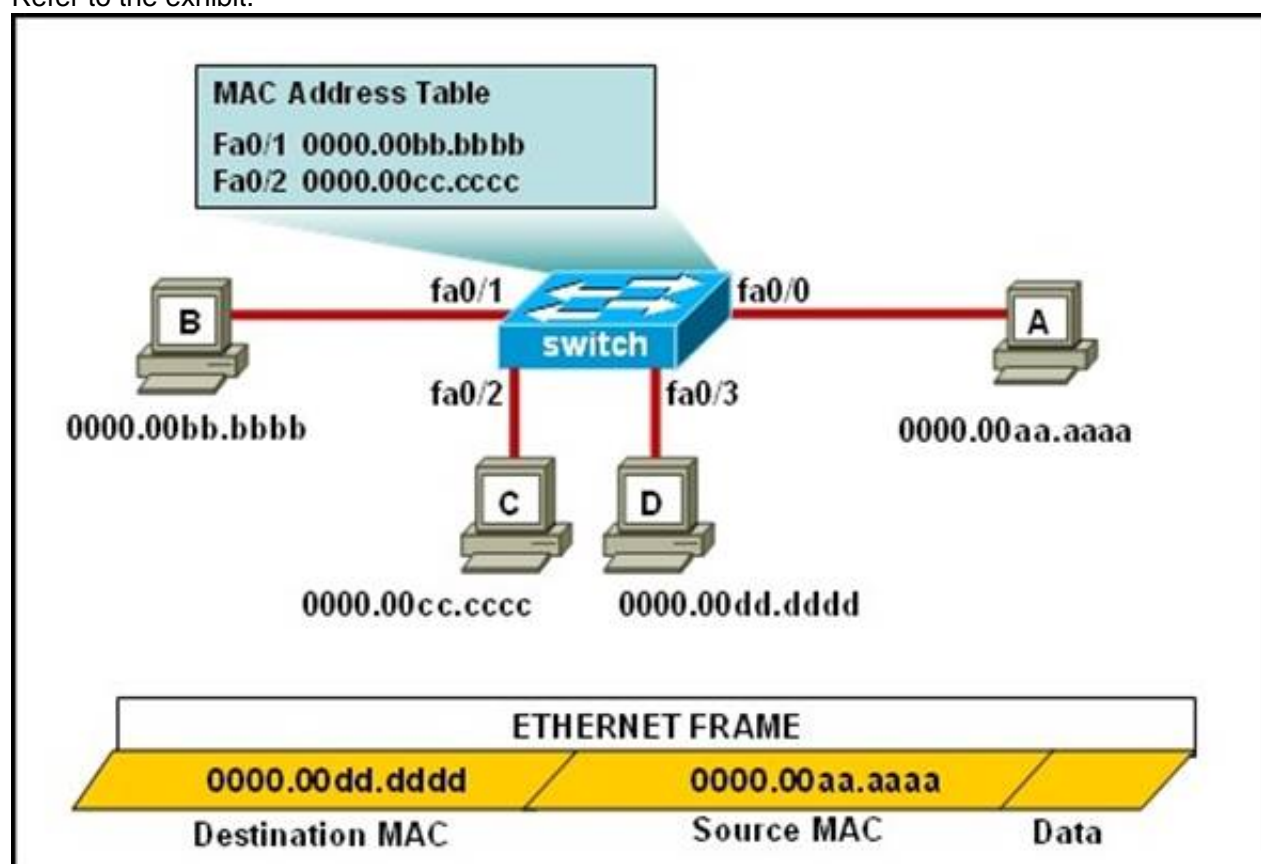What two operations will the switch perform when it receives this frame? (Choose two.)

A. The switch will not forward a frame with this destination MAC address.
B. The MAC address of 0000.00aa.aaaa will be added to the MAC Address Table.
C. The MAC address of ffff.ffff.ffff will be added to the MAC address table.
D. The frame will be forwarded out of all the active switch ports except for port fa0/0.
E. The frame will be forwarded out of fa0/0 and fa0/1 only.
F. The frame will be forwarded out of all the ports on the switch.

Answer: BD

Explanation: If the switch already has the MAC address in its table for the destination, it will forward the frame directly to the destination port. If it was not already in its MAC table, then they frame would have been flooded out all ports except for the port that it came from.

NEW QUESTION 88
Refer to the exhibit.

The ports that are shown are the only active ports on the switch. The MAC address table is shown in its entirety. The Ethernet frame that is shown arrives at the switch.
What two operations will the switch perform when it receives this frame? (Choose two.)

A. The MAC address of 0000.00aa.aaaa will be added to the MAC address table.
B. The MAC address of 0000.00dd.dddd will be added to the MAC address table.

C. The frame will be forwarded out of port fa0/3 only.
D. The frame will be forwarded out of fa0/1, fa0/2, and fa0/3.
E. The frame will be forwarded out of all the active ports.

Answer: AD

Explanation: If the switch already has the MAC address in its table for the destination, it will forward the frame directly to the destination port. If it was not already in its MAC table, then they frame would have been flooded out all ports except for the port that it came from. It will also add the MAC address of the source device to its MAC address table

NEW QUESTION 89
Which option is a valid IPv6 address?

A. 2001:0000:130F::099a::12a
B. 2002:7654:A1AD:61:81AF:CCC1
C. FEC0:ABCD:WXYZ:0067::2A4
D. 2004:1:25A4:886F::1

Answer: D

Explanation: IPv6 Address Notation
IPv6 addresses are denoted by eight groups of hexadecimal quartets separated by colons in between them.
Following is an example of a valid IPv6 address: 2001:cdba:0000:0000:0000:0000:3257:9652
Any four-digit group of zeroes within an IPv6 address may be reduced to a single zero or altogether omitted.
Therefore, the following IPv6 addresses are similar and equally valid: 2001:cdba:0000:0000:0000:0000:3257:9652
2001:cdba:0:0:0:0:3257:9652
2001:cdba::3257:9652
Reference: http://www.ipv6.com/articles/general/IPv6-Addressing.htm

NEW QUESTION 90
To allow or prevent load balancing to network 172.16.3.0/24, which of the following commands could be used in R2? (Choose two.)

A. R2(config-if)#clock rate
B. R2(config-if)#bandwidth

C. R2(config-if)#ip ospf cost
D. R2(config-if)#ip ospf priority
E. R2(config-router)#distance ospf

Answer: BC

Explanation: http://www.cisco.com/en/US/tech/tk365/technologies_white_paper09186a0080094e9e.sht ml#t6
The cost (also called metric) of an interface in OSPF is an indication of the overhead required to send packets across a certain interface. The cost of an interface is inversely proportional to the bandwidth of that interface. A higher bandwidth indicates a lower cost. There is more overhead (higher cost) and time delays involved in crossing a 56k serial line than crossing a 10M Ethernet line. The formula used to calculate the cost is:
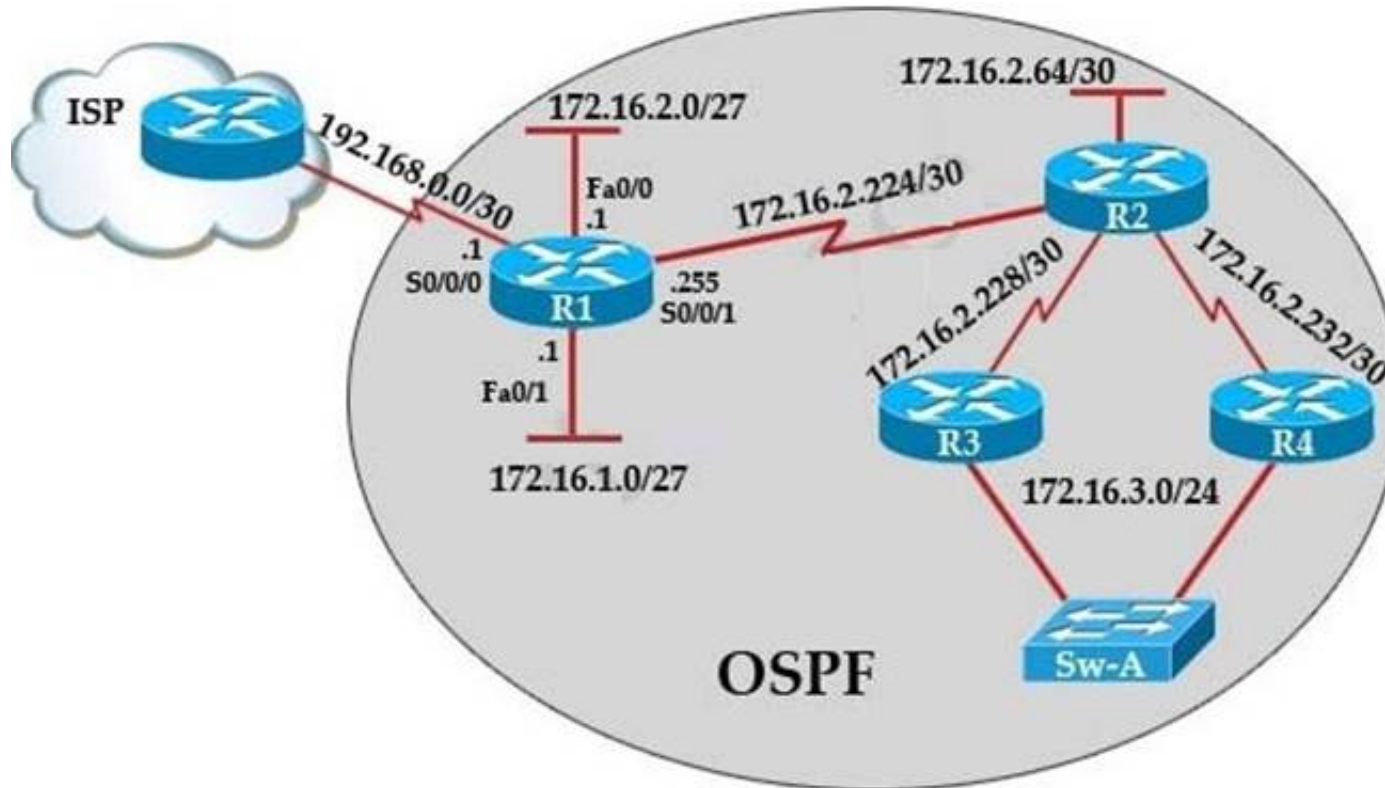Cost = 10000 0000/bandwidth in bps
For example, it will cost 10 EXP8/10 EXP7 = 10 to cross a 10M Ethernet line and will cost 10 EXP8/1544000 =64 to cross a T1 line.
By default, the cost of an interface is calculated based on the bandwidth; you can force the cost of an interface with the ip ospf cost <value> interface subconfiguration mode command.

NEW QUESTION 94
R1 is configured with the default configuration of OSPF. From the following list of IP addresses configured on R1, which address will the OSPF process select as the router ID?

A. 192.168.0.1
B. 172.16.1.1
C. 172.16.2.1
D. 172.16.2.225

Answer: A

Explanation: The Router ID (RID) is an IP address used to identify the router and is chosen using the following sequencE.
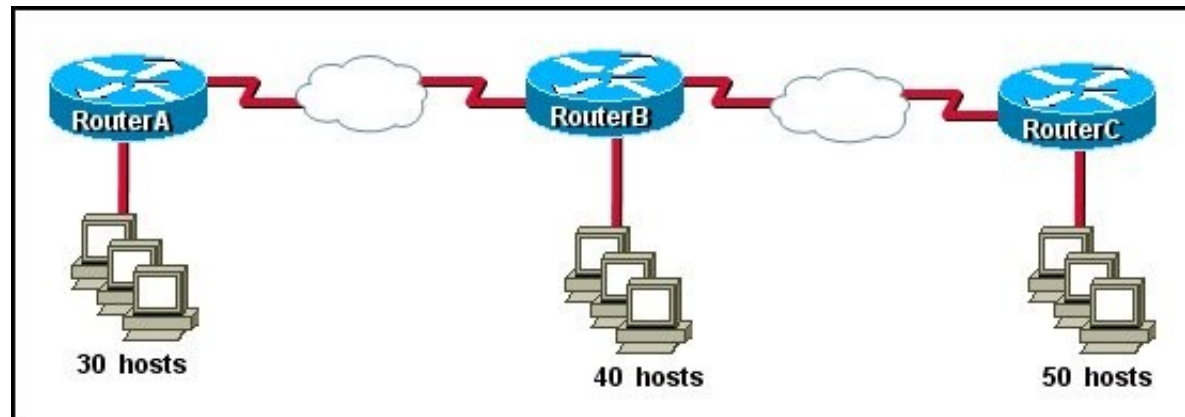+ The highest IP address assigned to a loopback (logical) interface. + If a loopback interface is not defined, the highest IP address of all active router's physical interfaces will be chosen.
+ The router ID can be manually assigned
In this case, because a loopback interface is not configured so the highest active IP address 192.168.0.1 is chosen as the router ID.

NEW QUESTION 95
Refer to the exhibit.

The internetwork is using subnets of the address 192.168.1.0 with a subnet mask of 255.255.255.224. The routing protocol in use is RIP version 1. Which address could be assigned to the FastEthernet interface on RouterA?

A. 192.168.1.31
B. 192.168.1.64
C. 192.168.1.127
D. 192.168.1.190
E. 192.168.1.192

Answer: D

Explanation: Subnet mask 255.255.255.224 with CIDR of /27 which results in 32 hosts per. 192.168.1.31 is the broadcast address for sunbet '0' 192.168.1.64 is the network address for subnet '2' 192.168.1.127 is the broadcast address for subnet '3' 192.168.1.192 is the network address for subnet '6'

Subnet	Network Address	Starting Host	End Host	Broadcast	Netmask
0	192.168.1.0	192.168.1.1	192.168.1.30	192.168.1.31	255.255.255.224
1	192.168.1.32	192.168.1.33	192.168.1.62	192.168.1.63	255.255.255.224
2	192.168.1.64	192.168.1.65	192.168.1.94	192.168.1.95	255.255.255.224
3	192.168.1.96	192.168.1.97	192.168.1.126	192.168.1.127	255.255.255.224
4	192.168.1.128	192.168.1.129	192.168.1.158	192.168.1.159	255.255.255.224
5	192.168.1.160	192.168.1.161	192.168.1.190	192.168.1.191	255.255.255.224
6	192.168.1.192	192.168.1.193	192.168.1.222	192.168.1.223	255.255.255.224
7	192.168.1.224	192.168.1.225	192.168.1.254	192.168.1.255	255.255.255.224

NEW QUESTION 96
What is the purpose of assigning an IP address to a switch?

A. provides local hosts with a default gateway address
B. allows remote management of the switch
C. allows the switch to respond to ARP requests between two hosts
D. ensures that hosts on the same LAN can communicate with each other

Answer: B

Explanation: A switch is a layer 2 device and doesn't use network layer for packet forwarding. The IP address may be used only for administrative purposes such as Telnet access or for network management purposes.

NEW QUESTION 100
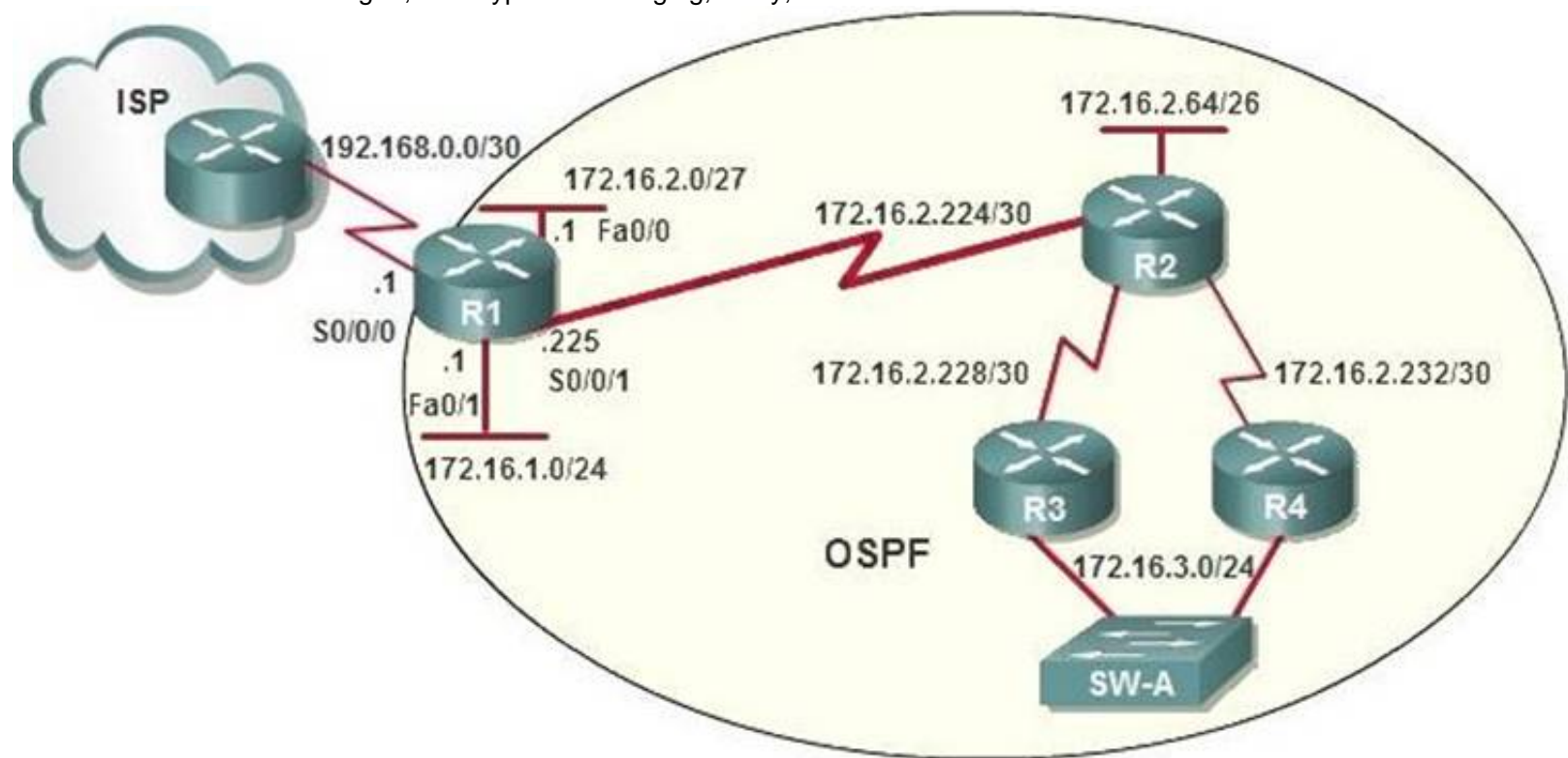Which command can you use to manually assign a static IPV6 address to a router interface?

A. ipv6 address PREFIX_1::1/64
B. ipv6 autoconfig 2001:db8:2222:7272::72/64
C. ipv6 autoconfig
D. ipv6 address 2001:db8:2222:7272::72/64

Answer: D

Explanation: An example of configuring IPv6 on an interface is shown below: Router(config)# interface fastethernet 0/1 Router(config-if)# ipv6 address 3000::2222:1/64

NEW QUESTION 105
After the network has converged, what type of messaging, if any, occurs between R3 and R4?

A. No messages are exchanged

B. Hellos are sent every 10 seconds.
C. The full database from each router is sent every 30 seconds.
D. The routing table from each router is sent every 60 seconds.

