# Cisco 640-822


## Interconnecting Cisco Networking Devices Part 1

**Version: 12.0**

**Topic 1, Multiple Choice Questions Set A**

**QUESTION NO: 1**

Which OSI layer header contains the address of a destination host that is on another network?

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

**Answer: D**
**Explanation:**

**QUESTION NO: 2**

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: B,D**
**Explanation:**

**QUESTION NO: 3**

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:**

**QUESTION NO: 4**

Refer to the exhibit.

```
R1#sh int ser0/1
Serial0/1 is up, line protocol is down
  Hardware is GT96K Serial
  Internet address is 192.1.1.1/30
  MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
```

```
R2#sh int serial 0/1
Serial0/1 is up, line protocol is down
  Hardware is GT96K Serial
  Internet address is 192.1.1.2/30
  MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
```

A network technician is unable to ping from R1 to R2. What will help correct the problem?

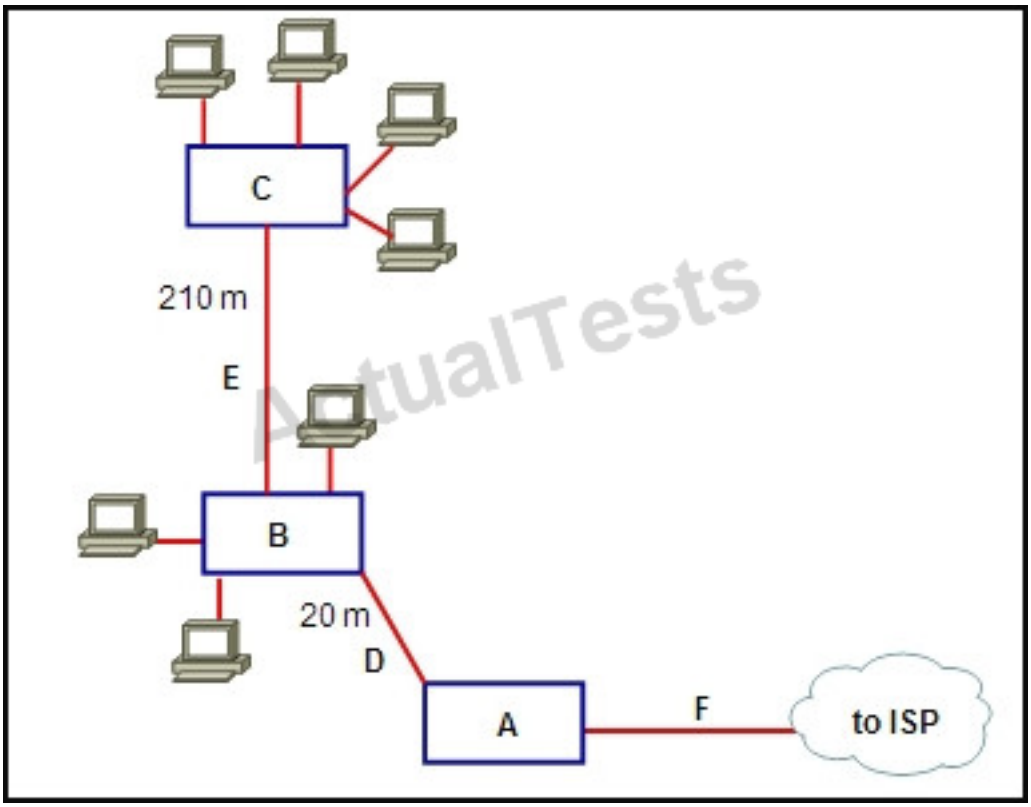
**A.** Ensure that the serial cable is correctly plugged in to the interfaces.
**B.** Apply the clock rate 56000 configuration command to the serial0/1 interface of R1.
**C.** Configure the serial0/1 interfaces on R1 and R2 with the no shutdown command.
**D.** Change the address of the serial0/1 interface of R1 to 192.1.1.4.
**E.** Change the subnet masks of both interfaces to 255.255.255.240.

**Answer: A**

**Explanation:**

**QUESTION NO: 5**

Refer to the exhibit.




Which types of devices and connections are needed to complete the LAN for optimal performance and cost efficiency?

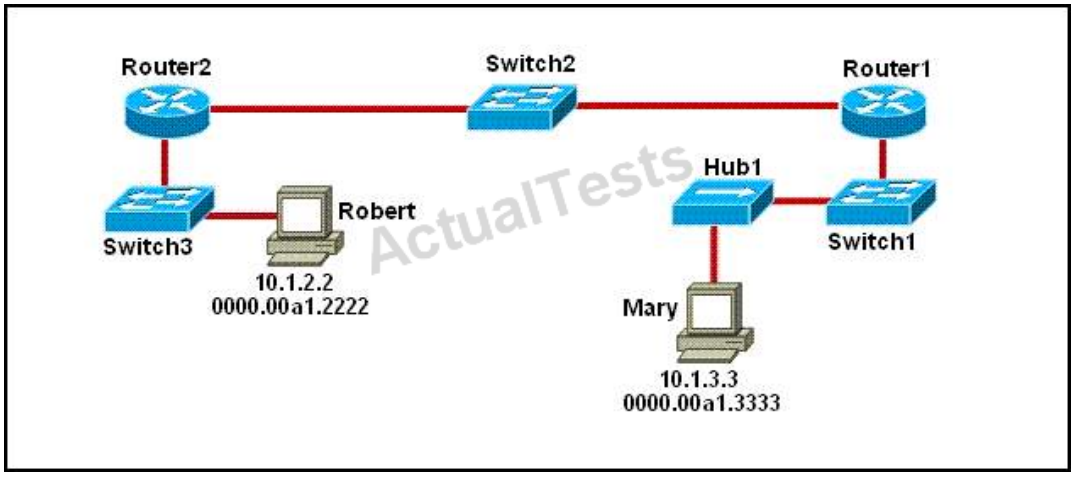
**A.**
A) router
B) hub
C) switch
D) UTP cable
E) fiber connection
F) fiber connection
**B.**
A) switch
B) switch
C) switch
D) UTP cable
E) fiber connection
F) T-1 connection
**C.**
A) router
B) switch
C) router
D) fiber connection
E) Cat5 cable
F) T-1 connection
**D.**

A) router
B) switch
C) switch
D) UTP cable
E) fiber connection
F) T-1 connection
**E.**
A) router
B) hub
C) switch
D) fiber cable
E) cat5 cable
F) T-1 connection

**Answer: D**
**Explanation:**

**QUESTION NO: 6**

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.)

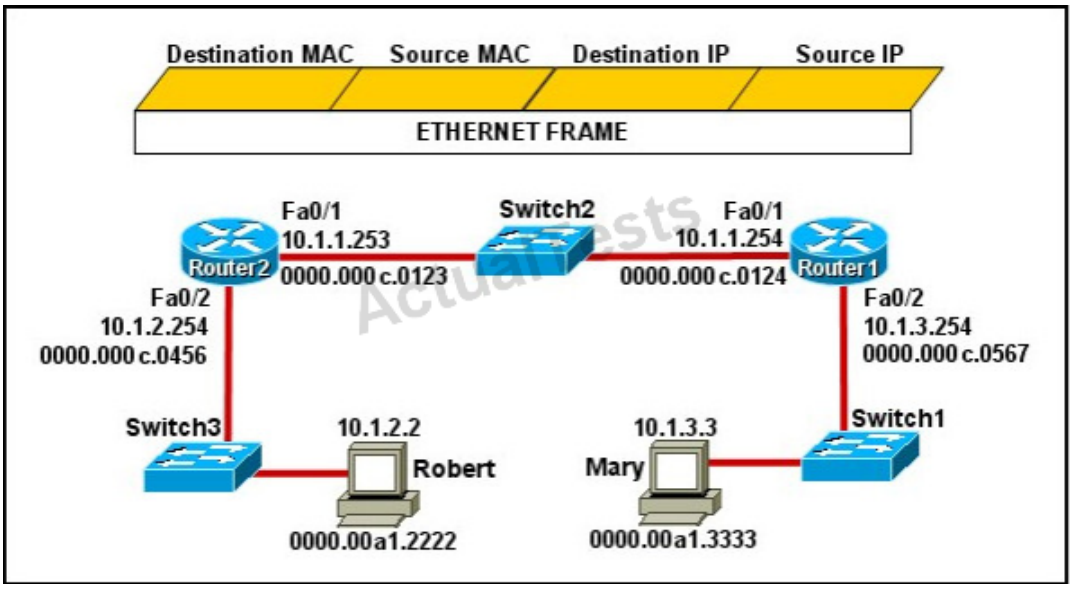
**A.** Hub1
**B.** Switch1
**C.** Router1
**D.** Switch2
**E.** Router2
**F.** Switch3

**Answer: B,D,F**

**Explanation:**

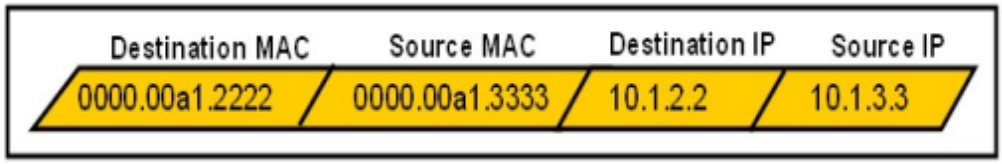
**QUESTION NO: 7**

Refer to the exhibit.