Answer: B

Explanation: HELLO messages are used to maintain adjacent neighbors so even when the network is converged, hellos are still exchanged. On broadcast and point-to-point links, the default is 10 seconds, on NBMA the default is 30 seconds.
Although OSPF is a link-state protocol the full database from each router is sent every 30 minutes (not seconds) therefore, C and D are not correct.

NEW QUESTION 107
If an Ethernet port on a router was assigned an IP address of 172.16.112.1/20, what is the maximum number of hosts allowed on this subnet?

A. 1024
B. 2046
C. 4094
D. 4096
E. 8190

Answer: C

Explanation: Each octet represents eight bits. The bits, in turn, represent (from left to right): 128, 64, 32 , 16 , 8, 4, 2, 1
Add them up and you get 255. Add one for the all zeros option, and the total is 256. Now, take away one of these for the network address (all zeros) and another for the broadcast address (all ones). Each octet represents 254 possible hosts. Or 254 possible
networks. Unless you have subnet zero set on your network gear, in which case you could conceivably have 255.
The CIDR addressing format (/20) tells us that 20 bits are used for the network portion, so the maximum number of networks are 2^20 minus one if you have subnet zero enabled, or minus 2 if not.
You asked about the number of hosts. That will be 32 minus the number of network bits, minus two. So calculate it as (2^(32-20))-2, or (2^12)-2 = 4094

NEW QUESTION 108
Which two of these functions do routers perform on packets? (Choose two.)

A. Examine the Layer 2 headers of inbound packets and use that information to determine the next hops for the packets
B. Update the Layer 2 headers of outbound packets with the MAC addresses of the next hops
C. Examine the Layer 3 headers of inbound packets and use that information to determine the next hops for the packets
D. Examine the Layer 3 headers of inbound packets and use that information to determine the complete paths along which the packets will be routed to their ultimate destinations
E. Update the Layer 3 headers of outbound packets so that the packets are properly directed to valid next hops
F. Update the Layer 3 headers of outbound packets so that the packets are properly directed to their ultimate destinations

Answer: BC

Explanation: This is the basic function of the router to receive incoming packets and then forward them to their required destination. This is done by reading layer 3 headers of inbound packets and update the info to layer 2 for further hopping.

NEW QUESTION 113
Refer to the exhibit.

The two routers have had their startup configurations cleared and have been restarted. At a minimum, what must the administrator do to enable CDP to exchange information between R1 and R2?

A. Configure the router with the cdp enable command.
B. Enter no shutdown commands on the R1 and R2 fa0/1 interfaces.
C. Configure IP addressing and no shutdown commands on both the R1 and R2 fa0/1 interfaces.
D. Configure IP addressing and no shutdown commands on either of the R1 or R2 fa0/1 interfaces.

Answer: B

Explanation: If the no shut down commands are not entered, then CDP can exchange information between the two routers. By default, all Cisco device interfaces and ports are shut down and need to be manually enabled.

NEW QUESTION 115
Which address are OSPF hello packets addressed to on point-to-point networks?

A. 224.0.0.5
B. 172.16.0.1
C. 192.168.0.5
D. 223.0.0.1
E. 254.255.255.255

Answer: A

Explanation: Why does the show ip ospf neighbor Command Reveal Neighbors in the Init State?
http://www.cisco.com/en/US/tech/tk365/technologies_tech_note09186a0080093f11.shtml OSPF hello packets have a destination address of 224.0.0.5 (the all ospf routers multicast address).

NEW QUESTION 116
Which two commands will display the current IP address and basic Layer 1 and 2 status of an interface? (Choose two.)

A. router#show version
B. router#show ip interface
C. router#show protocols
D. router#show controllers
E. router#show running-config

Answer: BC

Explanation: The outputs of "show protocols" and "show ip interface" are shown below:
Global values:Internet Protocol routing is enabledSerial0/0 is up, line protocol is downInternet address is 10.1.1.1/30Serial0/1 is up, line protocol is downInternet address is 209.65.200.225/30Serial0/2 is up, line protocol is downSerial0/3 is up, line protocol is downNVI0 is up, line protocol is upInterface is unnumbered. Using address of NVI0 (0.0.0.0)Loopback0 is up, line protocol is upInternet address is 10.1.10.1/32Loopback1 is up, line protocol is upInternet address is 10.1.2.1/27Loopback6 is up, line protocol is up
Serial0/0 is up, line protocol is downInternet address is 10.1.1.1/30Broadcast address is 255.255.255.255Address determined by non-volatile memoryMTU is 1500 bytesHelper address is not setDirected broadcast forwarding is disabledMulticast reserved groups joined: 224.0.0.5Outgoing access list is not setInbound access list is not setProxy ARP is enabledLocal Proxy ARP is disabledSecurity level is defaultSplit horizon is disabledICMP redirects are always sentICMP unreachables are always sentICMP mask replies are never sentIP fast switching is enabledIP fast switching on the same interface is enabledIP Flow switching is disabledIP CEF switching is disabledIP Feature Fast switching turbo vectorIP multicast fast switching is enabledIP multicast distributed fast switching is disabledIP route- cache flags are FastRouter Discovery is disabledIP output packet accounting is disabledIP access violation accounting is disabledTCP/IP header compression is disabledRTP/IP header compression is disabledPolicy routing is disabledNetwork address translation is enabled, interface in domain insideBGP Policy Mapping is disabledWCCP Redirect outbound is disabledWCCP Redirect inbound is disabledWCCP Redirect exclude is disabled

NEW QUESTION 119
Given an IP address of 192.168.1.42 255.255.255.248, what is the subnet address?

A. 192.168.1.8/29
B. 192.168.1.32/27
C. 192.168.1.40/29
D. 192.168.1.16/28
E. 192.168.1.48/29

Answer: C

Explanation: 248 mask uses 5 bits (1111 1000)
42 IP in binary is (0010 1010)
The base subnet therefore is the lowest binary value that can be written without changing the output of an AND operation of the subnet mask and IP...
1111 1000 AND
0010 1010 equals
0010 1000 - which is .40
/24 is standard class C mask.
Adding the 5 bits from the .248 mask gives /29

NEW QUESTION 120
A network administrator is trying to add a new router into an established OSPF network. The networks attached to the new router do not appear in the routing tables of the other OSPF routers. Given the information in the partial configuration shown below, what configuration error is causing this problem?
Router(config)# router ospf 1
Router(config-router)# network 10.0.0.0 255.0.0.0 area 0

A. The process id is configured improperly.
B. The OSPF area is configured improperly.
C. The network wildcard mask is configured improperly.
D. The network number is configured improperly.
E. The AS is configured improperly.
F. The network subnet mask is configured improperly.

Answer: C

Explanation: When configuring OSPF, the mask used for the network statement is a wildcard mask similar to an access list. In this specific example, the correct syntax would have been "network 10.0.0.0 0.0.0.255 area 0."

NEW QUESTION 121
Which two statements describe the IP address 10.16.3.65/23? (Choose two.)

A. The subnet address is 10.16.3.0 255.255.254.0.
B. The lowest host address in the subnet is 10.16.2.1 255.255.254.0.
C. The last valid host address in the subnet is 10.16.2.254 255.255.254.0
D. The broadcast address of the subnet is 10.16.3.255 255.255.254.0.
E. The network is not subnetted.

Answer: BD

Explanation: The mask 255.255.254.0 (/23) used with a Class A address means that there are 15 subnet bits and 9 host bits. The block size in the third octet is 2 (256 - 254). So this makes the subnets in 0, 2, 4, 6, etc., all the way to 254. The host 10.16.3.65 is in the 2.0 subnet. The next subnet is 4.0, so the broadcast address for the 2.0 subnet is 3.255. The valid host addresses are 2.1 through 3.254

NEW QUESTION 123
How many bits are contained in each field of an IPv6 address?

A. 24
B. 4
C. 8
D. 16

Answer: D

Explanation: One of the key advantages IPv6 brings is the exponentially larger address space. The following will outline the basic address architecture of IPv6.
128-bit-long addresses Represented in hexadecimal format:
Uses CIDR principles: prefix/prefix length x:x:x:x:x:x:x:x, where x is a 16-bit hex field The last 64 bits are used for the interface ID
http://www.cisco.com/en/US/technologies/tk648/tk872/technologies_white_paper0900aecd 8026003d.pdf

NEW QUESTION 126
Which two statements describe characteristics of IPv6 unicast addressing? (Choose two.)

A. Global addresses start with 2000::/3.
B. Link-local addresses start with FE00:/12.
C. Link-local addresses start with FF00::/10.
D. There is only one loopback address and it is ::1.
E. If a global address is assigned to an interface, then that is the only allowable address for the interface.

Answer: AD

NEW QUESTION 129
A network administrator is troubleshooting the OSPF configuration of routers R1 and R2. The routers cannot establish an adjacency relationship on their common Ethernet link.

```
R1:    Ethernet0 is up, line protocol is up
       Internet address 192.168.1.2/24, Area 0
       Process ID 1, Router ID 192.168.31.33, Network Type BROADCAST, Cost: 10
       Transmit Delay is 1 sec, State DR, Priority 1
       Designated Router (ID) 192.168.31.33, Interface address 192.168.1.2
       No backup designated router on this network
       Timer intervals configured, Hello 5, Dead 20, Wait 20, Retransmit 5

R2:    Ethernet0 is up, line protocol is up
       Internet address 192.168.1.1/24, Area 0
       Process ID 2, Router ID 192.168.31.11, Network Type BROADCAST, Cost: 10
       Transmit Delay is 1 sec, State DR, Priority 1
       Designated Router (ID) 192.168.31.11, Interface address 192.168.1.1
       No backup designated router on this network
       Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
```

The graphic shows the output of the show ip ospf interface e0 command for routers R1 and R2. Based on the information in the graphic, what is the cause of this problem?

A. The OSPF area is not configured properly.
B. The priority on R1 should be set higher.
C. The cost on R1 should be set higher.
D. The hello and dead timers are not configured properly.
E. A backup designated router needs to be added to the network.
F. The OSPF process ID numbers must match.

Answer: D

Explanation: In OSPF, the hello and dead intervals must match and here we can see the hello interval is set to 5 on R1 and 10 on R2. The dead interval is also set to 20 on R1 but it is 40 on R2.
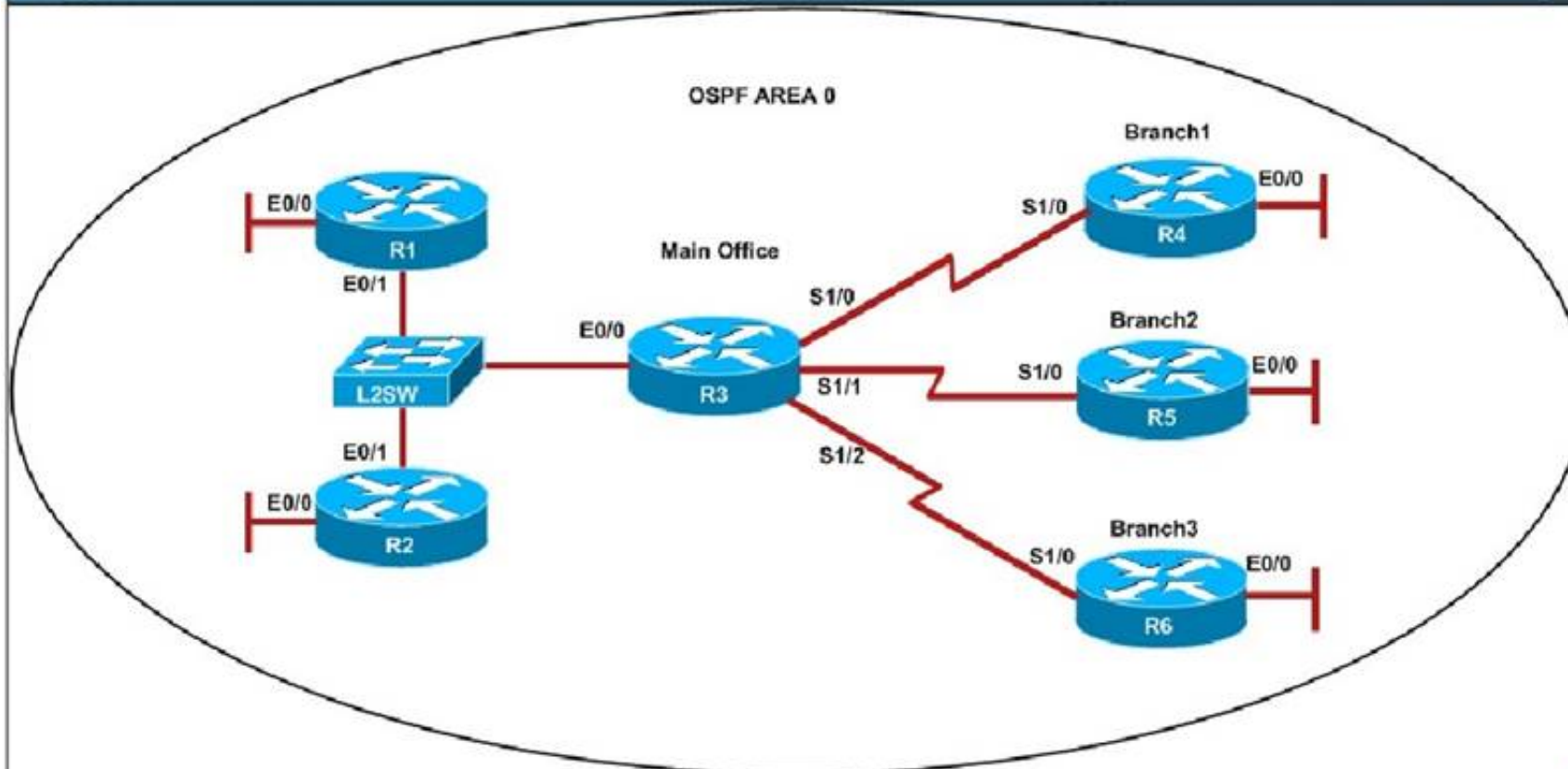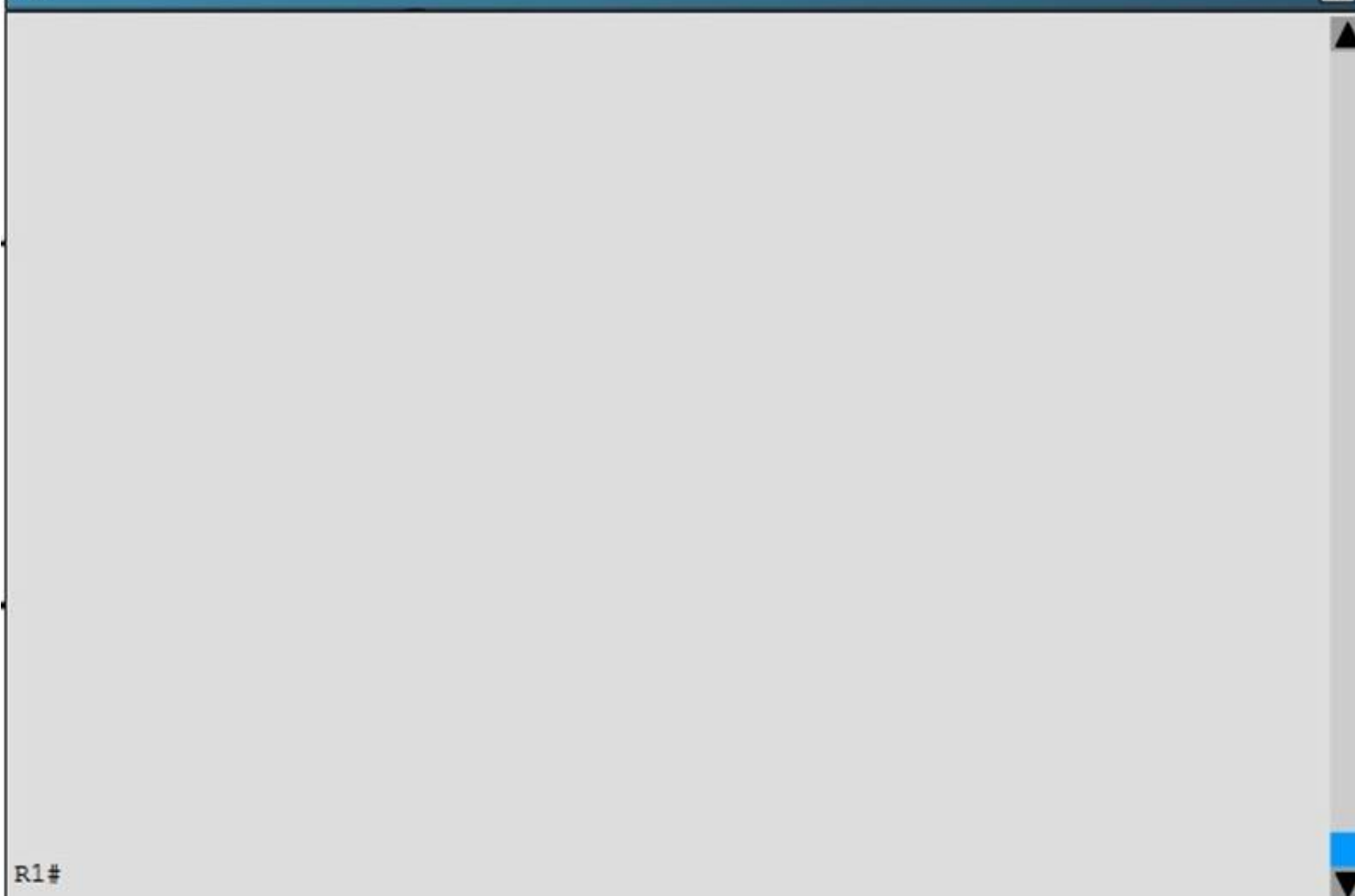
NEW QUESTION 131
Scenario
Refer to the topology. Your company has decided to connect the main office with three other remote branch offices using point-to-point serial links.
You are required to troubleshoot and resolve OSPF neighbor adjacency issues between the main office and the routers located in the remote branch offices.

Topology

OSPF AREA 0

Branch1

R4

E0/0

S1/0

Branch2

R5

E0/0

S1/0

Branch3

R6

E0/0

S1/0

R1

E0/0

E0/1

Main Office

L2SW

R3

E0/0

S1/0

S1/1

S1/2

E0/1

R2

E0/0

R1

```
R1#
```

R2

R2#

R3

R3#

R4

```
R4#
```

R5

```
R5#
```

R6

R6#

L2SW

L2SW#
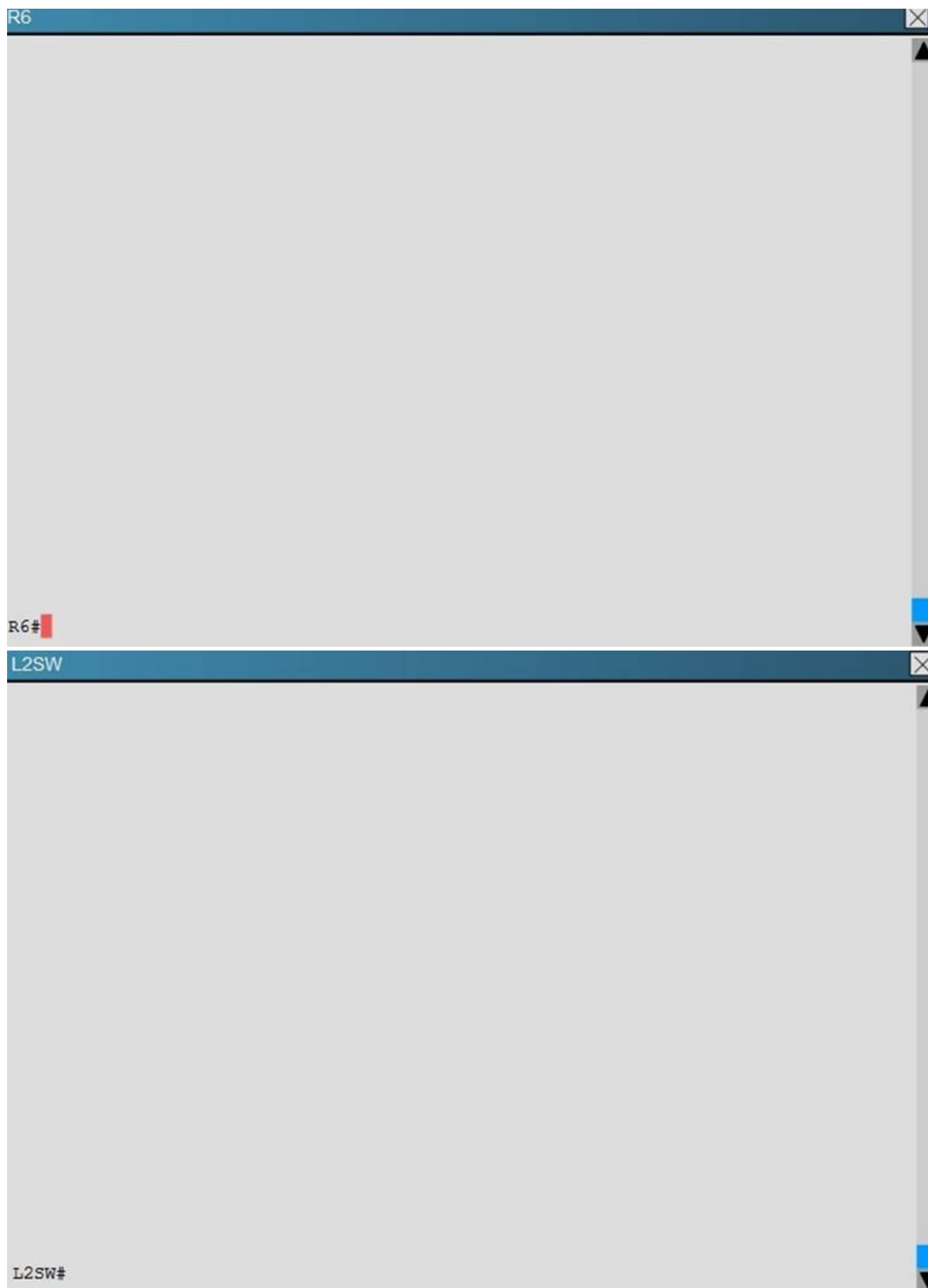
R1 does not form an OSPF neighbor adjacency with R2. Which option would fix the issue?

A. R1 ethernetO/1 is shutdown
B. Configure no shutdown command.
C. R1 ethernetO/1 configured with a non-default OSPF hello interval of 25: configure no ip ospf hello-interval 25
D. R2 ethernetO/1 and R3 ethernetO/O are configured with a non-default OSPF hello interval of 25; configure no ip ospf hello-interval 25
E. Enable OSPF for R1 ethernetO/1; configure ip ospf 1 area 0 command under ethernetO/1

Answer: B

Explanation: Looking at the configuration of R1, we see that R1 is configured with a hello interval of 25 on interface Ethernet 0/1 while R2 is left with the default of 10 (not configured).

```
R1
!
!
!
!
!
!
interface Loopback0
 description ***Loopback***
 ip address 192.168.1.1 255.255.255.255
 ip ospf 1 area 0
!
interface Ethernet0/0
 description ***Connected to R1-LAN***
 ip address 10.10.110.1 255.255.255.0
 ip ospf 1 area 0
!
interface Ethernet0/1
 description ***Connected to L2SW***
 ip address 10.10.230.1 255.255.255.0
 ip ospf hello-interval 25
 ip ospf 1 area 0
!
interface Ethernet0/2
 no ip address
 shutdown



--- More (35) ---
```

```
R2
!
!
!
!
!
!
interface Loopback0
 description ***Loopback***
 ip address 192.168.2.2 255.255.255.255
 ip ospf 2 area 0
!
interface Ethernet0/0
 description ***Connected to R2-LAN***
 ip address 10.10.120.1 255.255.255.0
 ip ospf 2 area 0
!
interface Ethernet0/1
 description ***Connected to L2SW***
 ip address 10.10.230.2 255.255.255.0
 ip ospf 2 area 0
!
interface Ethernet0/2
 no ip address
 shutdown



--- More (35) ---
```

NEW QUESTION 132
Which two statements describe the process identifier that is used in the command to configure OSPF on a router? (Choose two.)
Router(config)# router ospf 1

A. All OSPF routers in an area must have the same process ID.
B. Only one process number can be used on the same router.
C. Different process identifiers can be used to run multiple OSPF processes
D. The process number can be any number from 1 to 65,535.
E. Hello packets are sent to each neighbor to determine the processor identifier.

Answer: CD

Explanation: Multiple OSPF processes can be configured on a router using multiple process ID's. The valid process ID's are shown below:
Edge-B(config)#router ospf
<1-65535> Process ID

NEW QUESTION 134
Which IP address is a private address?

A. 12.0.0.1
B. 168.172.19.39
C. 172.20.14.36
D. 172.33.194.30
E. 192.169.42.34

Answer: C

NEW QUESTION 136
Which one of the following IP addresses is the last valid host in the subnet using mask 255.255.255.224?

A. 192.168.2.63
B. 192.168.2.62
C. 192.168.2.61
D. 192.168.2.60
E. 192.168.2.32

Answer: B

Explanation: With the 224 there are 8 networks with increments of 32
One of these is 32 33 62 63 where 63 is broadcast so 62 is last valid host out of given choices.

NEW QUESTION 141
What is the network address for the host with IP address 192.168.23.61/28?

A. 192.168.23.0
B. 192.168.23.32
C. 192.168.23.48
D. 192.168.23.56
E. 192.168.23.60

Answer: C

Explanation: Convert bit-length prefix to quad-dotted decimal representation, then from it find the number of bits used for subnetting you can find previously calculated number of subnets by separating subnets each having value of last bit used for subnet masking Find that your IP address is in which subnet, that subnet's first address is network address and last address is broadcast address.
Based on above steps the answer is option C

NEW QUESTION 143
Which of the following describe the process identifier that is used to run OSPF on a router? (Choose two)

A. It is locally significant.
B. It is globally significant.
C. It is needed to identify a unique instance of an OSPF database.
D. It is an optional parameter required only if multiple OSPF processes are running on the router.
E. All routers in the same OSPF area must have the same process ID if they are to exchange routing information.

Answer: AC

Explanation: https://learningnetwork.cisco.com/thread/6248
They are locally significant only, and have no bearing on the structure of any OSPF packet or LSA update. So you can have a separate process-id on every single router in your network if you so desire.

NEW QUESTION 145
ROUTER# show ip route
192.168.12.0/24 is variably subnetted, 9 subnets, 3 masks C 192.168.12.64 /28 is directly connected, Loopback1
C 192.168.12.32 /28 is directly connected, Ethernet0 C 192.168.12.48 /28 is directly connected, Loopback0
O 192.168.12.236 /30 [110/128] via 192.168.12.233, 00:35:36, Serial0
C 192.168.12.232 /30 is directly connected, Serial0
O 192.168.12.245 /30 [110/782] via 192.168.12.233, 00:35:36, Serial0
O 192.168.12.240 /30 [110/128] via 192.168.12.233, 00:35:36, Serial0
O 192.168.12.253 /30 [110/782] via 192.168.12.233, 00:35:37, Serial0
O 192.168.12.249 /30 [110/782] via 192.168.12.233, 00:35:37, Serial0
O 192.168.12.240/30 [110/128] via 192.168.12.233, 00:35:36, Serial 0
To what does the 128 refer to in the router output above?

A. OSPF cost
B. OSPF priority
C. OSPF hop count
D. OSPF ID number
E. OSPF administrative distance

Answer: A

Explanation: The first parameter is the Administrative Distance of OSPF (110) while the second parameter is the cost of OSPF.

NEW QUESTION 147
What is the default administrative distance of the OSPF routing protocol?

A. 90
B. 100
C. 110
D. 120
E. 130
F. 170

Answer: C

Explanation: Default Distance Value Table
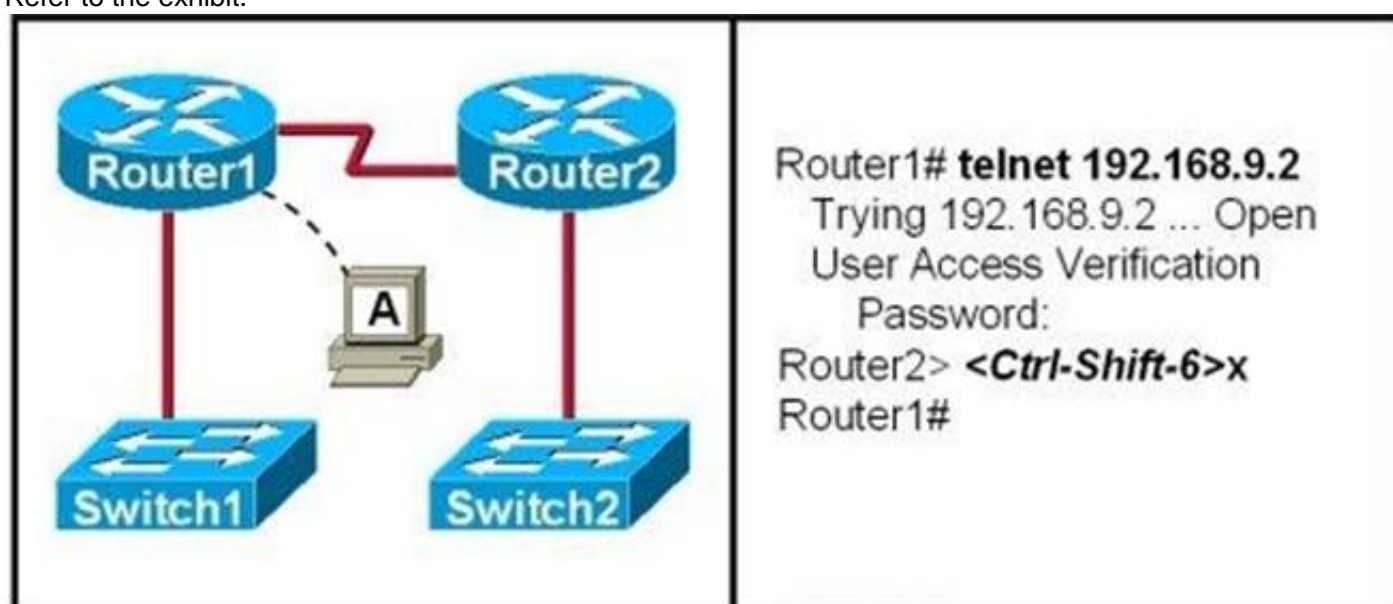This table lists the administrative distance default values of the protocols that Cisco supports:

Route Source	Default Distance Values
Connected interface	0
Static route	1
Enhanced Interior Gateway Routing Protocol (EIGRP) summary route	5
External Border Gateway Protocol (BGP)	20
Internal EIGRP	90
IGRP	100
OSPF	110
Intermediate System-to-Intermediate System (IS-IS)	115
Routing Information Protocol (RIP)	120
Exterior Gateway Protocol (EGP)	140
On Demand Routing (ODR)	160
External EIGRP	170
Internal BGP	200
Unknown*	255

If the administrative distance is 255, the router does not believe the source of that route and does not install the route in the routing table.

NEW QUESTION 148
Refer to the exhibit.

If the resume command is entered after the sequence that is shown in the exhibit, which router prompt will be displayed?

A. Router1>
B. Router1#
C. Router2>
D. Router2#

Answer: C

Explanation: After resuming the telnet session by using the Enter key after it has been suspended, it will resume back to the telnet session so it will be back to the router2> prompt.

NEW QUESTION 150
What information can be used by a router running a link-state protocol to build and maintain its topological database? (Choose two.)

A. hello packets
B. SAP messages sent by other routers
C. LSAs from other routers
D. beacons received on point-to-point links

E. routing tables received from other link-state routers
F. TTL packets from designated routers

Answer: AC

Explanation: Reference 1:
http://www.ciscopress.com/articles/article.asp?p=24090&seqNum=4
Link state protocols, sometimes called shortest path first or distributed database protocols, are built around a well-known algorithm from graph theory, E. W. Dijkstra'a shortest path algorithm. Examples of link state routing protocols are:
Open Shortest Path First (OSPF) for IP
The ISO's Intermediate System to Intermediate System (IS-IS) for CLNS and IP DEC's DNA Phase V
Novell's NetWare Link Services Protocol (NLSP)
Although link state protocols are rightly considered more complex than distance vector protocols, the basic functionality is not complex at all:
1. Each router establishes a relationship—an adjacency—with each of its neighbors.
2. Each router sends link state advertisements (LSAs), some
3. Each router stores a copy of all the LSAs it has seen in a database. If all works well, the databases in all routers should be identical.
4. The completed topological database, also called the link state database, describes a graph of the internetwork. Using the Dijkstra algorithm, each router calculates the shortest path to each network and enters this information into the route table.
OSPF Tutorial

NEW QUESTION 151
An administrator must assign static IP addresses to the servers in a network. For network 192.168.20.24/29, the router is assigned the first usable host address while the sales server is given the last usable host address.
Which of the following should be entered into the IP properties box for the sales server?

A. IP address: 192.168.20.14Subnet Mask: 255.255.255.248Default Gateway: 192.168.20.9
B. IP address: 192.168.20.254Subnet Mask: 255.255.255.0Default Gateway: 192.168.20.1
C. IP address: 192.168.20.30Subnet Mask: 255.255.255.248Default Gateway: 192.168.20.25
D. IP address: 192.168.20.30Subnet Mask: 255.255.255.240Default Gateway: 192.168.20.17
E. IP address: 192.168.20.30Subnet Mask: 255.255.255.240Default Gateway: 192.168.20.25

Answer: C

Explanation: With network 192.168.20.24/29 we have:
Increment: 8 (/29 = 255.255.255.248 = 11111000 for the last octet) Network address: 192.168.20.24 (because 24 = 8 * 3)
Broadcast address: 192.168.20.31 (because 31 = 24 + 8 − 1)
Therefore the first usable IP address is 192.168.20.25 (assigned to the router) and the last usable IP address is 192.168.20.30 (assigned to the sales server). The IP address of the router is also the default gateway of the sales server.

NEW QUESTION 154
What does administrative distance refer to?

A. the cost of a link between two neighboring routers
B. the advertised cost to reach a network
C. the cost to reach a network that is administratively set
D. a measure of the trustworthiness of a routing information source

Answer: D

Explanation: Reference: http://www.cisco.com/en/US/tech/tk365/technologies_tech_note09186a0080094195.shtml
Administrative distance is the feature that routers use in order to select the best path when there are two or more different routes to the same destination from two different routing protocols. Administrative distance defines the reliability of a routing protocol. Each routing protocol is prioritized in order of most to least reliable (believable) with the help of an administrative distance value.
Administrative distance is the first criterion that a router uses to determine which routing protocol to use if two protocols provide route information for the same destination. Administrative distance is a measure of the trustworthiness of the source of the routing information. The smaller the administrative distance value, the more reliable the protocol.

NEW QUESTION 155
Which command is used to display the collection of OSPF link states?

A. show ip ospf link-state
B. show ip ospf lsa database
C. show ip ospf neighbors
D. show ip ospf database

Answer: D

Explanation: The "show ip ospf database" command displays the link states. Here is an example: Here is the lsa database on R2.
R2#show ip ospf database
OSPF Router with ID (2.2.2.2) (Process ID 1) Router Link States (Area 0)
Link ID ADV Router Age Seq# Checksum Link count 2.2.2.2 2.2.2.2 793 0x80000003 0x004F85 2
10.4.4.4 10.4.4.4 776 0x80000004 0x005643 1

NEW QUESTION 157
111.111.111 111.111.111.111 755 0x80000005 0x0059CA 2
133.133.133.133 133.133.133.133 775 0x80000005 0x00B5B1 2

Net Link States (Area 0)
Link ID ADV Router Age Seq# Checksum10.1.1.1 111.111.111.111 794 0x80000001 0x001E8B
10.2.2.3 133.133.133.133 812 0x80000001 0x004BA9
10.4.4.1 111.111.111.111 755 0x80000001 0x007F16
10.4.4.3 133.133.133.133 775 0x80000001 0x00C31F

102.
Which statement describes the process ID that is used to run OSPF on a router?

A. It is globally significant and is used to represent the AS number.
B. It is locally significant and is used to identify an instance of the OSPF database.
C. It is globally significant and is used to identify OSPF stub areas.
D. It is locally significant and must be the same throughout an area.
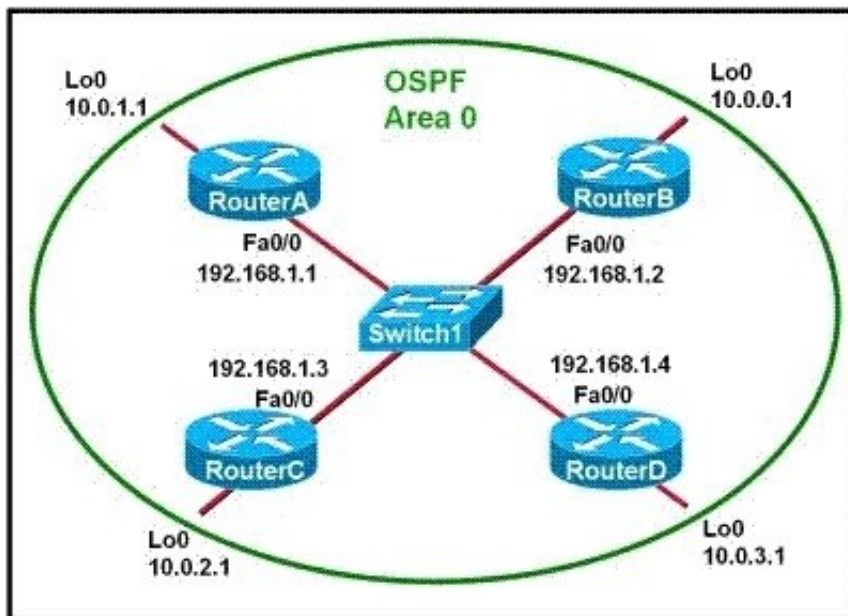
Answer: B

Explanation: The IP addresses 133.6.5.4 and 190.6.5.4 are both valid Class B addresses when a default mask is in use.
The Class B default mask is 255.255.0.0 and the range of valid addresses is 128.0.0.0- 191.255.255.255.
The IP address 10.6.8.35 is a Class A address. The Class A default mask is 255.0.0.0 and the range of valid addresses is 1.0.0.0 - 127.255.255.255, with the exception of the range

NEW QUESTION 161
Refer to the exhibit.