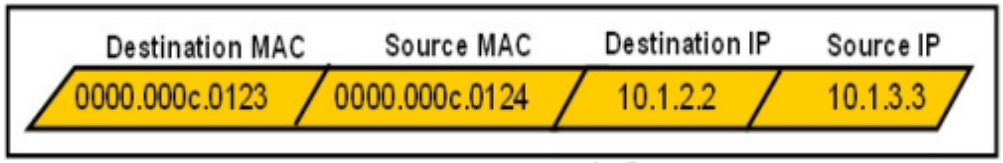



Mary is sending an instant message to Robert. The message will be broken into a series of packets that will traverse all network devices. What addresses will populate these packets as they are forwarded from Router1 to Router2?

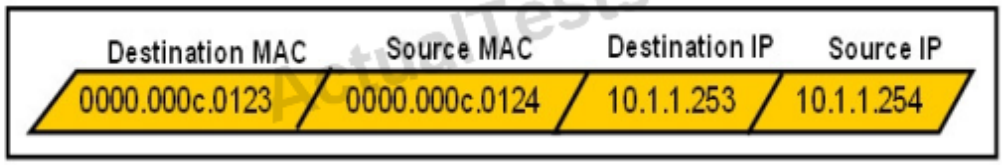
A.



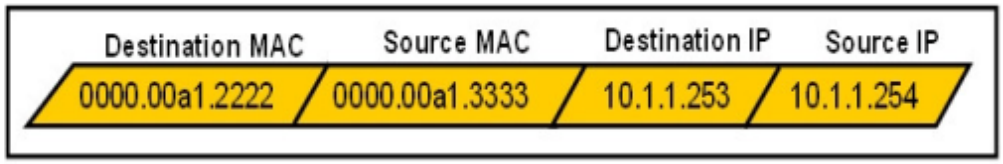

B.



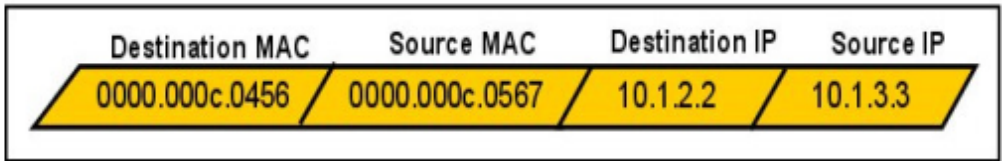

C.




D.




E.



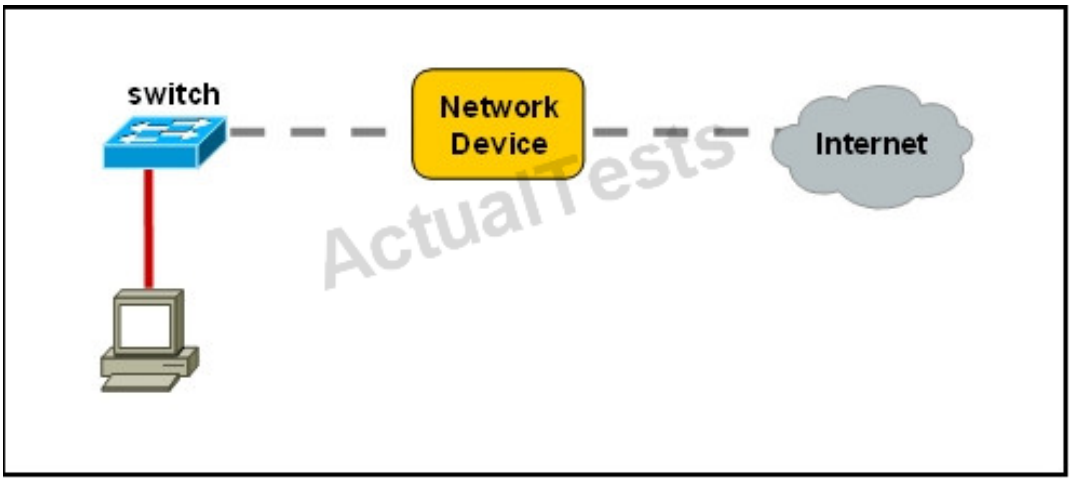

**A.** Exhibit A
**B.** Exhibit B
**C.** Exhibit C
**D.** Exhibit D
**E.** Exhibit E

**Answer: B**

**Explanation:**

**QUESTION NO: 8**

Refer to the exhibit.




A network device needs to be installed in the place of the icon labeled Network Device to accommodate a leased line attachment to the Internet. Which network device and interface configuration meets the minimum requirements for this installation?

**A.** a router with two Ethernet interfaces
**B.** a switch with two Ethernet interfaces
**C.** a router with one Ethernet and one serial interface
**D.** a switch with one Ethernet and one serial interface
**E.** a router with one Ethernet and one modem interface

**Answer: C**
**Explanation:**

**QUESTION NO: 9**

What technology should be used when a router that connects to a LAN has only one WAN interface, but multiple virtual circuits are needed?

**A.** ATM
**B.** DSL
**C.** ADSL
**D.** Cable
**E.** Frame Relay

**Answer: E**
**Explanation:**

**QUESTION NO: 10**

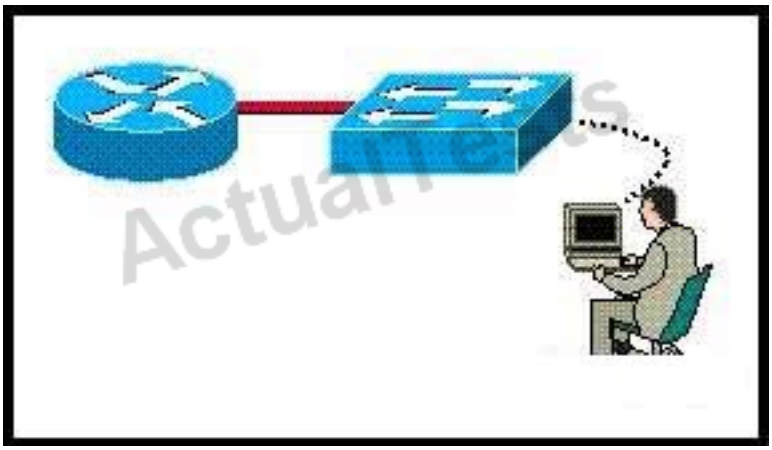
The network manager states, "The only UDP port allowed on this router interface is 53." From the statement, what can be concluded about traffic on the router interface?

**A.** DNS traffic is allowed.
**B.** RIP traffic is allowed.
**C.** SMTP traffic is allowed.
**D.** Telnet traffic is allowed.

**Answer: A**
**Explanation:**

**QUESTION NO: 11**

SW-C has just been added to the network shown in the graphic.