Which two statements are true about the loopback address that is configured on RouterB? (Choose two.)

A. It ensures that data will be forwarded by RouterB.
B. It provides stability for the OSPF process on RouterB.
C. It specifies that the router ID for RouterB should be 10.0.0.1.
D. It decreases the metric for routes that are advertised from RouterB.
E. It indicates that RouterB should be elected the DR for the LAN.

Answer: BC

Explanation: A loopback interface never comes down even if the link is broken so it provides stability for
the OSPF process (for example we use that loopback interface as the router-id) - The router-ID is chosen in the order below:
+ The highest IP address assigned to a loopback (logical) interface.
+ If a loopback interface is not defined, the highest IP address of all active router's physical interfaces will be chosen.
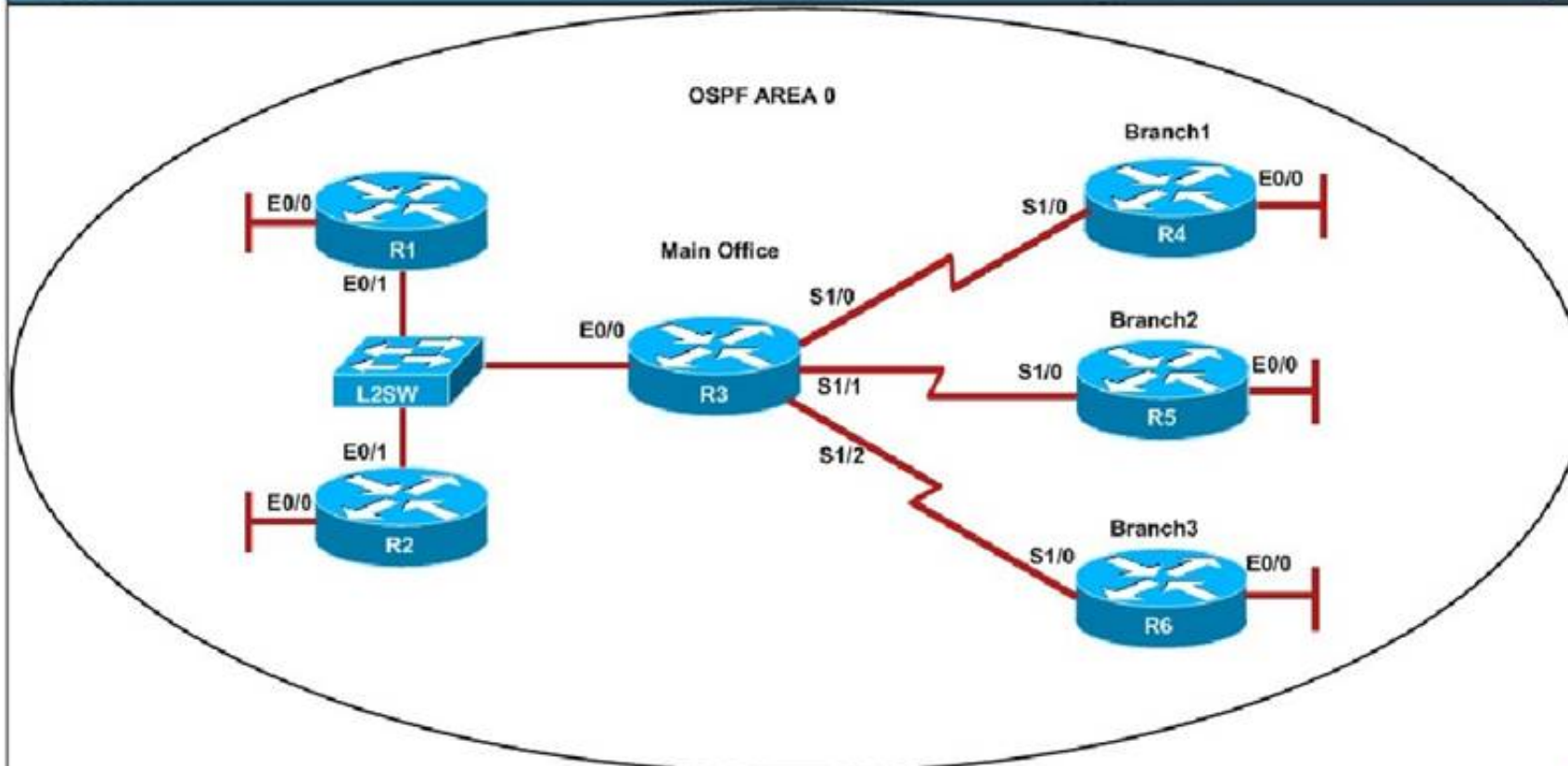-> The loopback interface will be chosen as the router ID of RouterB -
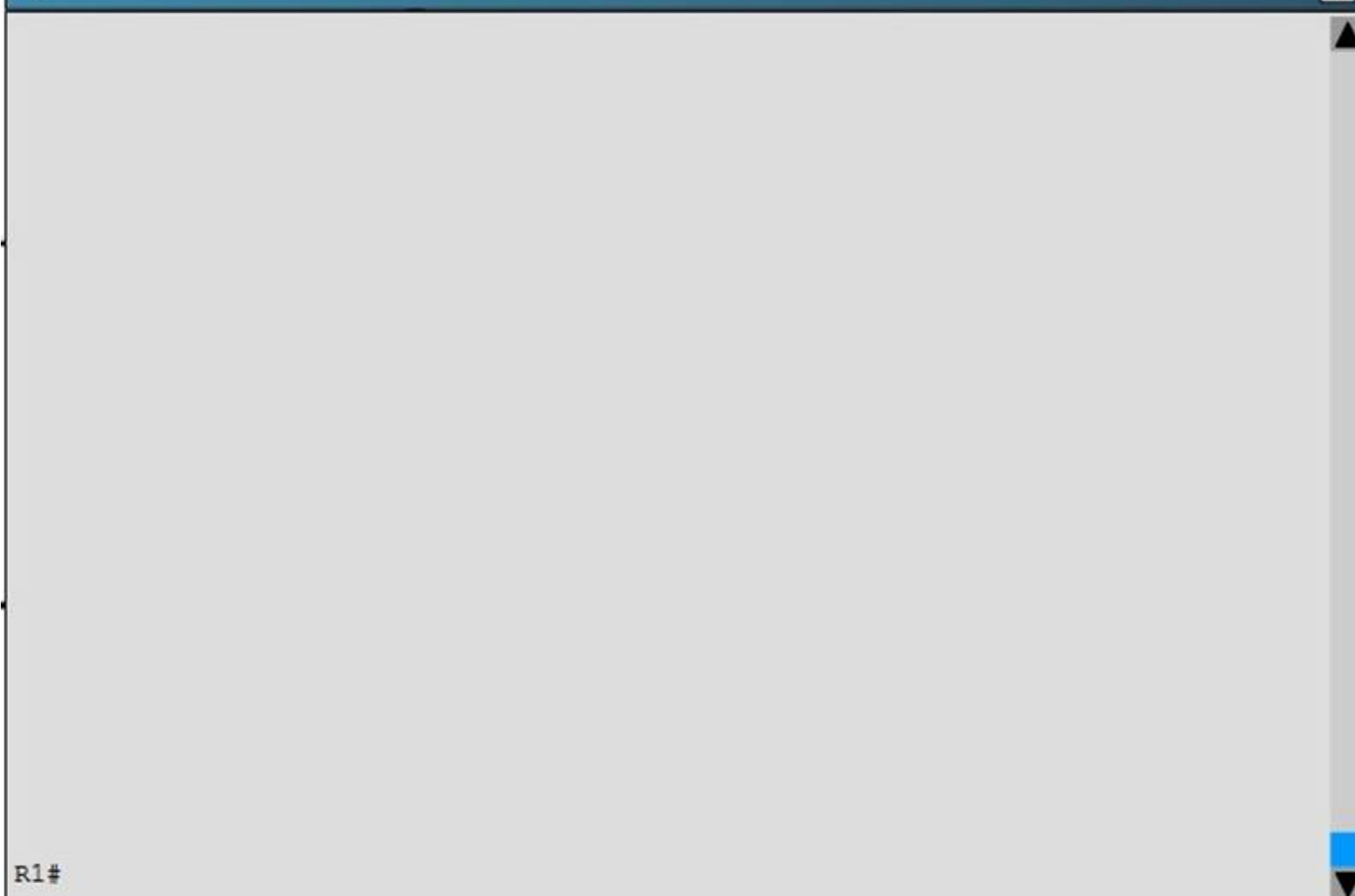
NEW QUESTION 164
Scenario
Refer to the topology. Your company has decided to connect the main office with three other remote branch offices using point-to-point serial links.
You are required to troubleshoot and resolve OSPF neighbor adjacency issues between the main office and the routers located in the remote branch offices.

Topology ✕

OSPF AREA 0

R1 ✕

R1#

R2

R2#

R3

R3#

R4

R4#

R5

R5#

```
R6                                                                    X

R6#
```

```
L2SW                                                                  X

L2SW#
```
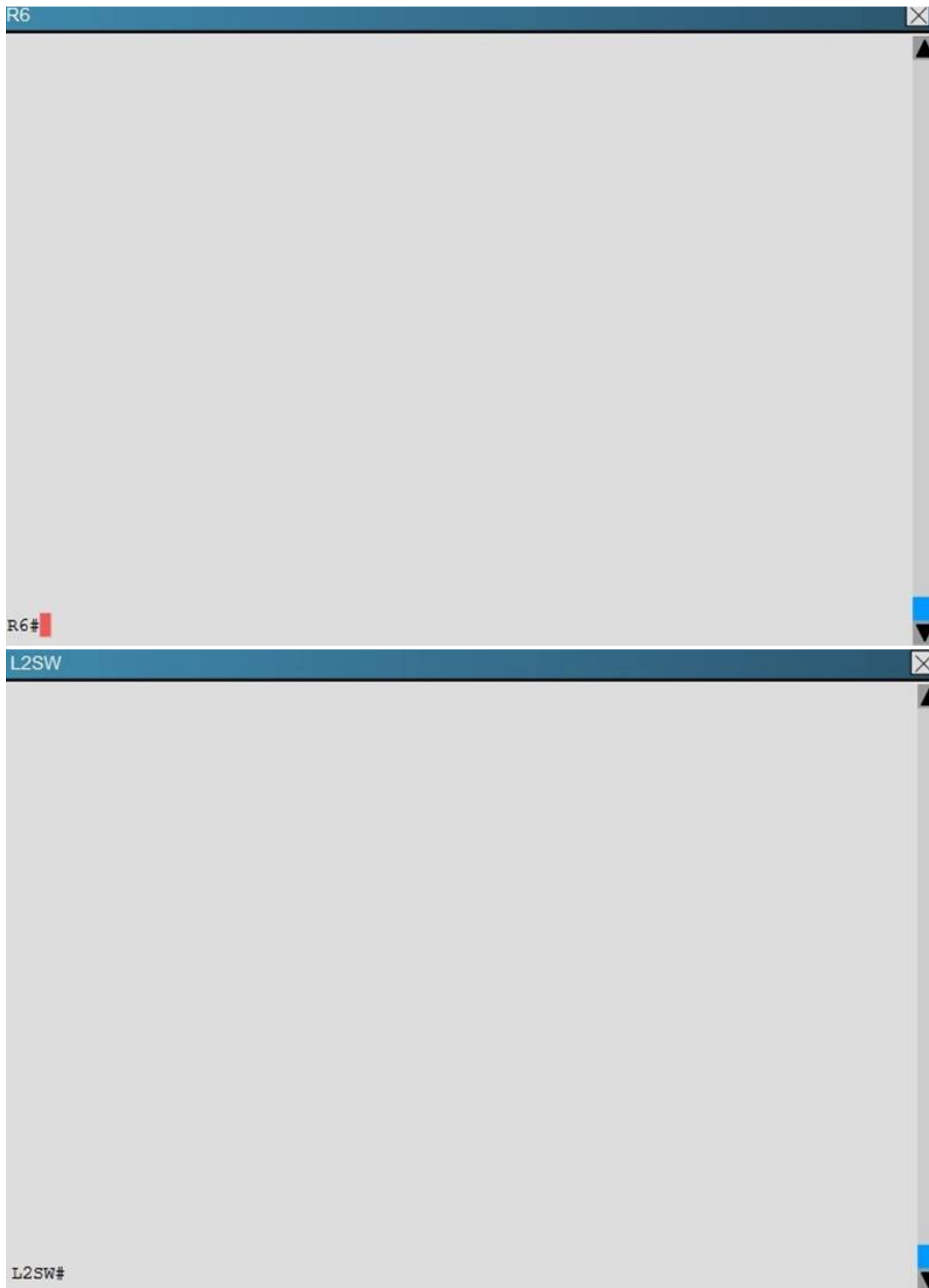
An OSPF neighbor adjacency is not formed between R3 in the main office and R5 in the Branch2 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a PPP authentication issue; a password mismatch.
C. There is an OSPF hello and dead interval mismatch.
D. There is a missing network command in the OSPF process on R5.

Answer: C

Explanation: The "show ip ospf interface command on R3 and R5 shows that the hello and dead intervals do not match. They are 50 and 200 on R3 and 10 and 40 on R5.

```
R3
   Suppress hello for 0 neighbor(s)
 Serial1/1 is up, line protocol is up
   Internet Address 10.10.240.5/30, Area 0, Attached via Interfac
   Process ID 3, Router ID 192.168.3.3, Network Type POINT TO POI
   Topology-MTID    Cost    Disabled    Shutdown    Topology Na
       0           64       no          no          Base
   Enabled by interface config, including secondary ip addresses
   Transmit Delay is 1 sec, State POINT TO POINT
   Timer intervals configured, Hello 50, Dead 200, Wait 200, Retr
     oob-resync timeout 200
     Hello due in 00:00:39
   Supports Link-local Signaling (LLS)
   Cisco NSF helper support enabled
   IETF NSF helper support enabled
   Index 4/4, flood queue length 0
   Next 0x0(0)/0x0(0)
   Last flood scan length is 0, maximum is 0
   Last flood scan time is 0 msec, maximum is 0 msec
   Neighbor Count is 0, Adjacent neighbor count is 0
   Suppress hello for 0 neighbor(s)
 Serial1/0 is up, line protocol is up
   Internet Address 10.10.240.1/30, Area 0, Attached via Interfac
   Process ID 3, Router ID 192.168.3.3, Network Type POINT TO POI
   Topology-MTID    Cost    Disabled    Shutdown    Topology Na


 --- More (37) ---
```

```
R5
              0        1       no        no         Base
   Enabled by interface config, including secondary ip addresses
   Loopback interface is treated as a stub Host
 Serial1/0 is up, line protocol is up
   Internet Address 10.10.240.6/30, Area 0, Attached via Interface Enable
   Process ID 5, Router ID 192.168.5.5, Network Type POINT TO POINT, Cost: 64
   Topology-MTID    Cost    Disabled    Shutdown    Topology Name
       0           64       no          no          Base
   Enabled by interface config, including secondary ip addresses
   Transmit Delay is 1 sec, State POINT TO POINT
   Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
     oob-resync timeout 40
     Hello due in 00:00:08
   Supports Link-local Signaling (LLS)
   Cisco NSF helper support enabled
   IETF NSF helper support enabled
   Index 3/3, flood queue length 0
   Next 0x0(0)/0x0(0)
   Last flood scan length is 0, maximum is 0
   Last flood scan time is 0 msec, maximum is 0 msec
   Neighbor Count is 0, Adjacent neighbor count is 0
   Suppress hello for 0 neighbor(s)
 Ethernet0/0 is up, line protocol is up
   Internet Address 172.16.114.1/24, Area 0, Attached via Interface Enable


 R5#
```

NEW QUESTION 168
Refer to the exhibit.

```
RouterD# show ip interface brief
Interface       IP-Address     OK? Method Status Protocol
FastEthernet0/0 192.168.5.3    YES manual up     up
FastEthernet0/1 10.1.1.2       YES manual up     up
Loopback0       172.16.5.1     YES NVRAM  up     up
Loopback1       10.154.154.1   YES NVRAM  up     up
```

Given the output for this command, if the router ID has not been manually set, what router ID will OSPF use for this router?

A. 10.1.1.2
B. 10.154.154.1
C. 172.16.5.1
D. 192.168.5.3

Answer: C

Explanation: The highest IP address of all loopback interfaces will be chosen -> Loopback 0 will be chosen as the router ID.

NEW QUESTION 172
Which three approaches can be used while migrating from an IPv4 addressing scheme to an IPv6 scheme? (Choose three)

A. static mapping of IPv4 address to IPv6 addresses
B. configuring IPv4 tunnels between IPv6 islands
C. use DHCPv6 to map IPv4 addresses to IPv6 addresses
D. use proxying and translation (NAT-PT) to translate IPv6 packets into IPv4 packets
E. configure IPv6 directly
F. enable dual-stack routing

Answer: BDF

Explanation: Connecting IPv6 islands with tunnels
An IPv6 island is a network made of IPv6 links directly connected by IPv6 routers. In the early days of IPv6 deployment, there are many IPv6 islands. IPv6 in IPv4 tunnels are used to connect those islands together. In each island, one (or more) dual stack routers are designated to encapsulate and decapsulate IPv6 packets within IPv4 packets. Different mechanisms have been developed to manage tunnels: automatic tunnels3, configured tunnels3, tunnel brokers3, 6over43, 6to43,...
Reference 2:
http://www.petri.co.il/ipv6-transition.htm
Network Address Translation - Protocol Translation (NAT-PT)
The NAT-PT method enables the ability to either statically or dynamically configure a translation of a IPv4 network address into an IPv6 network address and vice versa. For those familiar with more typically NAT implementations, the operation is very similar but includes a protocol translation function. NAT-PT also ties in an Application Layer Gateway (ALG) functionality that converts Domain Name System (DNS) mappings between protocols.
Dual Stack
The simplest approach when transitioning to IPv6 is to run IPv6 on all of the devices that are currently running IPv4. If this is something that is possible within the organizational network, it is very easy to implement.
However, for many organizations, IPv6 is not supported on all of the IPv4 devices; in these situations other methods must be considered.
Reference: http://www.opus1.com/ipv6/howdoitransitiontoipv6.html

NEW QUESTION 175
Which two of these statements are true of IPv6 address representation? (Choose two.)

A. There are four types of IPv6 addresses: unicast, multicast, anycast, and broadcast.
B. A single interface may be assigned multiple IPv6 addresses of any type.
C. Every IPv6 interface contains at least one loopback address.
D. The first 64 bits represent the dynamically created interface ID.

E. Leading zeros in an IPv6 16 bit hexadecimal field are mandatory.

Answer: BC

Explanation: A single interface may be assigned multiple addresses of any type (unicast, anycast, multicast).
Every IPv6-enabled interface must contain at least one loopback and one link-local address.
Optionally, every interface can have multiple unique local and global addresses. IPv6 host addresses can be assigned in multiple ways:
Static configuration Stateless autoconfiguration DHCPv6
When IPv6 is used over Ethernet networks, the Ethernet MAC address can be used to generate the 64-bit interface ID for the host. This is called the EUI-64 address.
Since MAC addresses use 48 bits, additional bits must be inserted to fill the 64 bits required.
Reference: http://www.cisco.com/en/US/technologies/tk648/tk872/technologies_white_paper0900aecd 8026003d.pdf

NEW QUESTION 179
Which three statements are correct about RIP version 2? (Choose three)

A. It uses broadcast for its routing updates.
B. It supports authentication.
C. It is a classless routing protocol.
D. It has a lower default administrative distance then RIP version 1.
E. It has the same maximum hop count as RIP version 1.
F. It does not send the subnet mask any updates.

Answer: BCE

Explanation: A and E are correct according to the theory of RIP.
RIP version 1 updates are broadcasts, and RIP version 2 updates are multicast to
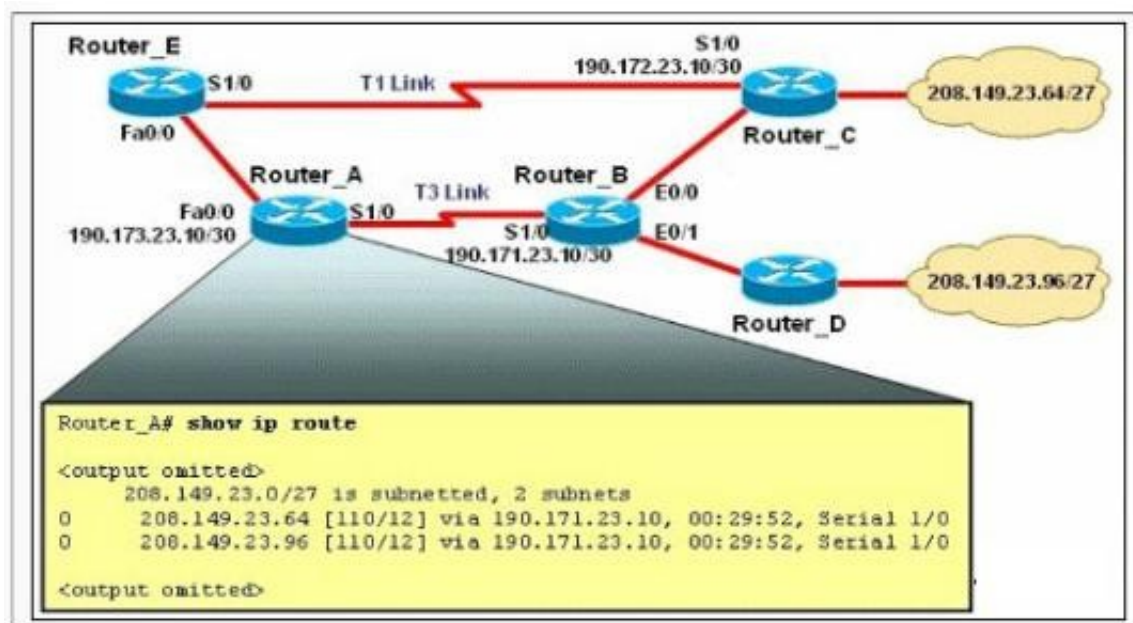224.0.0.9 -> B is not correct.
RIP v1 is a classful routing protocol but RIP v2 is a classless routing protocol -> C is correct.
RIPv1 and RIPv2 have the same default administrative distance of 120 -> D is not correct. RIPv2 is a classless routing protocol so it does send the subnet mask in updates -> F is not correct.

NEW QUESTION 184
Refer to the exhibit.

The network is converged.After link-state advertisements are received from Router_A, what information will Router_E contain in its routing table for the subnets 208.149.23.64 and 208.149.23.96?

A. 208.149.23.64[110/13] via 190.173.23.10, 00:00:07, FastEthemet0/0208.149.23.96[110/13] via 190.173.23.10, 00:00:16, FastEthemet0/0
B. 208.149.23.64[110/1] via 190.172.23.10, 00:00:07, Serial1/0208.149.23.96[110/3] via 190.173.23.10, 00:00:16, FastEthemet0/0
C. 208.149.23.64[110/13] via 190.173.23.10, 00:00:07, Serial1/0208.149.23.96[110/13] via 190.173.23.10, 00:00:16, Serial1/0208.149.23.96[110/13] via 190.173.23.10, 00:00:16, FastEthemet0/0
D. 208.149.23.64[110/3] via 190.172.23.10, 00:00:07, Serial1/0208.149.23.96[110/3] via 190.173.23.10, 00:00:16, Serial1/0

Answer: A

Explanation: Router_E learns two subnets subnets 208.149.23.64 and 208.149.23.96 via Router_A through FastEthernet interface. The interface cost is calculated with the formula 108 / Bandwidth. For FastEthernet it is 108 / 100 Mbps = 108 / 100,000,000 = 1. Therefore the
cost is 12 (learned from Router_A) + 1 = 13 for both subnets ->
The cost through T1 link is much higher than through T3 link (T1 cost = 108 / 1.544 Mbps = 64; T3 cost = 108 / 45 Mbps = 2) so surely OSPF will choose the path through T3 link -> Router_E will choose the path from Router_A through FastEthernet0/0, not Serial1/0.
In fact, we can quickly eliminate answers B, C and D because they contain at least one subnet learned from Serial1/0 -> they are surely incorrect.

NEW QUESTION 187
What is the default maximum number of equal-cost paths that can be placed into the routing table of a Cisco OSPF router?

A. 2
B. 8
C. 16

D. unlimited

Answer: B

Explanation: Maximum-paths (OSPF)
To control the maximum number of parallel routes that Open Shortest Path First (OSPF) can support, use the maximum-paths command.
Syntax Description
maximum
Maximum number of parallel routes that OSPF can install in a routing table. The range is from 1 to 16 routes.
Command Default
8 paths

NEW QUESTION 189
Which command enables IPv6 forwarding on a Cisco router?

A. ipv6 host
B. ipv6 unicast-routing
C. ipv6 local
D. ipv6 neighbor

Answer: B

Explanation: Enabling IPv6 on Cisco IOS Software Technology http://www.ciscopress.com/articles/article.asp?p=31948&seqNum=4
The first step of enabling IPv6 on a Cisco router is the activation of IPv6 traffic forwarding to forward unicast IPv6 packets between network interfaces. By default, IPv6 traffic forwarding is disabled on Cisco routers.
The ipv6 unicast-routing command is used to enable the forwarding of IPv6 packets between interfaces on the router. The syntax for this command is as follows:
Router(config)#ipv6 unicast-routing The ipv6 unicast-routing command is enabled on a global basis.

NEW QUESTION 192
A router has learned three possible routes that could be used to reach a destination network. One route is from EIGRP and has a composite metric of 20514560. Another route is from OSPF with a metric of 782. The last is from RIPv2 and has a metric of 4. Which route or routes will the router install in the routing table?

A. the OSPF route
B. the EIGRP route
C. the RIPv2 route
D. all three routes
E. the OSPF and RIPv2 routes

Answer: B

Explanation: When one route is advertised by more than one routing protocol, the router will choose to use the routing protocol which has lowest Administrative Distance. The Administrative
Distances of popular routing protocols are listed below:

Route Source	Administrative Distance
Directly Connected	0
Static	1
EIGRP	90
EIGRP Summary route	5
OSPF	110
RIP	120

NEW QUESTION 196
The network administrator is using a Windows PC application that is called putty.exe for remote communication to a switch for network troubleshooting. Which two protocols could be used during this communication? (Choose two.)

A. SNMP
B. HTTP
C. Telnet
D. RMON
E. SSH

Answer: CE

Explanation: PuTTY is a free implementation of Telnet and SSH for Windows and Unix platforms, and is used to connect to Cisco and other networking devices using SSH or Telnet.

NEW QUESTION 198
DRAG DROP
Various protocols are listed on the left. On the right are applications for the use of those protocols. Drag the protocol on the left to an associated function for that protocol on the right. (Not all options are used.)

Various protocols are listed on the left. On the right are applications for the use of those protocols. Drag the protocol on the left to an associated function for that protocol on the right. (Not all options are used.)

Protocols	Applications
ICMP	A PC sends packets to the default gateway IP address the first time since the PC turned on.
DHCP	The network administrator is checking basic IP connectivity from a workstation to a server.
RARP	The TCP/IP protocol stack must find an IP address for packets destined for a URL.
UDP	A network device will automatically assign IP addresses to workstations.
DNS	
ARP	

Answer:

Explanation:

Various protocols are listed on the left. On the right are applications for the use of those protocols. Drag the protocol on the left to an associated function for that protocol on the right. (Not all options are used.)

ICMP	ARP
DHCP	ICMP
RARP	DNS
UDP	DHCP
DNS	
ARP	

NEW QUESTION 201
DRAG DROP
Move the protocol or service on the left to a situation on the right where it would be used. (Not all options are used.)

Move the protocol or service on the left to a situation on the right where it would be used. (Not all options are used.)

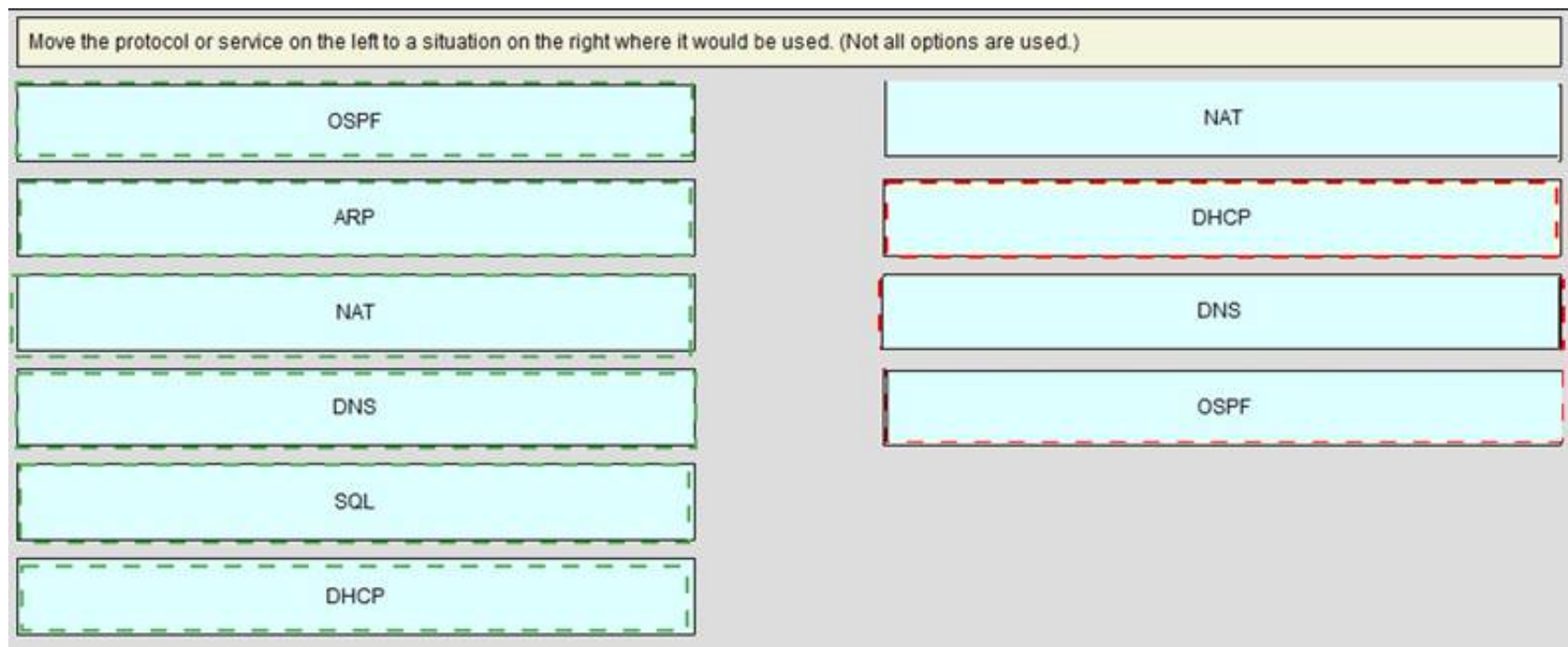| Protocols/Services	Situations
OSPF	A PC with address 10.1.5.10 must access devices on the Internet.
ARP	Only routers and servers require static IP addresses. Easy IP administration is required.
NAT	A PC only knows a server as //**MediaServer**. IP needs to send data to that server.
DNS	A protocol is needed to replace current static routes with automatic route updates.
SQL	
DHCP	

Answer:

Explanation:

Move the protocol or service on the left to a situation on the right where it would be used. (Not all options are used.)

OSPF		NAT
ARP		DHCP
NAT		DNS
DNS		OSPF
SQL		
DHCP		

NEW QUESTION 202
A network administrator cannot connect to a remote router by using SSH. Part of the show interfaces command is shown.
router#show interfaces
Serial0/1/0 is up, line protocol is down
At which OSI layer should the administrator begin troubleshooting?

A. physical
B. data link
C. network
D. transport

Answer: B

Explanation: https://learningnetwork.cisco.com/thread/12389
I think the indication here is "Serial 0 is up, line protocol is down". What causes this indication? Correct me if I am wrong. When you have this indication, a cable unplugged is
not a correct answer. If you check the output of your "show interface serial 0" command again, you should notice it as "Serial 0 is down, line protocol is down."
Under the "show ip int brief" you should see status = down and protocol = down as opposed to up, down. Because you disconnected the cable, layer 1 will go down, which is indicated by the serial 0 down status. The line protocol status is for layer 2. So, a cable unplugged is not a correct answer to "Serial 0 is up, line protocol is down". Up/down means that the physical layer is OK, but there is a problem with the data link link (line protocol).

NEW QUESTION 206
What is the best practice when assigning IP addresses in a small office of six hosts?

A. Use a DHCP server that is located at the headquarters.
B. Use a DHCP server that is located at the branch office.
C. Assign the addresses by using the local CDP protocol.
D. Assign the addresses statically on each node.

Answer: D

Explanation: Its best to use static addressing scheme where the number of systems is manageable rather than using a dynamic method such as DHCP as it is easy to operate and manage.

NEW QUESTION 209
Which of the following statements are TRUE regarding Cisco access lists? (Choose two.)

A. In an inbound access list, packets are filtered as they enter an interface.
B. In an inbound access list, packets are filtered before they exit an interface.
C. Extended access lists are used to filter protocol-specific packets.
D. You must specify a deny statement at the end of each access list to filter unwanted traffic.
E. When a line is added to an existing access list, it is inserted at the beginning of the access list.

Answer: AC

Explanation: In an inbound access list, packets are filtered as they enter an interface. Extended access lists are used to filter protocol specific packets. Access lists can be used in a variety of situations when the router needs to be given guidelines for decision-making. These situations include:
Filtering traffic as it passes through the router To control access to the VTY lines (Telnet)
To identify "interesting" traffic to invoke Demand Dial Routing (DDR) calls To filter and control routing updates from one router to another
There are two types of access lists, standard and extended. Standard access lists are applied as close to the destination as possible (outbound), and can only base their filtering criteria on the source IP address. The number used while creating an access list specifies the type of access list created. The range used for standard access lists is 1 to 99 and 1300 to 1999. Extended access lists are applied as close to the source as possible (inbound), and can base their filtering criteria on the source or destination IP address, or on the specific protocol being used. The range used for extended access lists is 100 to 199 and 2000 to 2699. Other features of access lists include:
Inbound access lists are processed before the packet is routed.

Outbound access lists are processed after the packet has been routed to an exit interface. An "implicit deny" is at the bottom of every access list, which means that if a packet has not matched any preceding access list condition, it will be filtered (dropped).

Access lists require at least one permit statement, or all packets will be filtered (dropped). One access list may be configured per direction for each Layer 3 protocol configured on an interface The option stating that in an inbound access list, packets are filtered before they exit an interface is incorrect.

Packets are filtered as they exit an interface when using an outbound access list.

The option stating that a deny statement must be specified at the end of each access list in order to filter unwanted traffic is incorrect. There is an implicit deny at the bottom of every access list.

When a line is added to an existing access list, it is not inserted at the beginning of the access list. It is inserted at the end. This should be taken into consideration. For example, given the following access list, executing the command access-list 110 deny tcp 192.168.5.0 0.0.0.255 any eq www would have NO effect on the packets being filtered because it would be inserted at the end of the list, AFTER the line that allows all traffic.

access-list 110 permit ip host 192.168.5.1 any

access-list 110 deny icmp 192.168.5.0 0.0.0.255 any echo access-list 110 permit any any

NEW QUESTION 211
The ip helper-address command does what?

A. assigns an IP address to a host
B. resolves an IP address from a DNS server
C. relays a DHCP request across networks
D. resolves an IP address overlapping issue

Answer: C

Explanation: http://cisconet.com/tcpip/dhcp/107-how-to-use-ip-helper-address-to-connect-remote-dhcp- server.html
When the DHCP client sends the DHCP request packet, it doesn't have an IP address. So it uses the all-zeroes address, 0.0.0.0, as the IP source address. And it doesn't know how to reach the DHCP server, so it uses a general broadcast address, 255.255.255.255, for the destination.
So the router must replace the source address with its own IP address, for the interface that received the request. And it replaces the destination address with the address specified in the ip helper-address command. The client device's MAC address is included in the payload of the original DHCP request packet, so the router doesn't need to do anything to ensure that the server receives this information. The router then relays the DHCP request to the DHCP server.
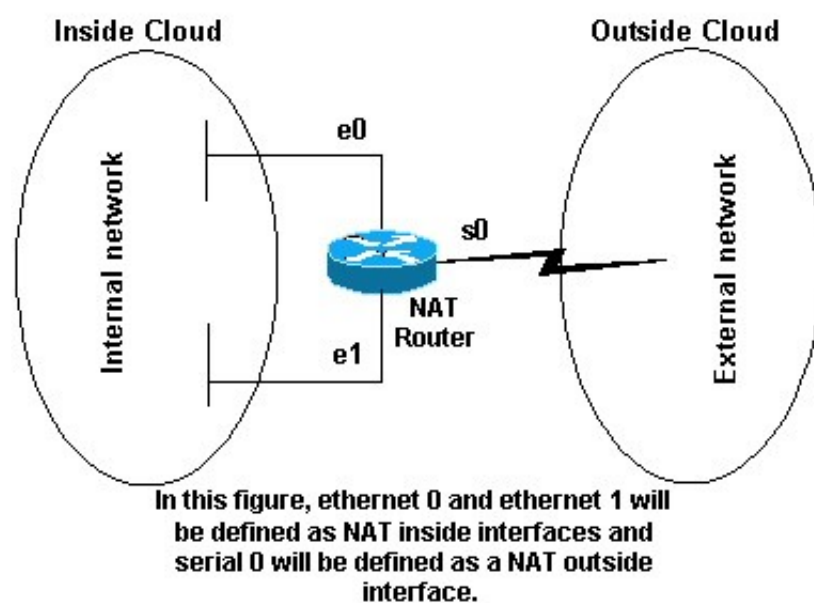
NEW QUESTION 214
When configuring NAT, the Internet interface is considered to be what?

A. local
B. inside
C. global
D. outside

Answer: D

Explanation: The first step to deploy NAT is to define NAT inside and outside interfaces. You may find it easiest to define your internal network as inside, and the external network as outside. However, the terms internal and external are subject to arbitration as well. This figure shows an example of this.

In this figure, ethernet 0 and ethernet 1 will be defined as NAT inside interfaces and serial 0 will be defined as a NAT outside interface.

Reference: http://www.cisco.com/c/en/us/support/docs/ip/network-address-translation-nat/13772-12.html#topic2

NEW QUESTION 219
What happens when computers on a private network attempt to connect to the Internet through a Cisco router running PAT?