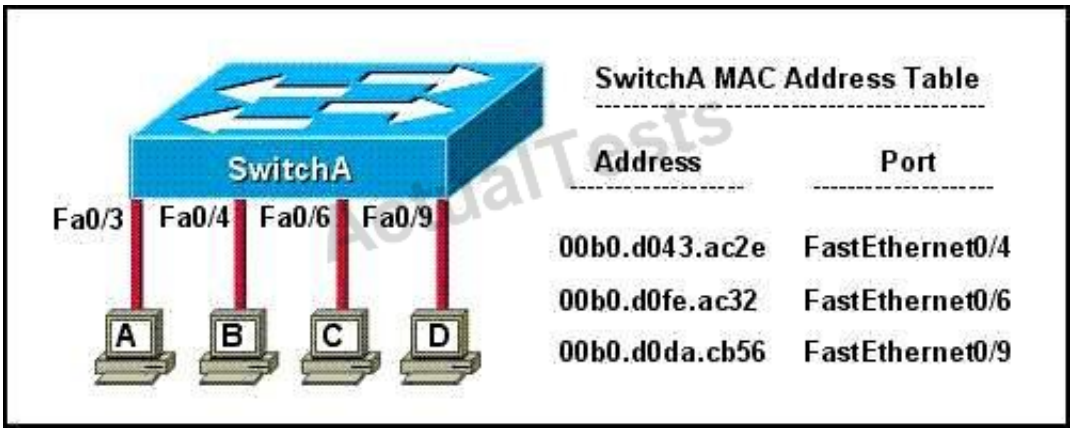
What is the purpose of assigning a default gateway to this switch?

**A.** allows connectivity to Router B from the switch prompt
**B.** allows console port connectivity to the switch from Host A
**C.** allows connectivity to remote network devices from Host B
**D.** allows the switch to pass traffic between Host A and Host B

**Answer: A**
**Explanation:**

**QUESTION NO: 12**

Refer to the topology and MAC address table shown in the exhibit.



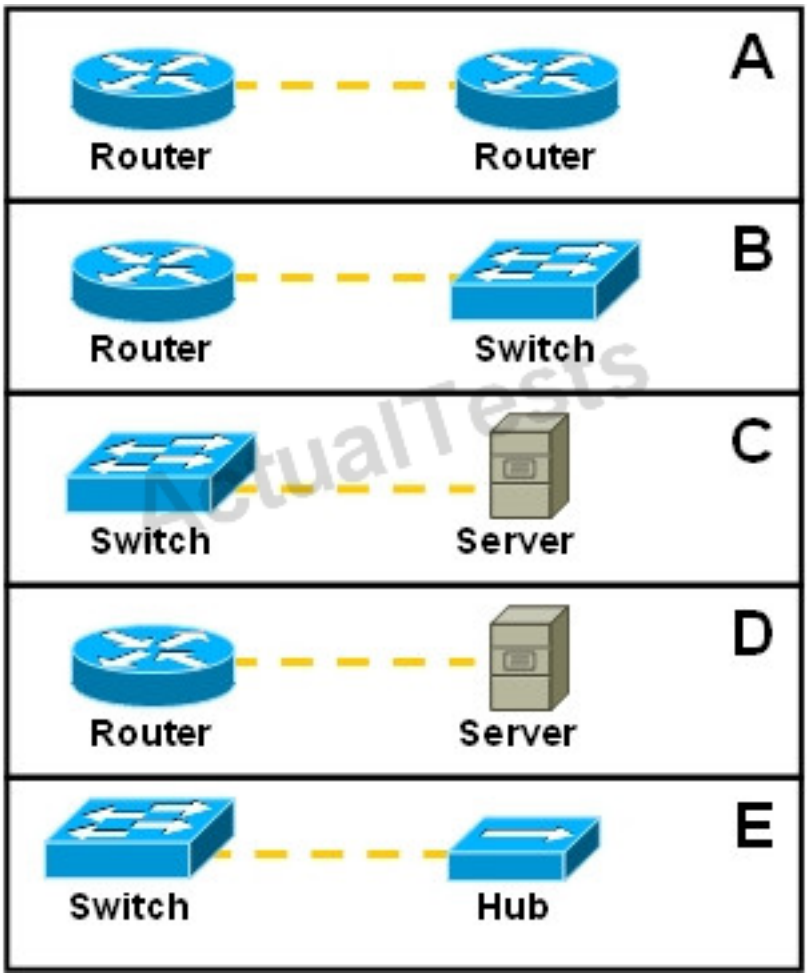

Host A sends a data frame to host D. What will the switch do when it receives the frame from host A?

**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:**

**QUESTION NO: 13**

Refer to the exhibits labeled A through E.




All devices are to be connected over Ethernet. Which three device-to-device configurations are likely to require the use of a crossover connection? (Choose three.)

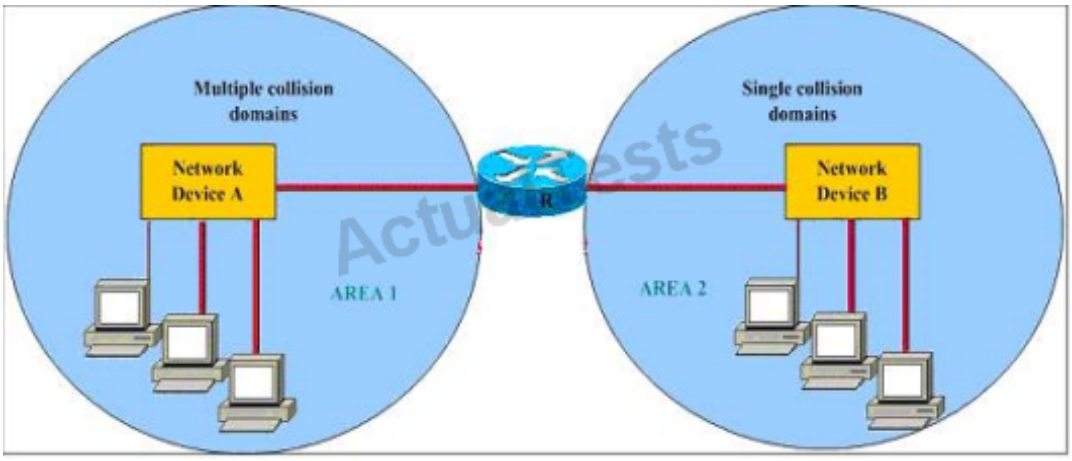
**A.** exhibit A
**B.** exhibit B
**C.** exhibit C
**D.** exhibit D
**E.** exhibit E

**Answer: A,D,E**

**Explanation:**

**QUESTION NO: 14**

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: A,D,E**

**Explanation:**

**QUESTION NO: 15**

An Ethernet cable is attached to a PC NIC and then attached to a switch port. The PC power is turned on and the switch port link LED turns green. The link light indicates what two conditions? (Choose two.)

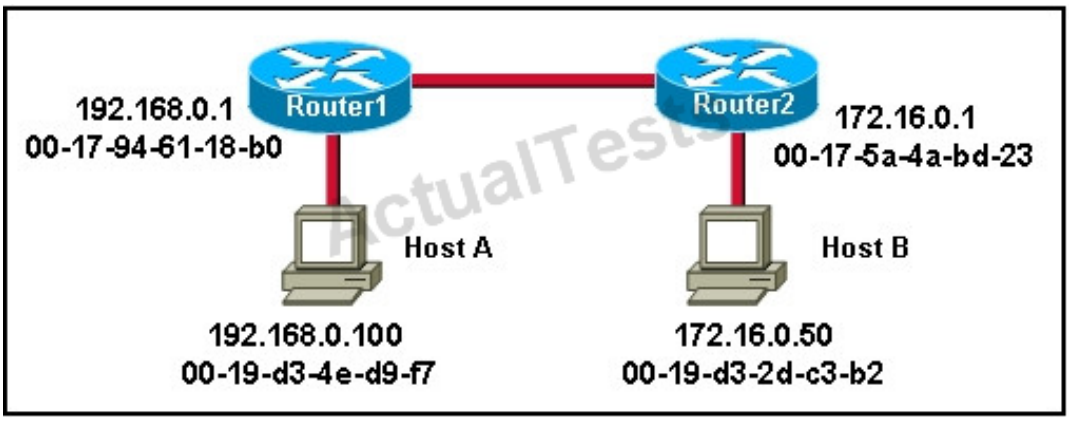
**A.** Layer 2 communication has been established between the PC and switch.
**B.** The PC has received a DHCP address.
**C.** Traffic is being sent from the switch to the PC.
**D.** If flashing, the green LED indicates port speed of 100 Mb/s.
**E.** The Layer 1 media is functioning between the PC and switch.
**F.** The switch port is functioning as a half-duplex connection.

**Answer: A,E**

**Explanation:**

**QUESTION NO: 16**

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:**

**QUESTION NO: 17**

Which protocol will a network host use to resolve a destination IPv4 address to a destination MAC address?

**A.** ARP
**B.** DHCP
**C.** DNS
**D.** RARP
**E.** WINS

**Answer: A**

**Explanation:**

**QUESTION NO: 18**

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:**

**QUESTION NO: 19**

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:**

**QUESTION NO: 20**

Which IP addresses are valid public Class A host addresses? Assume the default Class A subnet mask is in use. (Choose two.)

**A.** 10.154.16.87
**B.** 11.22.33.44
**C.** 68.95.255.100
**D.** 127.0.0.1
**E.** 128.16.89.72
**F.** 131.241.78.3

**Answer: B,C**
**Explanation:**

**QUESTION NO: 21**

A small company has a Class C network address and needs to create five subnets, each accommodating 25 hosts. Which subnet mask needs to be configured?

**A.** 255.255.240.0
**B.** 255.255.255.128
**C.** 255.255.255.192
**D.** 255.255.255.224
**E.** 255.255.255.240
**F.** 255.255.255.248

**Answer: D**
**Explanation:**

**QUESTION NO: 22**

What is the maximum number of bits that can be borrowed to create subnets if a Class B network address is being used?

**A.** 2
**B.** 6
**C.** 8
**D.** 14
**E.** 16

**Answer: D**
**Explanation:**

**QUESTION NO: 23**

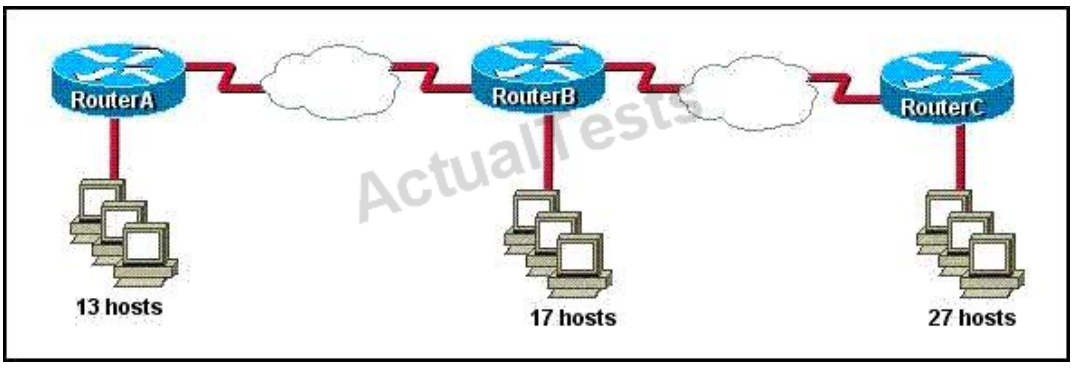
An administrator is working with the 192.168.4.0 network, which has been subnetted with a /26 mask. Which two addresses can be assigned to hosts within the same subnet? (Choose two.)

**A.** 192.168.4.61
**B.** 192.168.4.63
**C.** 192.168.4.67
**D.** 192.168.4.125
**E.** 192.168.4.128
**F.** 192.168.4.132

**Answer: C,D**
**Explanation:**

**QUESTION NO: 24**

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:**

**QUESTION NO: 25**

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:**

**QUESTION NO: 26**

A new LAN segment is allocated the network number 172.16.0.0/25. What range of addresses are available for hosts on that network?

**A.** 172.16.0.1 through 172.16.0.254
**B.** 172.16.0.1 through 172.16.0.126
**C.** 172.16.0.129 through 172.16.0.254
**D.** 172.16.0.1 through 172.16.1.254
**E.** 172.16.1.1 through 172.16.1.126
**F.** 172.16.1.1 through 172.16.1.254

**Answer: B**
**Explanation:**

**QUESTION NO: 27**

Which three network addresses are reserved for private network use? (Choose three.)

**A.** 10.0.0.0
**B.** 172.15.0.0
**C.** 172.31.0.0
**D.** 192.162.24.0
**E.** 192.168.255.0
**F.** 224.192.0.0

**Answer: A,C,E**

**Explanation:**

**QUESTION NO: 28**

Which two protocols does DNS use from the TCP/IP layer? (Choose two.)

**A.** ARP
**B.** ICMP
**C.** IP
**D.** SCTP
**E.** TCP
**F.** UDP

**Answer: E,F**

**Explanation:**

**QUESTION NO: 29**

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:**

**QUESTION NO: 30**

An administrator is in the process of changing the configuration of a router. What command will allow the administrator to check the changes that have been made prior to saving the new configuration?

**A.** Router# show startup-config
**B.** Router# show current-config
**C.** Router# show running-config
**D.** Router# show memory
**E.** Router# show flash
**F.** Router# show processes

**Answer: C**
**Explanation:**

**QUESTION NO: 31**

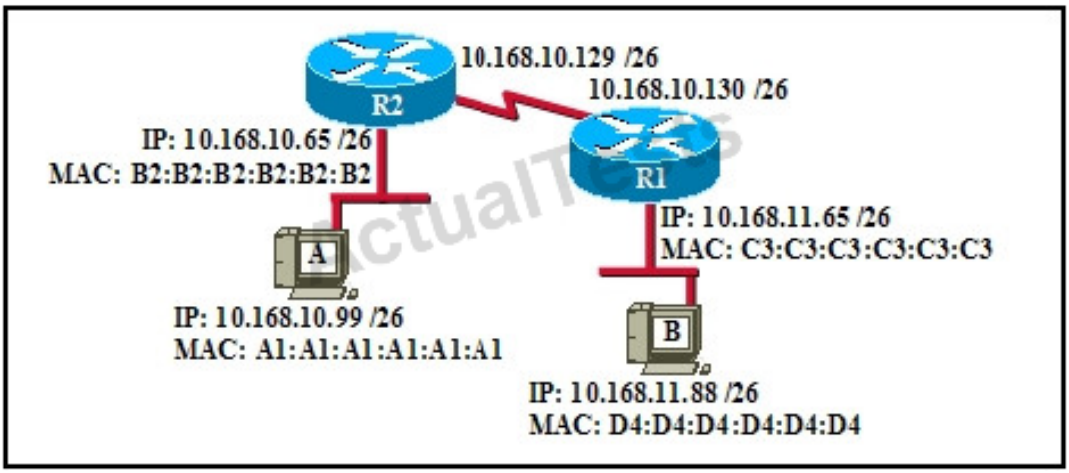
What is the purpose of using the copy flash tftp command on a router?

**A.** to copy an IOS image to the router
**B.** to create a backup copy of the IOS
**C.** to move the IOS image from a server to the router
**D.** to backup the router configuration to a server

**Answer: B**
**Explanation:**

**QUESTION NO: 32**

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:**

**QUESTION NO: 33**

During the boot sequence, a 2600 series router needs to locate and load an operating system. What is the default order the router uses to find an operating system?

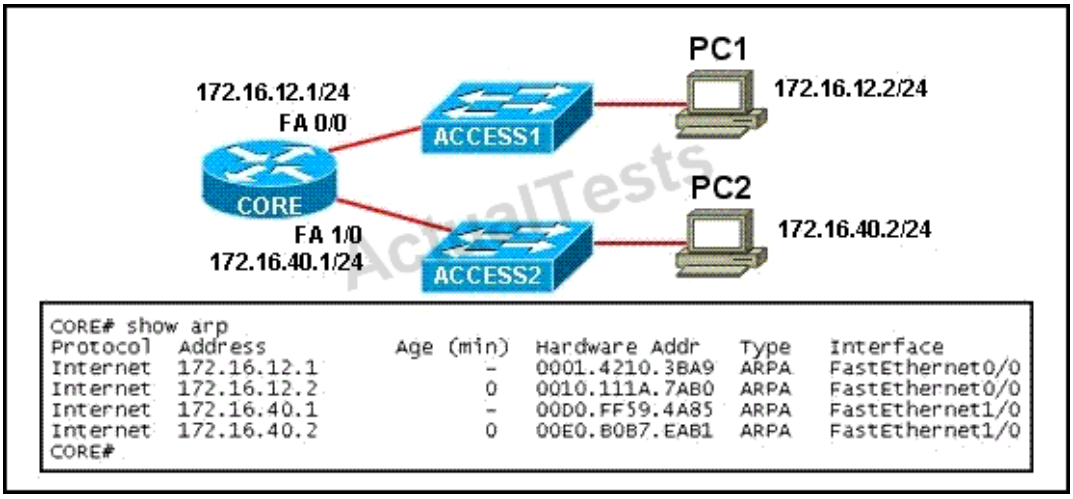
**A.** Flash, TFTP server, ROM
**B.** Flash, TFTP server, RAM
**C.** Flash, NVRAM, TFTP server
**D.** ROM, TFTP server, Flash
**E.** Flash, ROM, TFTP server

**Answer: A**

**Explanation:**

**QUESTION NO: 34**

Refer to the exhibit.