A. The router uses the same IP address but a different TCP source port number for each connection.
B. An IP address is assigned based on the priority of the computer requesting the connection.
C. The router selects an address from a pool of one-to-one address mappings held in the lookup table.
D. The router assigns a unique IP address from a pool of legally registered addresses for the duration of the connection.

Answer: A

Explanation: Reference: http://www.cisco.com/en/US/docs/security/asa/asa82/configuration/guide/nat_staticpat.html
Static PAT translations allow a specific UDP or TCP port on a global address to be translated to a specific port on a local address. That is, both the address and the port numbers are translated.
Static PAT is the same as static NAT, except that it enables you to specify the protocol (TCP or UDP) and port for the real and mapped addresses. Static PAT

enables you to identify the same mapped address across many different static statements, provided that the port is different for each statement. You cannot use the same mapped address for multiple static NAT statements.
Port Address Translation makes the PC connect to the Internet but using different TCP source port.

NEW QUESTION 223
How many addresses will be available for dynamic NAT translation when a router is configured with the following commands?
Router(config)#ip nat pool TAME 209.165.201.23 209.165.201.30 netmask 255.255.255.224
Router(config)#ip nat inside source list 9 pool TAME

A. 7
B. 8
C. 9
D. 10
E. 24
F. 32

Answer: B

Explanation: 209.165.201.23 to 209.165.201.30 provides for 8 addresses.

NEW QUESTION 226

Instructions ▭▣

For both the Router and the Switch the simulated console mode needs to start and remain in enabled mode.

RouterA and SwitchA have been configured to operate in a private network which will connect to the Internet. You have been asked to review the configuration prior to cabling and implementation.

This task requires the use of various IOS commands to access and inspect the running configuration of RouterA and SwitchA. No configuration changes are necessary.

You will connect to RouterA and SwitchA via the console devices that are attached to each.

There are 4 multiple-choice questions with this task. Be sure to answer all of them before leaving this item. In order to score the maximum points you will need to have accessed both SwitchA and RouterA.

NOTE: The configuration command has been disabled for both the router and switch in this simulation.

Topology

SwitchA
IP address 10.1.1.200

RouterA
IP address 10.1.1.250

SwitchA
console

RouterA
console

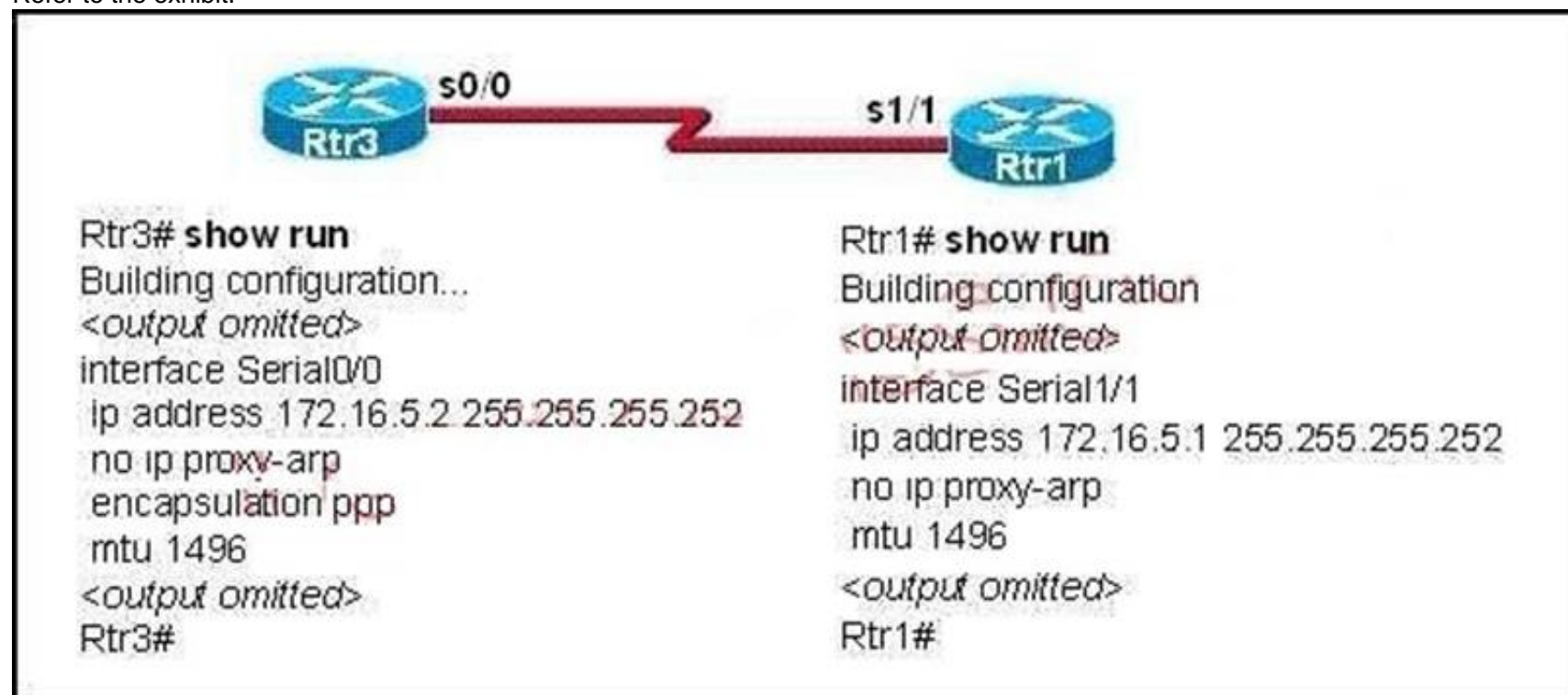Select two options which are security Issues which need to be modified before RouterA is used? (Choose two.)

A. unencrypted weak password is configured to protect privilege mode
B. inappropriate wording in banner message
C. the virtual terminal lines have a weak password configured
D. virtual terminal lines have a password, but it will not be used
E. configuration supports un-secure web server access

Answer: BD

NEW QUESTION 231
Refer to the exhibit.

A network administrator is troubleshooting a connectivity problem on the serial interfaces. The output from the show interfaces command on both routers shows that the serial interface is up, line protocol is down. Given the partial output for the show running-config in the exhibit, what is the most likely cause of this problem?

A. The serial cable is bad.
B. The MTU is incorrectly configured.
C. The Layer 2 framing is misconfigured.
D. The IP addresses are not in the same subnet.

Answer: C

Explanation: Here we see that Rtr3 is configured to use PPP encapsulation, but Rtr1 has not been configured for any kind of encapsulation. The default on Cisco router serial interfaces is HDLC, not PPP, so there is an encapsulation mismatch.

NEW QUESTION 234
Refer to the exhibit.

The DHCP settings have recently been changed on the DHCP server and the client is no longer able to reach network resources. What should be done to correct this situation?

A. Verify that the DNS server address is correct in the DHCP pool.
B. Ping the default gateway to populate the ARP cache.
C. Use the tracert command on the DHCP client to first determine where the problem is located.
D. Clear all DHCP leases on the router to prevent address conflicts.
E. Issue the ipconfig command with the /release and /renew options in a command window.

Answer: E

Explanation: A PC will retain its DHCP assigned IP address until the lease time expires, which often times is 24 hours or more. When changes are made to the DHCP server, the client should issue the ipconfig/release and then ipconfig/renew commands to obtain a new IP address lease.

NEW QUESTION 236

Instructions

You can click on the grey buttons below to view the different windows.

Each of the windows can be minimized by clicking on the [-]. You can also reposition a window by dragging it by the title bar.

The "Tab" key and most commands that use the "Control" or "Escape" keys are not supported and are not necessary to complete this simulation.
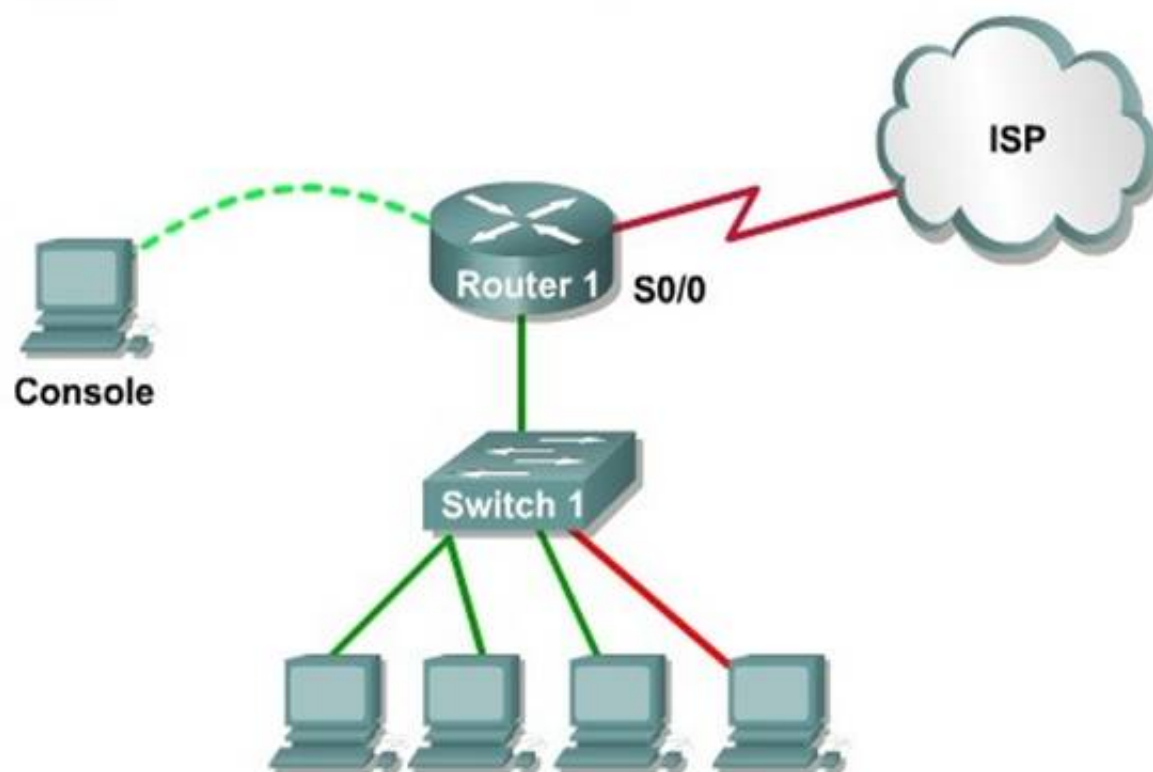
Scenario

This task requires the use of various **show** commands from the CLI of Router1 to answer four multiple-choice questions. This task does **not** require any configuration.

NOTE: The show running-configuration and the show startup-configuration commands have been disabled in this simulation.

To access the multiple-choice questions, click on the numbered boxes on the right of the top panel.

There are 4 multiple-choice questions with this task. Be sure to answer all 4 questions before leaving this item.

Topology

R1

```
Press RETURN to get started!
Router1>
```

What is the subnet broadcast address of the LAN connected to Router1?

A. 192.168.8.15
B. 192.168.8.31

C. 192.168.8.63
D. 192.168.8.127

Answer: A

Explanation: The IP address assigned to FA0/1 is 192.168.8.9/29, making 192.168.8.15 the broadcast address.

NEW QUESTION 240
Refer to the exhibit.

After the power-on-self test (POST), the system LED of a Cisco 2950 switch turns amber. What is the status of the switch?

A. The POST was successful.
B. The switch has a problem with the internal power supply and needs an external power supply to be attached.
C. POST failed and there is a problem that prevents the operating system from being loaded.
D. The switch has experienced an internal problem but data can still be forwarded at a slower rate.
E. The switch passed POST, but all the switch ports are busy.

Answer: C

Explanation: http://www.cisco.com/en/US/products/hw/switches/ps607/products_tech_note09186a00801 25913.shtml
Each time you power up the switch, eight Power-On Self Tests (POSTs) run automatically. POSTs check the most important system components before the switch begins to forward packets. When the switch begins the POST, the port status LEDs display amber for two seconds, and then display green. As each test runs, the port status LEDs go out. 1x is the first to go out. The port status LEDs for ports 2x through 8x go out sequentially as the system completes a test.
When the POST completes successfully, the port status LEDs go out. This indicates that the switch is operational. If a test fails, the port status LED associated with the test displays
amber. The system LED also displays amber.
Not E: From Cisco IOS Software Release 11.2(8.5) SA6 onwards, the port and system LEDs both remain amber after a POST failure. In the earlier Cisco IOS Software Releases, only the LEDs of failed linked ports remained amber.

NEW QUESTION 242
Refer to the exhibit.

```
Finance# show interfaces fastEthernet 0/2
FastEthernet0/2 is down, line protocol is down (notconnect)
   Hardware is Fast Ethernet, address is 0017.596d.2a02
   Description: To Central Fa0/0
   MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
      reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Full-duplex, 100Mb/s
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input 00:00:03, output 00:00:00, output hang never
   Last clearing of "show interface" counters never
<output omitted>
```

An administrator replaced the 10/100 Mb NIC in a desktop PC with a 1 Gb NIC and now the PC will not connect to the network. The administrator began troubleshooting on the switch. Using the switch output shown, what is the cause of the problem?

A. Speed is set to 100Mb/s.
B. Input flow control is off.
C. Encapsulation is set to ARPA.
D. The port is administratively down.
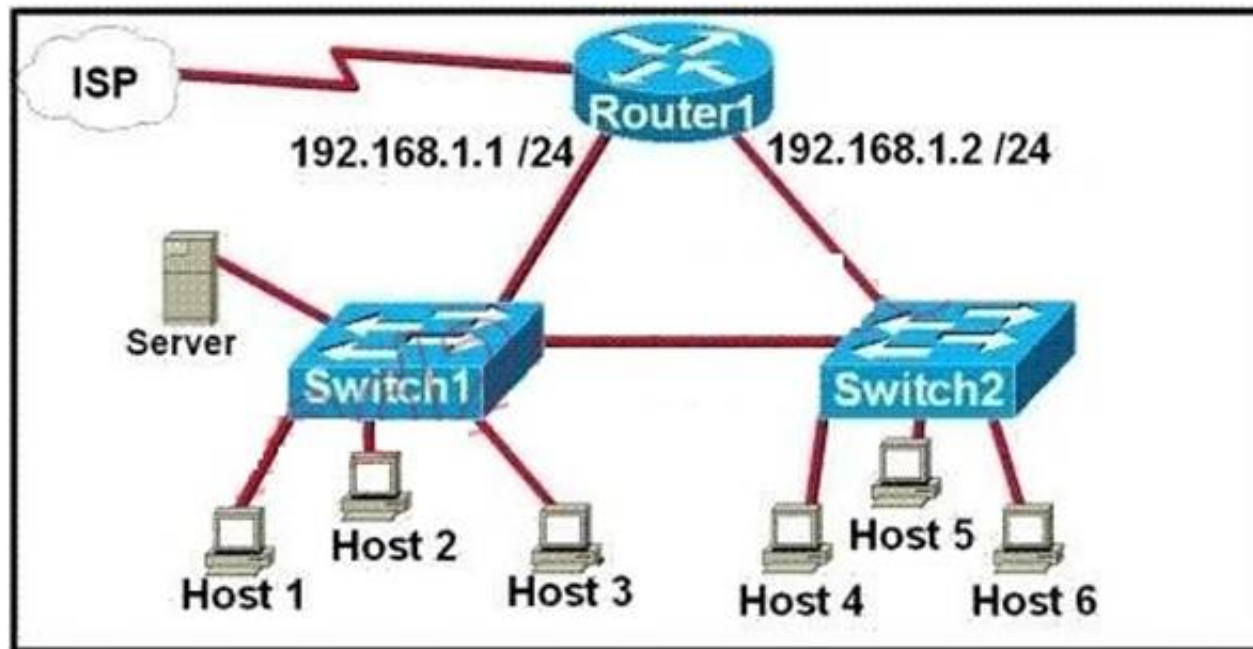E. The counters have never been cleared.

Answer: A

Explanation: For PC to switch connectivity, the speed settings must match. In this case, the 1 Gb NIC will not be able to communicate with a 100Mb fast Ethernet interface, unless the 1Gb NIC can be configured to connect at 100Mb.

NEW QUESTION 244
Refer to the exhibit.

A network technician is asked to design a small network with redundancy. The exhibit represents this design, with all hosts configured in the same VLAN. What conclusions can be made about this design?
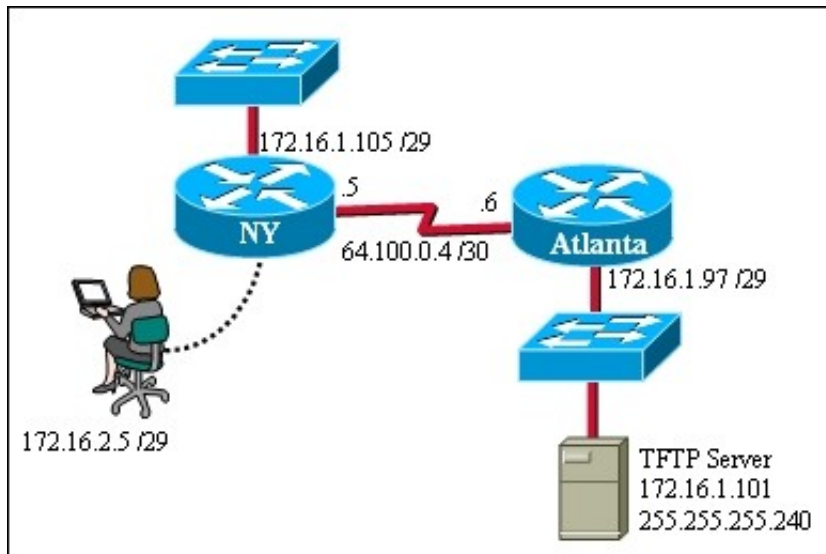
A. This design will function as intended.
B. Spanning-tree will need to be used.
C. The router will not accept the addressing scheme.
D. The connection between switches should be a trunk.
E. The router interfaces must be encapsulated with the 802.1Q protocol.

Answer: C

Explanation: The proposed addressing scheme is on the same network. Cisco routers will not allow you to assign two different interfaces to be on the same IP subnet.

NEW QUESTION 245
Refer to the exhibit.

A TFTP server has recently been installed in the Atlanta office. The network administrator is located in the NY office and has made a console connection to the NY router. After establishing the connection they are unable to backup the configuration file and IOS of the NY router to the TFTP server. What is the cause of this problem?

A. The NY router has an incorrect subnet mask.
B. The TFTP server has an incorrect IP address.
C. The TFTP server has an incorrect subnet mask.
D. The network administrator computer has an incorrect IP address.

Answer: C

Explanation: The TFTP server is using a mask of 255.255.255.240 (/28) while the router is configured with a /29. Because of this, the Atlanta router does not see the TFTP server as being in the same subnet.

NEW QUESTION 250

Instructions ▭ ▣

For both the Router and the Switch the simulated console mode needs to start and remain in enabled mode.

RouterA and SwitchA have been configured to operate in a private network which will connect to the Internet. You have been asked to review the configuration prior to cabling and implementation.
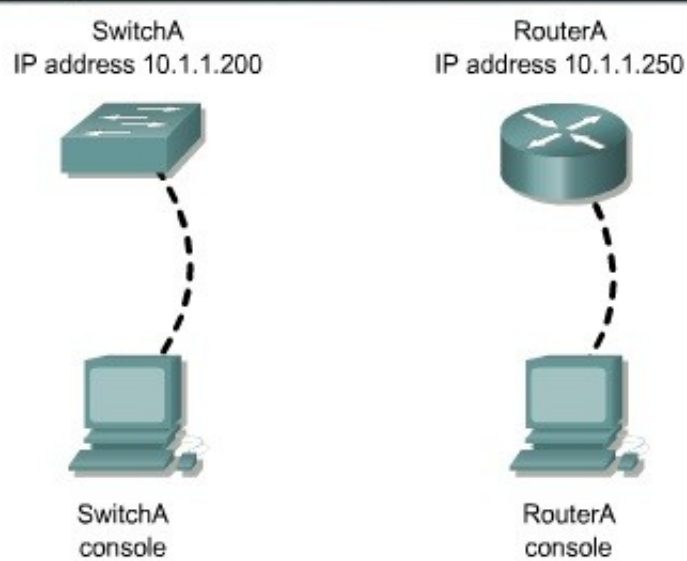
This task requires the use of various IOS commands to access and inspect the running configuration of RouterA and SwitchA. No configuration changes are necessary.

You will connect to RouterA and SwitchA via the console devices that are attached to each.

There are 4 multiple-choice questions with this task. Be sure to answer all of them before leaving this item. In order to score the maximum points you will need to have accessed both SwitchA and RouterA.

NOTE: The configuration command has been disabled for both the router and switch in this simulation.

Topology

SwitchA
IP address 10.1.1.200

RouterA
IP address 10.1.1.250

SwitchA
console

RouterA
console

Select three options which are security issues with the current configuration of SwitchA. (Choose three.)

A. Privilege mode is protected with an unencrypted password
B. Inappropriate wording in banner message
C. Virtual terminal lines are protected only by a password requirement
D. Both the username and password are weak
E. Telnet connections can be used to remotely manage the switch
F. Cisco user will be granted privilege level 15 by default

Answer: ABD

NEW QUESTION 252
An administrator has connected devices to a switch and, for security reasons, wants the dynamically learned MAC addresses from the address table added to the running configuration.
What must be done to accomplish this?

A. Enable port security and use the keyword sticky.
B. Set the switchport mode to trunk and save the running configuration.
C. Use the switchport protected command to have the MAC addresses added to the configuration.
D. Use the no switchport port-security command to allow MAC addresses to be added to the configuration.

Answer: A

Explanation: http://www.cisco.com/en/US/docs/switches/lan/catalyst6500/ios/12.2SX/configuration/guide /port_sec.pdf
One can configure MAC addresses to be sticky. These can be dynamically learned or manually configured, stored in the address table, and added to the running configuration. If these addresses are saved in the configuration file, the interface does not need to dynamically relearn them when the switch restarts, hence enabling security as desired.

NEW QUESTION 253

Instructions _ □

You can click on the grey buttons below to view the different windows.

Each of the windows can be minimized by clicking on the [-]. You can also reposition a window by dragging it by the title bar.

The "Tab" key and most commands that use the "Control" or "Escape" keys are not supported and are not necessary to complete this simulation.
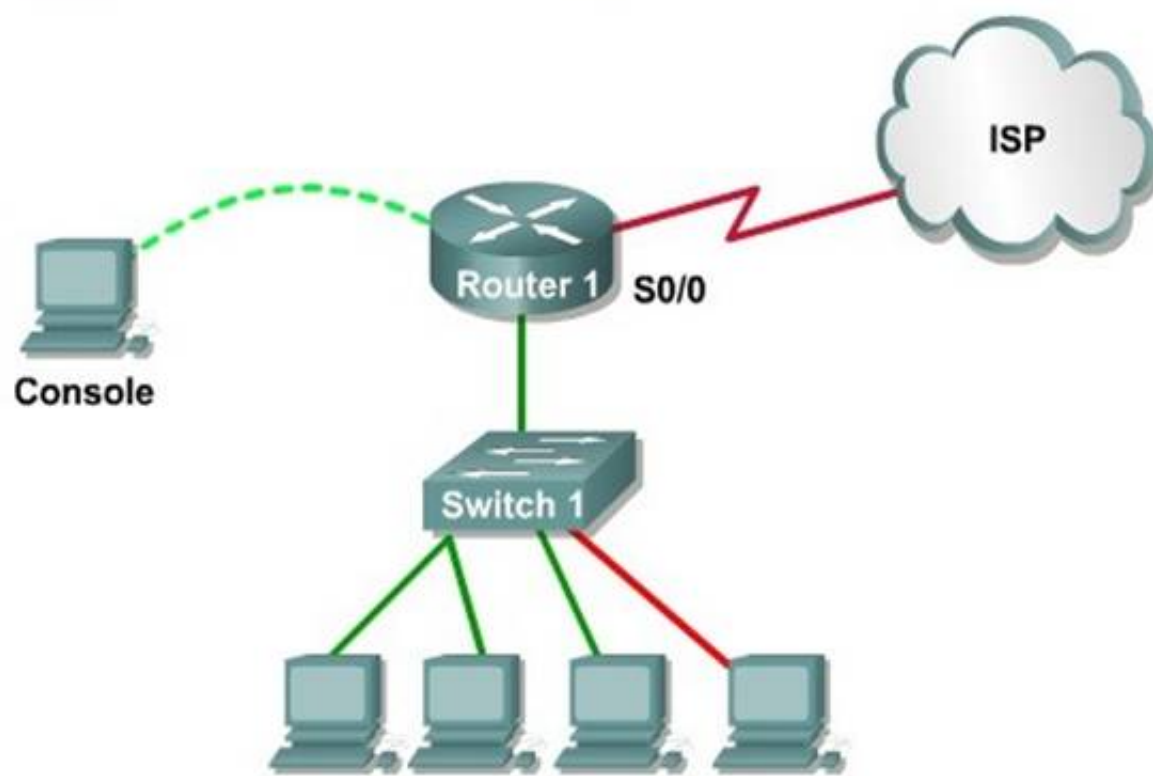
Scenario _ □

This task requires the use of various **show** commands from the CLI of Router1 to answer four multiple-choice questions. This task does **not** require any configuration.

NOTE: The show running-configuration and the show startup-configuration commands have been disabled in this simulation.

To access the multiple-choice questions, click on the numbered boxes on the right of the top panel.

There are 4 multiple-choice questions with this task. Be sure to answer all 4 questions before leaving this item.

Topology _ □

R1 _

```
Press RETURN to get started!
Router1>
```

Including the address on the Routed Ethernet interface, how many hosts can have IP addresses on the LAN to which Routed is connected?

A. 6
B. 30
C. 62
D. 126

Answer: A

Explanation: This is a /29 address, so there are 6 usable IP's on this subnet.

NEW QUESTION 258
DRAG DROP
Drag the appropriate command on the left to the configuration task it accomplishes. (Not all options are used.)
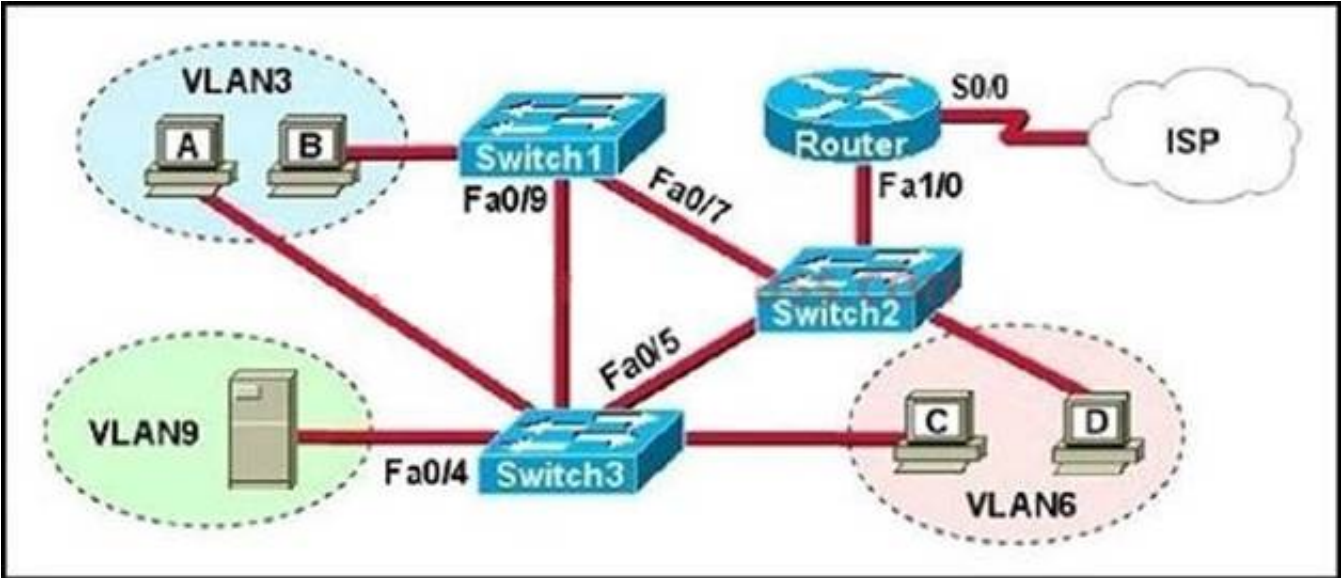
Drag the appropriate command on the left to the configuration task it accomplishes. (Not all options are used.)	
login password cantCome1n	encrypt all clear text passwords
enable password uwi11NeverNo	protect access to the user mode prompt
service password-encryption	set privileged mode encrypted password
line console 0 password friendS0nly	set password to allow Telnet connections
enable secret noWay1n4u	set privileged mode clear text password
line vty 0 4 password 2hard2Guess	

Answer:

Explanation:

Drag the appropriate command on the left to the configuration task it accomplishes. (Not all options are used.)	
login password cantCome1n	service password-encryption
enable password uwi11NeverNo	line console 0 password friendS0nly
service password-encryption	enable secret noWay1n4u
line console 0 password friendS0nly	line vty 0 4 password 2hard2Guess
enable secret noWay1n4u	enable password uwi11NeverNo
line vty 0 4 password 2hard2Guess	

NEW QUESTION 261
Refer to the exhibit.

A problem with network connectivity has been observed. It is suspected that the cable connected to switch port Fa0/9 on Switch1 is disconnected. What would be
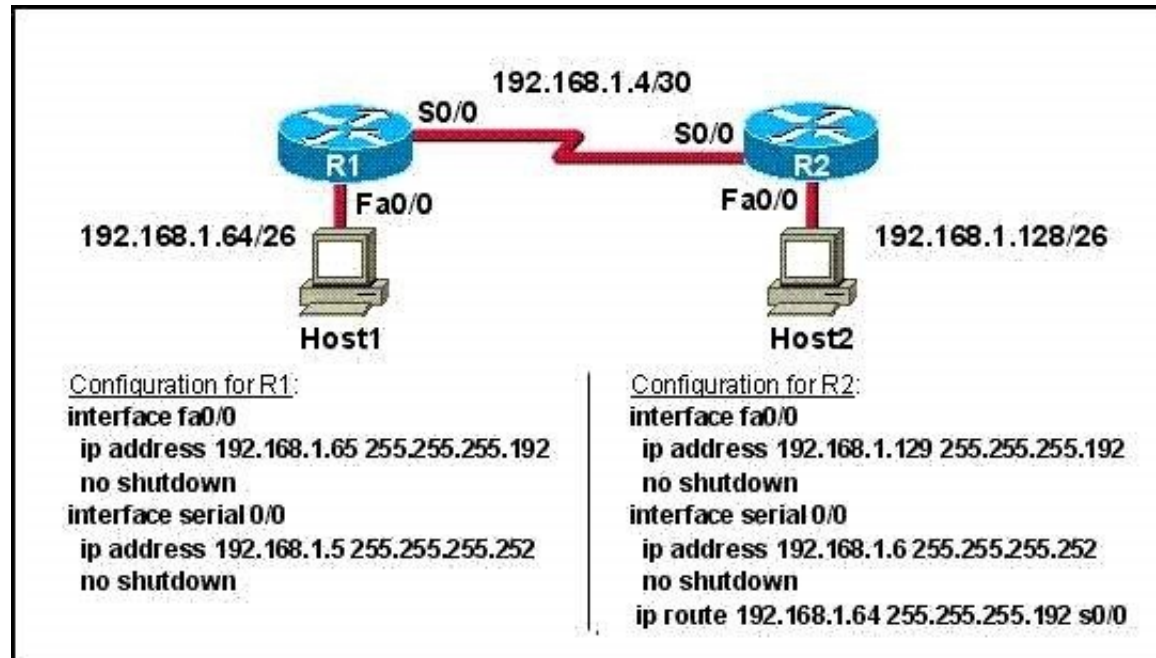
an effect of this cable being disconnected?

A. Host B would not be able to access the server in VLAN9 until the cable is reconnected.
B. Communication between VLAN3 and the other VLANs would be disabled.
C. The transfer of files from Host B to the server in VLAN9 would be significantly slower.
D. For less than a minute, Host B would not be able to access the server in VLAN9. Then normal network function would resume.

Answer: D

Explanation: Because Switch1 has multiple redundant links in this network, traffic would not work for less than a minute, and then it would get rerouted along the longer path to the host. The 1 minute outage would be the length of time it takes STP to converge.

NEW QUESTION 265
Refer to the exhibit.

A technician pastes the configurations in the exhibit into the two new routers shown. Otherwise, the routers are configured with their default configurations.
A ping from Host1 to Host 2 fails, but the technician is able to ping the S0/0 interface of R2 from Host 1. The configurations of the hosts have been verified as correct. What could be the cause of the problem?

A. The serial cable on R1 needs to be replaced.
B. The interfaces on R2 are not configured properly
C. R1 has no route to the 192.168.1.128 network.
D. The IP addressing scheme has overlapping subnetworks.
E. The ip subnet-zero command must be configured on both routers.

Answer: C

Explanation: Without a static route pointing to the host 2 network the router R1 is unaware of the path to take to reach that network and reply traffic cannot be sent.

NEW QUESTION 266
Refer to the exhibit.

Why was this message received?

A. No VTY password has been set.
B. No enable password has been set.
C. No console password has been set.
D. No enable secret password has been set.
E. The login command has not been set on CON 0
F. The login command has not been set on the VTY ports.

Answer: A

Explanation: Your CCNA certification exam is likely going to contain questions about Telnet, an application-level protocol that allows remote communication between two networking devices. With Telnet use being as common as it is, you had better know the details of how to configure it in order to pass your CCNA exam and to work in real-world networks.
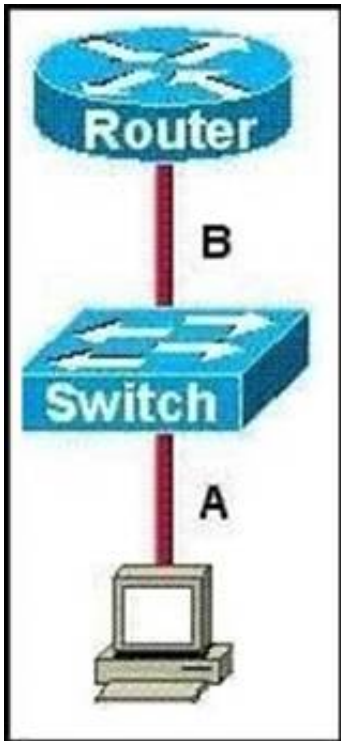The basic concept is pretty simple - we want to configure R1, but we're at R2. If we telnet successfully to R1, we will be able to configure R1 if we've been given the proper permission levels. In this CCNA case study, R2 has an IP address of 172.12.123.2 and R1 an address of 172.12.123.1. Let's try to telnet from R2 to R1.
R2#telnet 172.12.123.1

Trying 172.12.123.1 ... Open Password required, but none set
[Connection to 172.12.123.1 closed by foreign host]
This seems like a problem, but it's a problem we're happy to have. ACisco router will not let any user telnet to it by default. That's a good thing, because we don't want just anyone connecting to our router! The "password required" message means that no password has been set on the VTY lines on R1. Let's do so now.
R1(config)#line vty 0 4
R1(config-line)#password baseball
A password of "baseball" has been set on the VTY lines, so we shouldn't have any trouble using Telnet to get from R2 to R1. Let's try that now.
R2#telnet 172.12.123.1
Trying 172.12.123.1 ... Open User Access Verification Password:
R1>
We're in, and placed into user exec mode. Reference:
http://www.mcmcse.com/cisco/guides/telnet_passwords_and_privilege_levels.shtml

NEW QUESTION 270
Refer to the exhibit.

The two connected ports on the switch are not turning orange or green. What would be the most effective steps to troubleshoot this physical layer problem? (Choose three.)

A. Ensure that the Ethernet encapsulations match on the interconnected router and switch ports.
B. Ensure that cables A and B are straight-through cables.
C. Ensure cable A is plugged into a trunk port.
D. Ensure the switch has power.
E. Reboot all of the devices.
F. Reseat all cables.

Answer: BDF

Explanation: The ports on the switch are not up indicating it is a layer 1 (physical) problem so we should check cable type, power and how they are plugged in.