PC1 pings PC2. What three things will CORE router do with the data that is received from PC1? (Choose three.)

**A.** The data frames will be forwarded out interface FastEthernet0/1 of CORE router.
**B.** The data frames will be forwarded out interface FastEthernet1/0 of CORE router.
**C.** CORE router will replace the destination IP address of the packets with the IP address of PC2.
**D.** CORE router will place the MAC address of PC2 in the destination MAC address of the frames.
**E.** CORE router will put the IP address of the forwarding FastEthernet interface in the place of the source IP address in the packets.
**F.** CORE router will put the MAC address of the forwarding FastEthernet interface in the place of the source MAC address.

**Answer: B,D,F**

**Explanation:**

**QUESTION NO: 35**

Refer to the exhibit.

```
Router# configure terminal
Router(config)# hostname Router1
Router1(config)# enable secret sanfran
Router1(config)# enable password cisco
Router1(config)# line vty 0 4
Router1(config-line)# password sanjose
Router1(config-line)#
```

The network administrator made the entries that are shown and then saved the configuration. From a console connection, what password or password sequence is required for the administrator to access privileged mode on Router1?

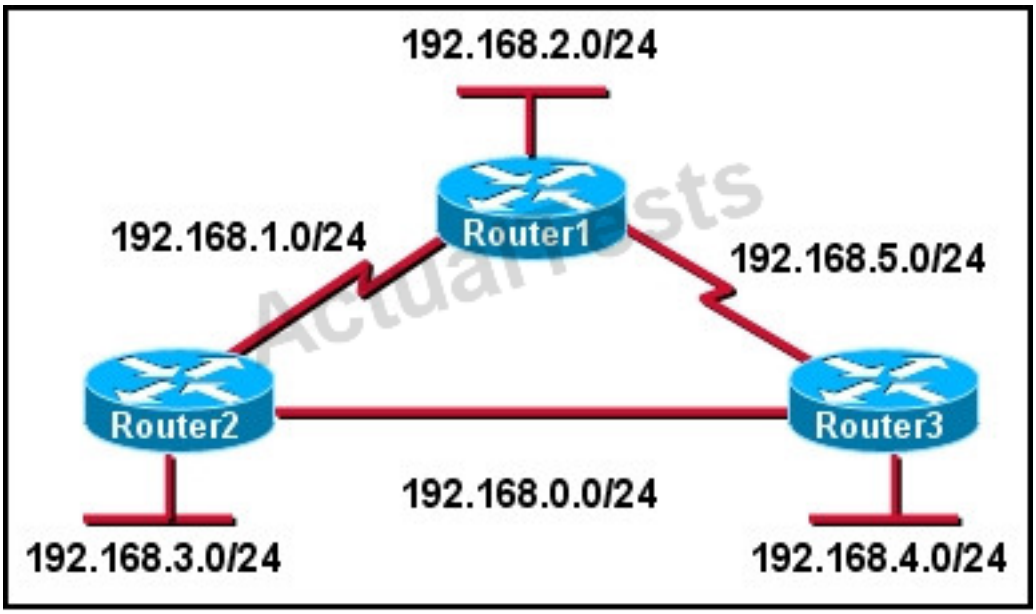
**A.** cisco
**B.** sanfran
**C.** sanjose
**D.** either cisco or sanfran
**E.** either cisco or sanjose
**F.** sanjose and sanfran

**Answer: B**

**Explanation:**

**QUESTION NO: 36**

Refer to the exhibit.




Router1 and Router3 are already configured with RIPv2. What are the minimum network commands that are required on Router2 for all networks to converge?

**A.** (config-router)# network 192.168.0.0
**B.** (config-router)# network 192.168.0.0
**C.** (config-router)# network 192.168.1.0
(config-router)# network 192.168.0.0
**D.** (config-router)# network 192.168.1.0
(config-router)# network 192.168.3.0

(config-router)# network 192.168.0.0
**E.** (config-router)# network 192.168.3.0
(config-router)# network 192.168.4.0

**Answer: D**
**Explanation:**

**QUESTION NO: 37**

Which two statements are true concerning wireless standards? (Choose two.)

**A.** Three standards exist: 802.11a/b, 802.11g, and 802.11w.
**B.** 802.11 divides the 2.4 GHz into 14 channels.
**C.** 802.11b is superior to 802.11a due to support for data rates up to 54 Mb/s.
**D.** 802.11b is intended to compensate for the half-duplex nature of wireless communications.
**E.** 802.11g is not as widely accepted due to production costs.

**Answer: B,D**
**Explanation:**

**QUESTION NO: 38**

What is the effect of using the service password-encryption command?

**A.** Only the enable password will be encrypted.
**B.** Only the enable secret password will be encrypted.
**C.** Only passwords configured after the command has been entered will be encrypted.
**D.** It will encrypt the secret password and remove the enable secret password from the configuration.
**E.** It will encrypt all current and future passwords.

**Answer: E**
**Explanation:**

**QUESTION NO: 39**

What is the purpose of an IDS?

**A.** perform stateful firewall functions
**B.** block suspicious network activity from entering the network
**C.** detect malicious traffic and send alerts to a management station
**D.** hide the private IP addressing structure from outside attackers

**Answer: C**
**Explanation:**

**QUESTION NO: 40**

Which statement describes the HDLC protocol?

**A.** HDLC is compatible between all network vendors.
**B.** HDLC utilizes sophisticated flow control mechanisms to ensure reliable data transfer.
**C.** On Cisco routers it is the default encapsulation for serial interfaces.
**D.** It is the preferred protocol for LAN communication.
**E.** The Cisco implementation of HDLC does not include proprietary extensions.

**Answer: C**
**Explanation:**

**QUESTION NO: 41**

Which statement is correct regarding the configuration of a serial link on a Cisco router?

**A.** Cisco routers are DCE devices.
**B.** The clock rate command is a requirement for DCE interfaces.
**C.** The bandwidth command guarantees maximum bandwidth during congestion.
**D.** If the clock rate command is configured, then the bandwidth command is required.
**E.** If the bandwidth command is configured, then the clock rate command is required.

**Answer: B**
**Explanation:**

**QUESTION NO: 42**

Refer to the exhibit.

```
R1#sh int ser0/1
Serial0/1 is up, line protocol is down
  Hardware is GT96K Serial
  Internet address is 192.1.1.1/30
  MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation PPP, LCP REQsent, loopback not set
  Keepalive set (10 sec)
```

```
R2#sh int serial 0/1
Serial0/1 is up, line protocol is down
  Hardware is GT96K Serial
  Internet address is 192.1.1.2/30
  MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
```

Which explanation would be a reason for the line protocol being down?

**A.** The clock rate (1544 Kbit) is set too high on serial 0/0/0.
**B.** The cable to Serial 0/0/0 is disconnected.
**C.** The remote end is not configured for PPP encapsulation.
**D.** Serial 0/0/0 requires an IP address for the line protocol to transition to up.

**Answer: C**
**Explanation:**

**QUESTION NO: 43**

Which command will assign the last usable IP address from the 192.168.32.128/28 subnetwork to a router interface?

**A.** Router(config-if)# ip address 192.168.32.142 255.255.255.240
**B.** Router(config-if)# ip address 192.168.32.143 255.255.255.240
**C.** Router(config-if)# ip address 192.168.32.158 255.255.255.240
**D.** Router(config-if)# ip address 192.168.32.142 255.255.255.248
**E.** Router(config-if)# ip address 192.168.32.144 255.255.255.224
**F.** Router(config-if)# ip address 192.168.32.158 255.255.255.224

**Answer: A**
**Explanation:**

**QUESTION NO: 44**

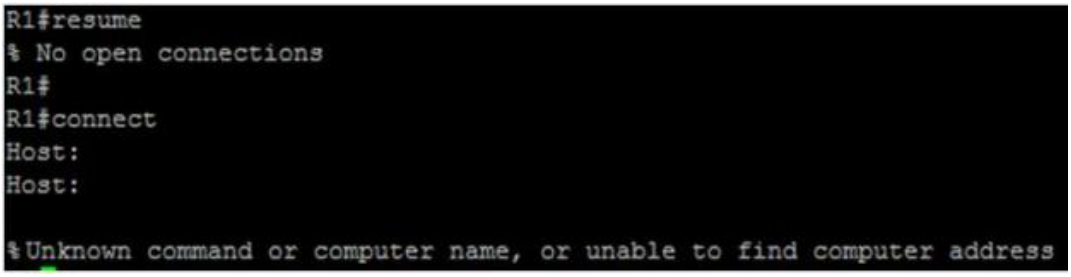
Which keyboard sequence is used to suspend a Telnet session from a Cisco router?