NEW QUESTION 275
The network administrator has found the following problem.


```
Central# debug ip rip

<some output text omitted>

Central#debug ip rip
1d00h: RIP: received v1 update from 172.16.100.2 on Serial0/0
1d00h:     172.16.10.0 in 1 hops
1d00h:     172.16.20.0 in 1 hops
1d00h:     172.16.30.0 in 1 hops

Central# show ip route

Gateway of last resort is not set

     172.16.0.0/24 is subnetted, 8 subnets
C       172.16.150.0 is directly connected, FastEthernet0/0
C       172.16.220.0 is directly connected, Loopback2
C       172.16.210.0 is directly connected, Loopback1
C       172.16.200.0 is directly connected, Loopback0
R       172.16.30.0 [120/1] via 172.16.100.2, 00:00:07, Serial0/0
S       172.16.20.0 [1/0] via 172.16.150.15
R       172.16.10.0 [120/1] via 172.16.100.2, 00:00:07, Serial0/0
C       172.16.100.0 is directly connected, Serial0/0
```

The remote networks 172.16.10.0, 172.16.20.0, and 172.16.30.0 are accessed through the Central router's serial 0/0 interface. No users are able to access

172.16.20.0. After reviewing the command output shown in the graphic, what is the most likely cause of the problem?
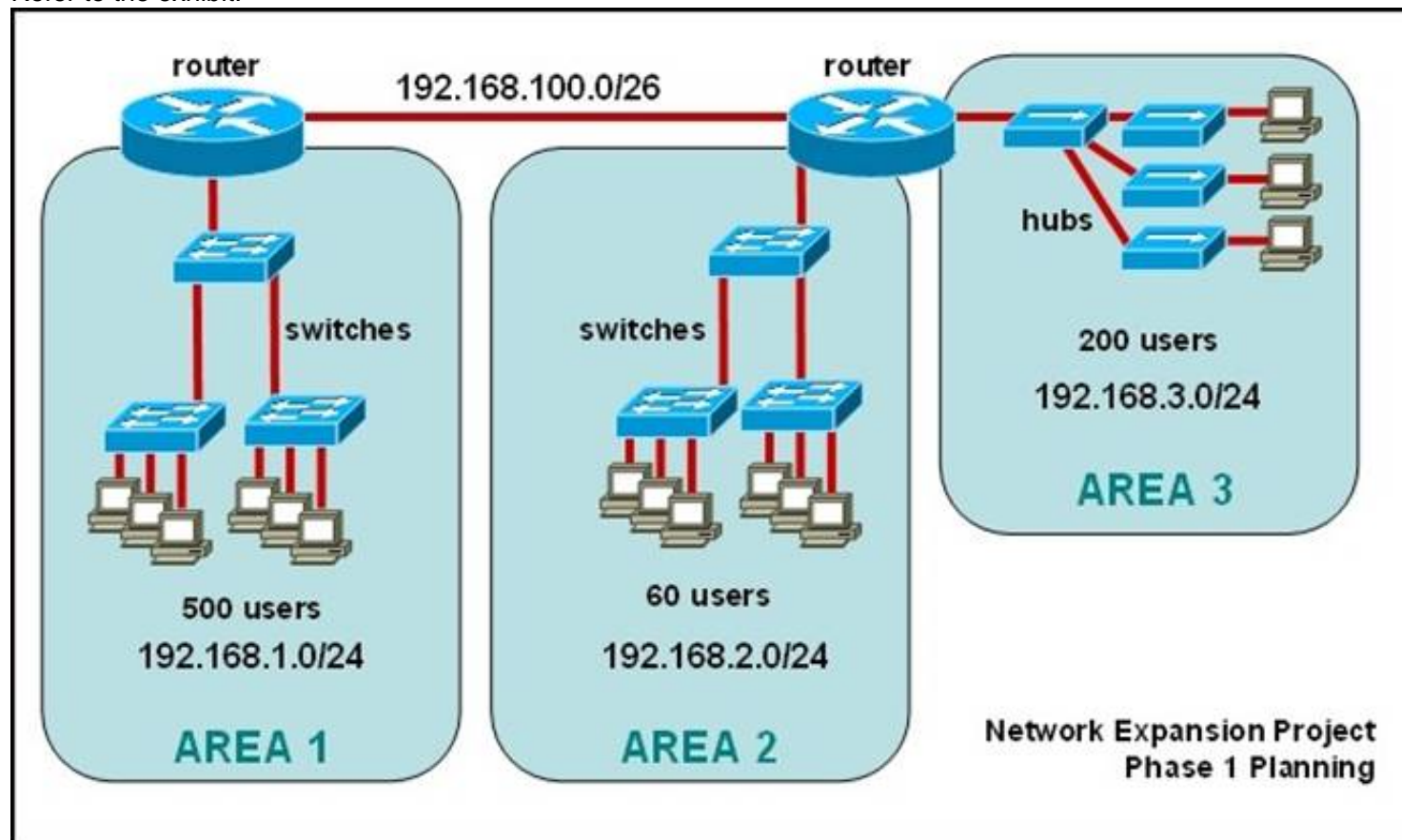
A. no gateway of last resort on Central
B. Central router's not receiving 172.16.20.0 update
C. incorrect static route for 172.16.20.0
D. 172.16.20.0 not located in Central's routing table

Answer: C

Explanation: If we use 172.16.20.0 to route to 172.16.150.15, then the packet will route back. To clear this error we have to use #no ip route 172.16.20.0
255.255.255.0 172.16.150.15
command in configuration mode.

NEW QUESTION 276
Refer to the exhibit.

The junior network support staff provided the diagram as a recommended configuration for the first phase of a four-phase network expansion project. The entire network expansion will have over 1000 users on 14 network segments and has been allocated this IP address space.

Answer:

NEW QUESTION 280
168.1.1 through 192.168.5.255
192.168.100.1 through 192.168.100.255
What are three problems with this design? (Choose three.)

A. The AREA 1 IP address space is inadequate for the number of users.
B. The AREA 3 IP address space is inadequate for the number of users.
C. AREA 2 could use a mask of /25 to conserve IP address space.
D. The network address space that is provided requires a single network-wide mask.
E. The router-to-router connection is wasting address space.
F. The broadcast domain in AREA 1 is too large for IP to function.

Answer: ACE

Explanation: Do a "show ip int brief" and you will see that Fa0/1 has an IP address assigned, but it is shut down.

NEW QUESTION 282
What is the purpose of the switchport command?
Switch(config-if)# switchport port-security maximum 1
Switch(config-if)# switchport port-security mac-address 0018.DE8B.4BF8

A. It ensures that only the device with the MAC address 0018.DE8B.4BF8 will be able to connect to the port that is being configured.
B. It informs the switch that traffic destined for MAC address 0018.DE8B.4BF8 should only be sent to the port that is being configured.
C. It will act like an access list and the port will filter packets that have a source or destination MAC of 0018.DE8B.4BF8.
D. The switch will shut down the port of any traffic with source MAC address of 0018.DE8B.4BF8.

Answer: A

Explanation: The first command configurs the maximum number of secure MAC addresses on a port to one. The next command specifies that MAC addresses that are allowed with port security; in this case it is just the one single device MAC. If any other device connects on that port the port will be shut down by the port security feature.

NEW QUESTION 284
CORRECT TEXT

Answer:

Explanation: Router>enable
Router#config terminal
Router(config)#hostname Apopka
2) Enable-secret password (cisco10):
Apopka(config)#enable secret cisco10
3) Set the console password to RouterPass:
Apopka(config)#line console 0
Apopka(config-line)#password RouterPass
Apopka(config-line)#login
Apopka(config-line)#exit
4) Set the Telnet password to scan90:
Apopka(config)#line vty 0 4
Apopka(config-line)#password scan90
Apopka(config-line)#login
Apopka(config-line)#exit
5) Configure Ethernet interface (on the right) of router Apopka:
The subnet mask of the Ethernet network 209.165.201.0 is 27. From this subnet mask, we can find out the increment by converting it into binary form, that is /27 = 1111 1111.1111 1111.1111 1111.1110 0000. Pay more attention to the last bit 1 because it tells us the increment, using the formula:
Increment = 2place of the last bit 1 (starts counting from 0,from right to left), in this case increment = 25 = 32. Therefore:
Increment: 32
Network address: 209.165.201.0
Broadcast address: 209.165.201.31 (because 209.165.201.32 is the second subnetwork, so the previous IP - 209.165.201.31 - is the broadcast address of the first subnet).
-> The second assignable host address of this subnetwork is 209.165.201.2/27 Assign the second assignable host address to Fa0/0 interface of Apopka router:
Apopka(config)#interface Fa0/0
Apopka(config-if)#ip address 209.165.201.2 255.255.255.224 Apopka(config-if)#no shutdown
Apopka(config-if)#exit
6) Configure Serial interface (on the left) of router Apopka:
Using the same method to find out the increment of the Serial network: Serial network 192.0.2.128/28:
Increment: 16 (/28 = 1111 1111.1111 1111.1111 1111.1111 0000)
Network address: 192.0.2.128 (because 8 * 16 = 128 so 192.0.2.128 is also the network address of this subnet)
Broadcast address: 192.0.2.143
-> The last assignable host address in this subnet is 192.0.2.142/28.
Assign the last assignable host address to S0/0/0 interface of Apopka router: Apopka(config)#interface S0/0/0 (or use interface S0/0 if not successful)
Apopka(config-if)#ip address 192.0.2.142 255.255.255.240
Apopka(config-if)#no shutdown Apopka(config-if)#exit
7) Configure RIP v2 routing protocol: Apopka(config)#router rip Apopka(config-router)#version 2
Apopka(config-router)#network 209.165.201.0
Apopka(config-router)#network 192.0.2.128 Apopka(config-router)#end
Save the configuration:
Apopka#copy running-config startup-config
Finally, you should use the ping command to verify all are working properly!
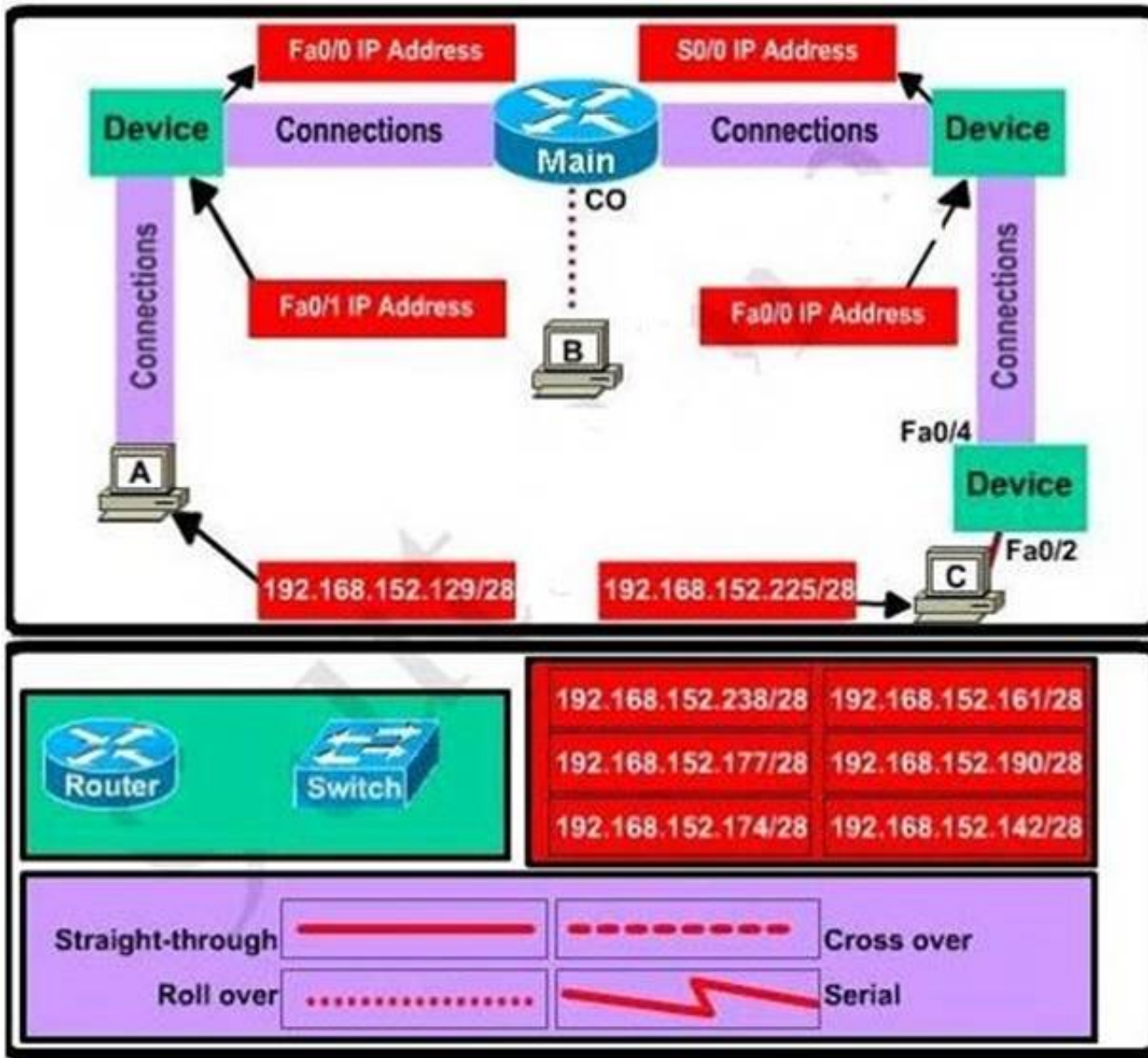
NEW QUESTION 289
CORRECT TEXT

This topology contains 3 routers and 1 switch. Complete the topology.
Drag the appropriate device icons to the labeled Device
Drag the appropriate connections to the locations labeled Connections. Drag the appropriate IP addresses to the locations labeled IP address
(Hint: use the given host addresses and Main router information) To remove a device or connection, drag it away from the topology.
Use information gathered from the Main router to complete the configuration of any additional routers.
No passwords are required to access the Main router. The config terminal command has been disabled for the HQ router. The router does not require any configuration.

Configure each additional router with the following:
Configure the interfaces with the correct IP address and enable the interfaces. Set the password to allow console access to consolepw
Set the password to allow telnet access to telnetpw
Set the password to allow privilege mode access to privpw
Not E: Because routes are not being added to the configurations, you will not be able to ping through the internetwork.
All devices have cable autosensing capabilities disabled. All hosts are PC's

Answer:

Explanation: Specify appropriate devices and drag them on the "Device" boxes
For the device at the bottom-right box, we notice that it has 2 interfaces Fa0/2 and Fa0/4; moreover the link connects the PC on the right with the device on the bottom-right is a straight-through link -> it is a switch
The question stated that this topology contains 3 routers and 1 switch -> two other devices are routers
Place them on appropriate locations as following:
(Host D and host E will be automatically added after placing two routers. Click on them to access neighboring routers)
Specify appropriate connections between these devices:
+ The router on the left is connected with the Main router through FastEthernet interfaces: use a crossover cable
+ The router on the right is connected with the Main router through Serial interfaces: use a serial cable
+ The router on the right and the Switch: use a straight-through cable
+ The router on the left and the computer: use a crossover cable
(To remember which type of cable you should use, follow these tips:
- To connect two serial interfaces of 2 routers we use serial cable
- To specify when we use crossover cable or straight-through cable, we should remember:
Group 1: Router, Host, Server
Group 2: Hub, Switch
One device in group 1 + One device in group 2: use straight-through cable
Two devices in the same group: use crossover cable
For example, we use straight-through cable to connect switch to router, switch to host, hub to host, hub to server... and we use crossover cable to connect switch to switch, switch to hub, router to router, host to host.)
Assign appropriate IP addresses for interfaces:
From Main router, use show running-config command.
(Notice that you may see different IP addresses in the real CCNA exam, the ones shown above are just used for demonstration)
From the output we learned that the ip address of Fa0/0 interface of the Main router is 192.168.152.177/28. This address belongs to a subnetwork which has:
Increment: 16 (/28 = 255.255.255.240 or 1111 1111.1111 1111.1111 1111.1111 0000)
Network address: 192.168.152.176 (because 176 = 16 * 11 and 176 < 177)
Broadcast address: 192.168.152.191 (because 191 = 176 + 16 - 1)
And we can pick up an ip address from the list that belongs to this subnetwork:
192.168.152.190 and assign it to the Fa0/0 interface the router on the left
Use the same method for interface Serial0/0 with an ip address of 192.168.152.161 Increment: 16
Network address: 192.168.152.160 (because 160 = 16 * 10 and 160 < 161)

Broadcast address: 192.168.152.175 (because 176 = 160 + 16 - 1)
-> and we choose 192.168.152.174 for Serial0/0 interface of the router on the right Interface Fa0/1 of the router on the left
IP (of the computer on the left) : 192.168.152.129/28 Increment: 16
Network address: 192.168.152.128 (because 128 = 16 * 8 and 128 < 129)
Broadcast address: 192.168.152.143 (because 143 = 128 + 16 - 1)
-> we choose 192.168.152.142 from the list Interface Fa0/0 of the router on the right
IP (of the computer on the left) : 192.168.152.225/28 Increment: 16
Network address: 192.168.152.224 (because 224 = 16 * 14 and 224 < 225)
Broadcast address: 192.168.152.239 (because 239 = 224 + 16 - 1)
-> we choose 192.168.152.238 from the list
Let's have a look at the picture below to summarize
Configure two routers on the left and right with these commands: Router1 = router on the left
Assign appropriate IP addresses to Fa0/0 & Fa0/1 interfaces: Router1>enable
Router1#configure terminal Router1(config)#interface fa0/0
Router1(config-if)#ip address 192.168.152.190 255.255.255.240 Router1(config-if)#no shutdown
Router1(config-if)#interface fa0/1
Router1(config-if)#ip address 192.168.152.142 255.255.255.240 Router1(config-if)#no shutdown
Set passwords (configure on two routers)
+ Console password: Router1(config-if)#exit Router1(config)#line console 0
Router1(config-line)#password consolepw Router1(config-line)#login
Router1(config-line)#exit
+ Telnet password: Router1(config)#line vty 0 4 Router1(config-line)#password telnetpw Router1(config-line)#login Router1(config-line)#exit
+ Privilege mode password: Router1(config)#enable password privpw Save the configuration: Router1(config)#exit
Router1#copy running-config startup-config
Configure IP addresses of Router2 (router on the right) Router2>enable
Router2#configure terminal Router2(config)#interface fa0/0
Router2(config-if)#ip address 192.168.152.238 255.255.255.240 Router2(config-if)#no shutdown
Router2(config-if)#interface serial0/0
Router2(config-if)#ip address 192.168.152.174 255.255.255.240 Router2(config-if)#no shutdown
Then set the console, telnet and privilege mode passwords for Router2 as we did for Router1, remember to save the configuration when you finished.

Topic 7, Mix Questions A

NEW QUESTION 294
Configuration of which option is required on a Cisco switch for the Cisco IP phone to work?

A. PortFast on the interface
B. the interface as an access port to allow the voice VLAN ID
C. a voice VLAN ID in interface and global configuration mode
D. Cisco Discovery Protocol in global configuration mode

Answer: B

Explanation: When you connect an IP phone to a switch using a trunk link, it can cause high CPU utilization in the switches. As all the VLANs for a particular interface are trunked to the phone, it increases the number of STP instances the switch has to manage. This increases the CPU utilization. Trunking also causes unnecessary broadcast / multicast / unknown unicast traffic to hit the phone link.
In order to avoid this, remove the trunk configuration and keep the voice and access VLAN configured along with Quality of Service (QoS). Technically, it is still a trunk, but it is called a Multi-VLAN Access Port (MVAP). Because voice and data traffic can travel through the same port, you should specify a different VLAN for each type of traffic. You can configure a switch port to forward voice and data traffic on different VLANs. Configure IP phone ports with a voice VLAN configuration. This configuration creates a pseudo trunk, but does not require you to manually prune the unnecessary VLANs.
The voice VLAN feature enables access ports to carry IP voice traffic from an IP phone. You can configure a voice VLAN with the "switchport voice vlan …" command under interface mode. The full configuration is shown below:
Switch(config)#interface fastethernet0/1 Switch(config-if)#switchport mode access Switch(config-if)#switchport access vlan 10 Switch(config-if)#switchport voice vlan 20 Reference:
http://www.cisco.com/c/en/us/support/docs/switches/catalyst-4500-series-switches/69632-configuring-cat-ip-ph
Configure the Switch Port to Carry Both Voice and Data Traffic
When you connect an IP phone to a switch using a trunk link, it can cause high CPU utilization in the switches. As all the VLANs for a particular interface are trunked to the phone, it increases the number of STP instances the switch has to manage. This increases the CPU utilization. Trunking also causes unnecessary broadcast / multicast / unknown unicast traffic to hit the phone link.
In order to avoid this, remove the trunk configuration and keep the voice and access VLAN configured along with Quality of Service (QoS). Technically, it is still a trunk, but it is called a Multi-VLAN Access Port (MVAP). Because voice and data traffic can travel through the same port, you should specify a different VLAN for each type of traffic. You can configure a switch port to forward voice and data traffic on different VLANs. Configure IP phone ports with a voice VLAN configuration. This configuration creates a pseudo trunk, but does not require you to manually prune the unnecessary VLANs.
The voice VLAN feature enables access ports to carry IP voice traffic from an IP phone. The voice VLAN feature is disabled by default. The Port Fast feature is automatically enabled when voice VLAN is configured. When you disable voice VLAN, the Port Fast feature is not automatically disabled.

NEW QUESTION 297
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