**A.** Ctrl-Shift-6, then x
**B.** Ctrl-Z, then x
**C.** Ctrl-Shift-C
**D.** Ctrl-Z
**E.** Ctrl-X

**Answer: A**
**Explanation:**

**QUESTION NO: 45**

Refer to the command output shown in the graphic.




Which IOS command will re-establish the Telnet session to host 192.20.11.1?

**A.** Router# resume
**B.** Router# resume 1
**C.** Router# connect 1
**D.** Router# disconnect 2
**E.** Router# Ctrl-Z

**Answer: B**
**Explanation:**

**QUESTION NO: 46**
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: B,C,E**
**Explanation:**

**QUESTION NO: 47**

On a live network, which commands will verify the operational status of router interfaces? (Choose two.)

**A.** Router# show interfaces
**B.** Router# show ip protocols
**C.** Router# debug interface
**D.** Router# show ip interface brief
**E.** Router# show start

**Answer: A,D**
**Explanation:**

**QUESTION NO: 48**

What is the result of starting a new router that has no files saved in NVRAM?

**A.** The router starts up in global configuration mode.
**B.** The router starts up in user EXEC mode.
**C.** The router starts up in privileged EXEC mode.
**D.** The router starts up in setup mode.
**E.** The router starts up in IP configuration mode.
**F.** The router starts up in RX-boot mode.

**Answer: D**
**Explanation:**

**QUESTION NO: 49**

Which connectionless application layer protocol is used to transfer IOS images into a Cisco router?

**A.** TFTP
**B.** FTP
**C.** Telnet
**D.** SNMP
**E.** SMTP

**Answer: A**
**Explanation:**

**QUESTION NO: 50**

What is the subnet address for the IP address 172.19.20.23/28?

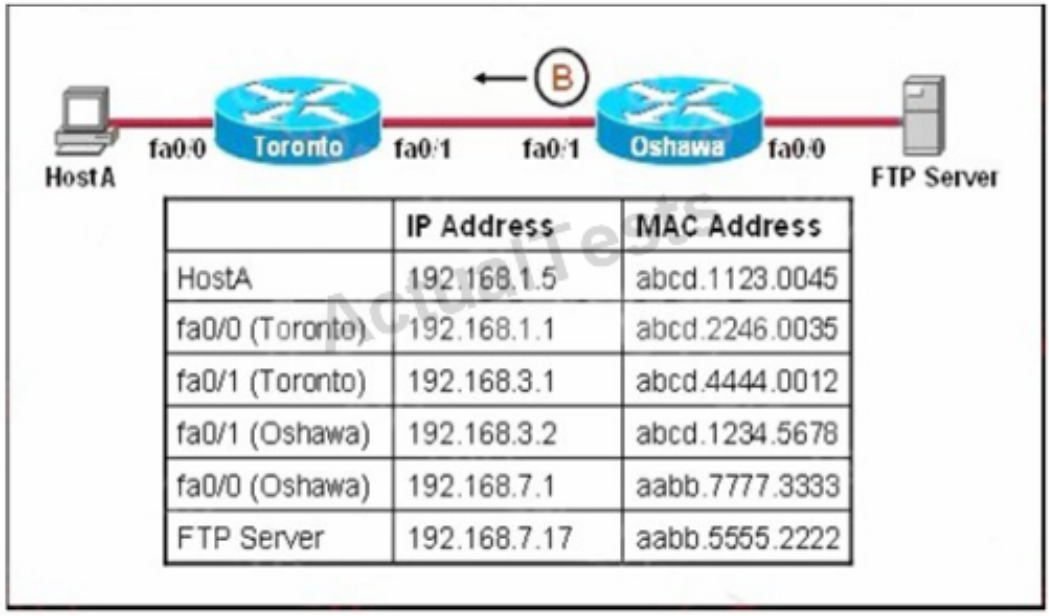
**A.** 172.19.20.0
**B.** 172.19.20.15
**C.** 172.19.20.16
**D.** 172.19.20.20
**E.** 172.19.20.32

**Answer: C**
**Explanation:**

**Topic 2, Multiple Choice Questions Set B**

**QUESTION NO: 51**

Refer to the exhibit.




| | IP Address | MAC Address |
|---|---|---|
| HostA | 192.168.1.5 | abcd.1123.0045 |
| fa0/0 (Toronto) | 192.168.1.1 | abcd.2246.0035 |
| fa0/1 (Toronto) | 192.168.3.1 | abcd.4444.0012 |
| fa0/1 (Oshawa) | 192.168.3.2 | abcd.1234.5678 |
| fa0/0 (Oshawa) | 192.168.7.1 | aabb.7777.3333 |
| FTP Server | 192.168.7.17 | aabb.5555.2222 |

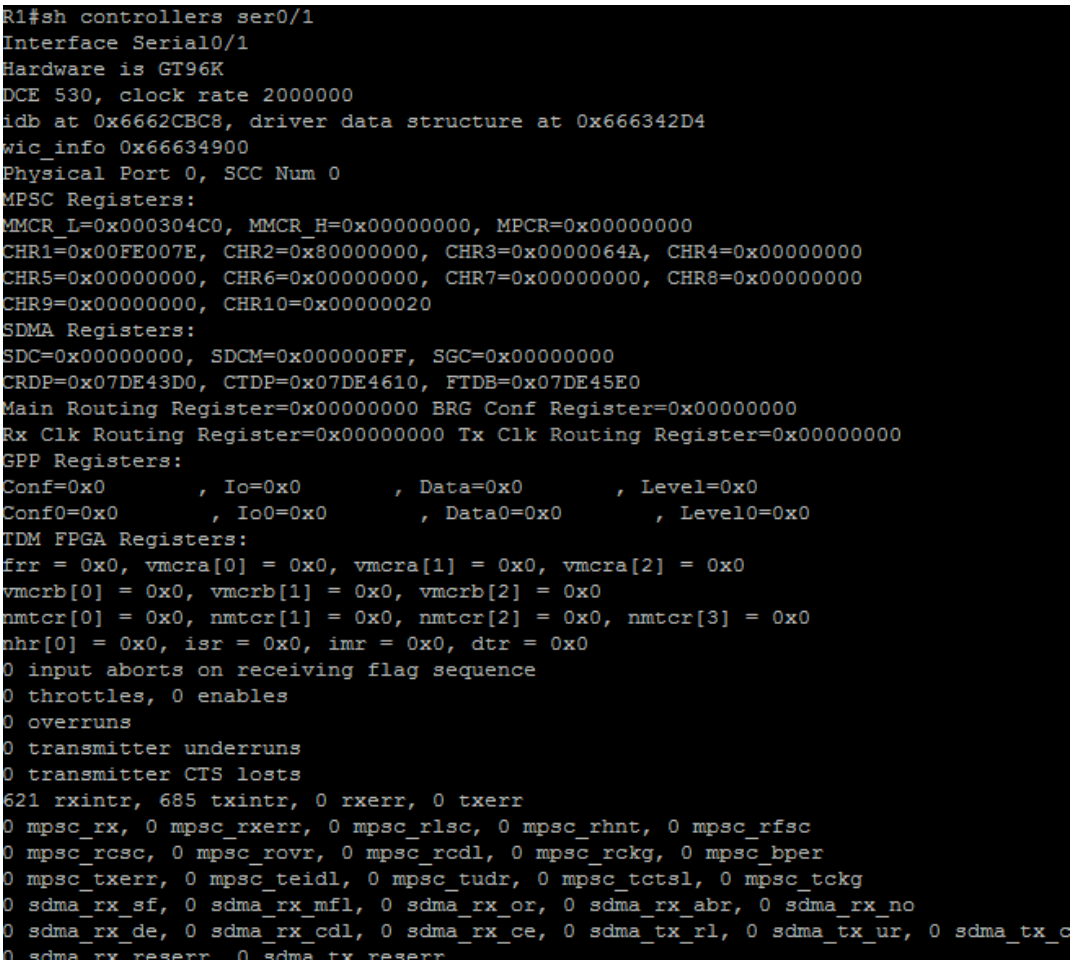
The FTP server is sending a file to HostA. B represents the frame as it leaves the Oshawa router. What is the Layer 2 destination address of the frame at this point?

**A.** abcd.1123.0045
**B.** abcd.1234.5678
**C.** abcd.2246.0035
**D.** abcd.4444.0012
**E.** aabb.5555.2222

**Answer: D**
**Explanation:**

**QUESTION NO: 52**

Refer to the exhibit.




A network technician has issued the show controllers s0/0 command to check the status of an interface. What can be determined from this output? (Choose two.)

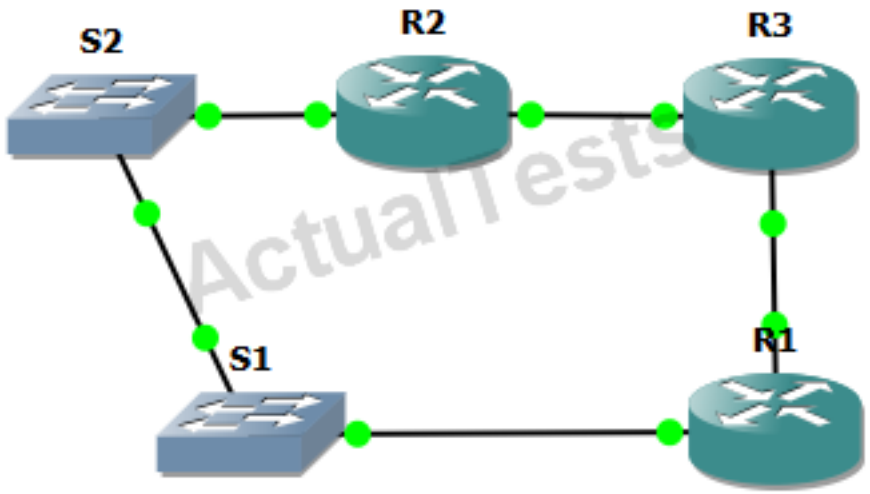
**A.** An external CSU/DSU is not in use.
**B.** The s0/0 interface is shutdown.
**C.** The command clockrate 64000 was issued on this interface.
**D.** No clock rate is set.
**E.** The interface has a DTE serial cable attached to it.
**F.** The interface has an Ethernet cable attached.

**Answer: A,D**

**Explanation:**

**QUESTION NO: 53**

Refer to the exhibit.




If CDP is enabled on all devices and interfaces, which devices will appear in the output of a show cdp neighbors command issued from R2?

**A.** R2 and R3
**B.** R1 and R3
**C.** R3 and S2
**D.** R1, S1, S2, and R3
**E.** R1, S1, S2, R3, and S3

**Answer: C**
**Explanation:**

**QUESTION NO: 54**

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: B,C**
**Explanation:**

**QUESTION NO: 55**

Which of the following correctly pairs the dotted decimal subnet mask with the correct number of binary bits that represent the subnet mask?

**A.** 255.255.255.192 and /25
**B.** 255.255.255.248 and /28
**C.** 255.255.255.224 and /26
**D.** 255.255.255.248 and /27
**E.** 255.255.255.240 and /28
**F.** 255.255.255.240 and /16

**Answer: E**
**Explanation:**

**QUESTION NO: 56**

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: C,D**
**Explanation:**

**QUESTION NO: 57**

A host has had a NIC card installed. The NIC can run in either half or full-duplex mode. The host is connected to a hub that is located in a wiring closet. The network administrator notes that the NIC is only communicating in half-duplex mode. Which action could be taken to enable full-duplex operation?

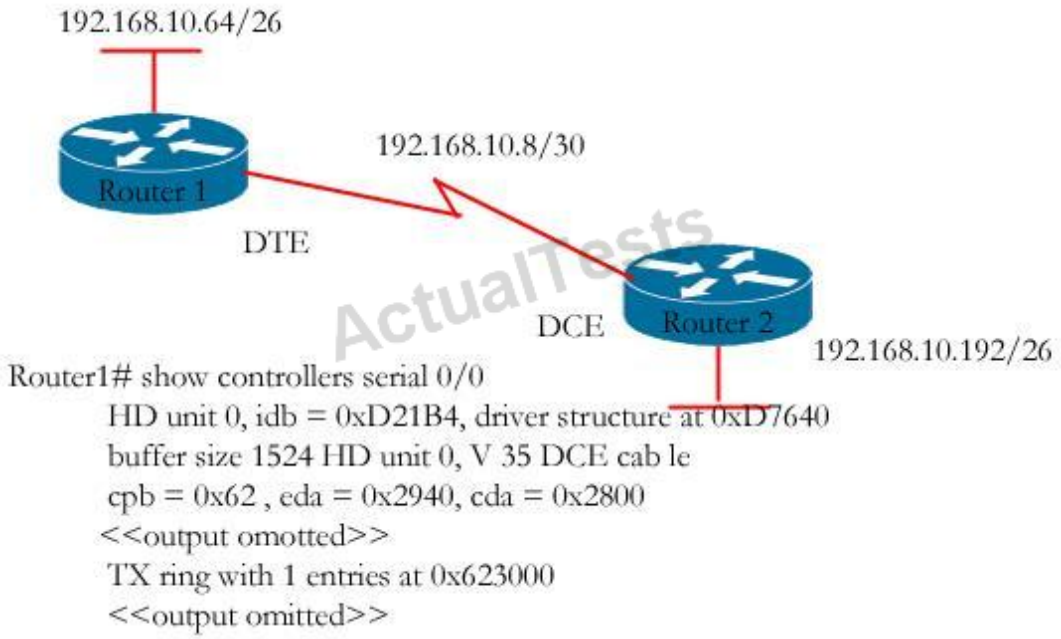
**A.** Replace the host NIC.
**B.** Replace the hub with a Fast Ethernet switch.
**C.** Replace the cable between the PC and hub port.
**D.** Install a second NIC card in the host and connect it to another port on the hub.

**Answer: B**

**Explanation:**

**QUESTION NO: 58**

An administrator cannot connect from R1 to R2. To troubleshoot this problem, the administrator has entered the command shown in the exhibit.




Based on the output shown, what could be the problem?

**A.** The serial interface is configured for half duplex.
**B.** The serial interface does not have a cable attached.
**C.** The serial interface has the wrong type of cable attached.
**D.** The serial interface is configured for the wrong frame size.
**E.** The serial interface has a full buffer.

**Answer: C**

**Explanation:**

**QUESTION NO: 59**

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:**

**QUESTION NO: 60**

What is ROM Monitor (ROMMON)?

**A.** a memory component for storing the saved configuration file
**B.** an operating system used for hardware troubleshooting and for password recovery
**C.** is part of IOS and runs in the background until accessed by issuing rommon
**D.** temporary storage space for the router operating files
**E.** a memory management tool

**Answer: B**
**Explanation:**

**QUESTION NO: 61**

The command ip route 192.168.100.160 255.255.255.224 192.168.10.2 was issued on a router. No routing protocols or other static routes are configured on the router. Which statement is true about this command?

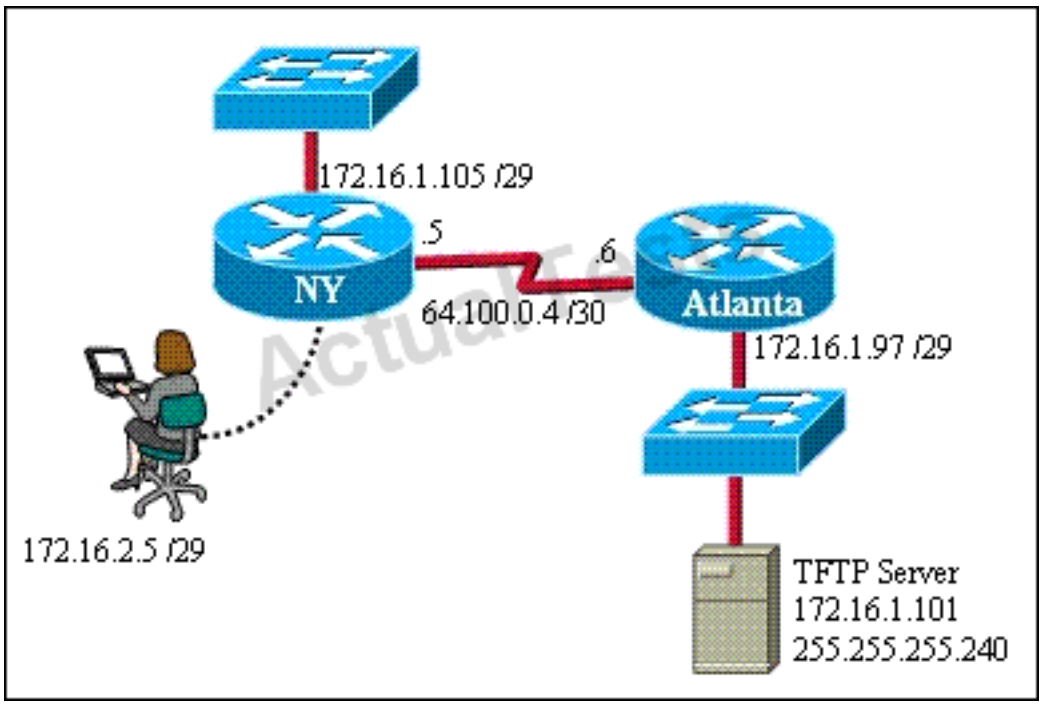
**A.** The interface with IP address 192.168.10.2 is on this router.
**B.** The command sets a gateway of last resort for the router.

**C.** Packets that are destined for host 192.168.100.190 will be sent to 192.168.10.2.
**D.** The command creates a static route for all IP traffic with the source address 192.168.100.160.

**Answer: C**
**Explanation:**

**QUESTION NO: 62**

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:**

**QUESTION NO: 63**

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: B,D**

**Explanation:**

**QUESTION NO: 64**

During a router boot sequence, what is the basic function of the configuration register?

**A.** holds packet buffers for the router
**B.** controls how the router boots
**C.** starts and maintains the router
**D.** holds the router run-time configuration
**E.** verifies that all router components are operational

**Answer: B**

**Explanation:**

**QUESTION NO: 65**

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:**

**QUESTION NO: 66**

What are two common TCP applications? (Choose two.)

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

**Answer: B,D**
**Explanation:**

**QUESTION NO: 67**

A network engineer needs to configure a branch office for 82 hosts. What is the most efficient use of a subnet mask?

**A.** 255.255.255.128
**B.** 255.255.255.192
**C.** 255.255.255.224
**D.** 255.255.255.248

**Answer: A**
**Explanation:**

**QUESTION NO: 68**

When configuring NAT, the Internet interface is considered to be what?

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

**Answer: D**
**Explanation:**

**QUESTION NO: 69**

Which layer of the OSI model is responsible for segmenting data from a sending host that enables large files to be broken down into smaller segments to prevent transmission errors?

**A.** session
**B.** presentation
**C.** application
**D.** transport

**Answer: D**
**Explanation:**

**QUESTION NO: 70**

What starting binary pattern indicates an address range evenly split between network and host size?

**A.** 01xxxxxx
**B.** 0xxxxxxx
**C.** 10xxxxxx
**D.** 110xxxxx

**Answer: C**
**Explanation:**

**QUESTION NO: 71**

On a Cisco switch, which protocol determines if an attached VoIP phone is from Cisco or from another vendor?

**A.** RTP
**B.** TCP
**C.** CDP
**D.** UDP

**Answer: C**
**Explanation:**

**QUESTION NO: 72**

If a host experiences intermittent issues that relate to congestion within a network while remaining connected, what could cause congestion on this LAN?

**A.** half-duplex operation
**B.** broadcast storms
**C.** network segmentation
**D.** multicasting

**Answer: B**

**Explanation:**

**QUESTION NO: 73**

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**

**Explanation:**

**QUESTION NO: 74**

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:**

**QUESTION NO: 75**

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: A,B**
**Explanation:**

**QUESTION NO: 76**

A switch has 48 ports and 4 VLANs. How many collision and broadcast domains exist on the switch (collision, broadcast)?

**A.** 4, 48
**B.** 48, 4
**C.** 48, 1
**D.** 1, 48
**E.** 4, 1

**Answer: B**
**Explanation:**

**QUESTION NO: 77**

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:**

**QUESTION NO: 78**

What are two characteristics of segmenting a network with a router? (Choose two.)

**A.** a router processes data more quickly than switches
**B.** filtering can occur based on layer 3 information
**C.** A router decreases the number of collision domains.
**D.** adding a router to the network decreases latency
**E.** broadcasts are not forwarded across the router

**Answer: C,E**
**Explanation:**

**QUESTION NO: 79**

Why would a network administrator configure port security on a switch?

**A.** to prevent unauthorized Telnet access to a switch port
**B.** to prevent unauthorized hosts from accessing the LAN
**C.** to limit the number of Layer 2 broadcasts on a particular switch port
**D.** block unauthorized access to the switch management interfaces

**Answer: B**
**Explanation:**

**QUESTION NO: 80**

How can you ensure that only the MAC address of a server is allowed by switch port Fa0/1?

**A.** Configure port Fa0/1 to accept connections only from the static IP address of the server.
**B.** Configure the server MAC address as a static entry of port security.
**C.** Use a proprietary connector type on Fa0/1 that is incomputable with other host connectors.
**D.** Bind the IP address of the server to its MAC address on the switch to prevent other hosts from spoofing the server IP address.

**Answer: B**

**Explanation:**

**QUESTION NO: 81**

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

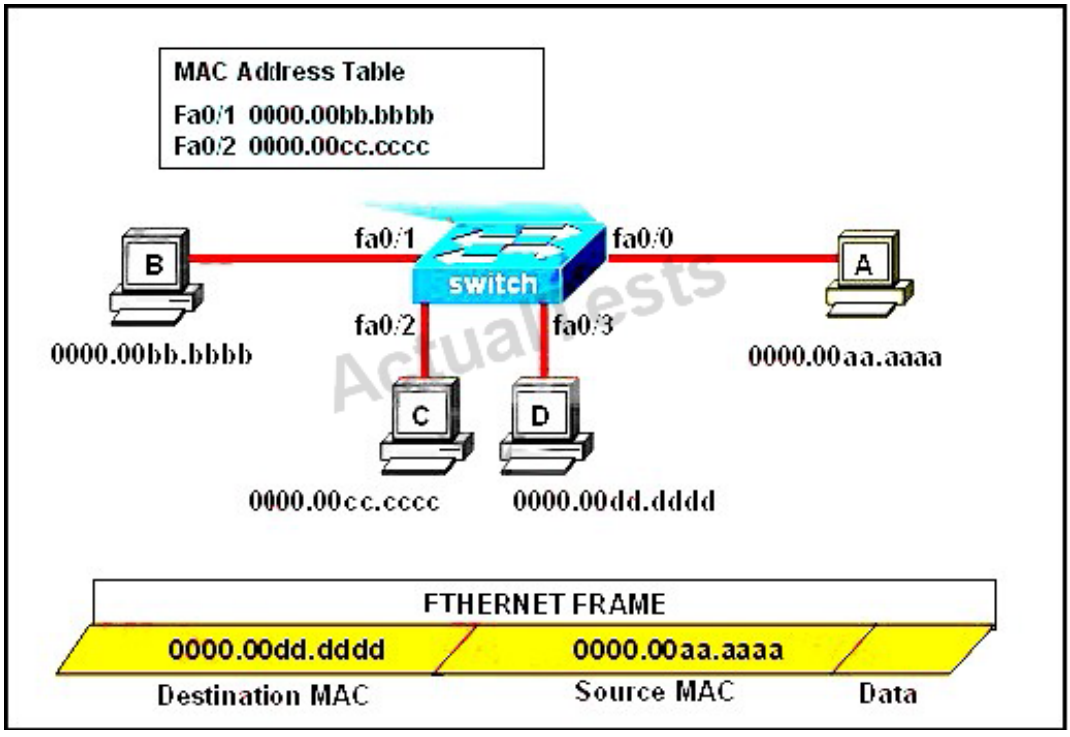
**A.** 192.168.2.63
**B.** 192.168.2.62
**C.** 192.168.2.61
**D.** 192.168.2.60
**E.** 192.168.2.32

**Answer: B**

**Explanation:**

**QUESTION NO: 82**

Refer to the exhibit.



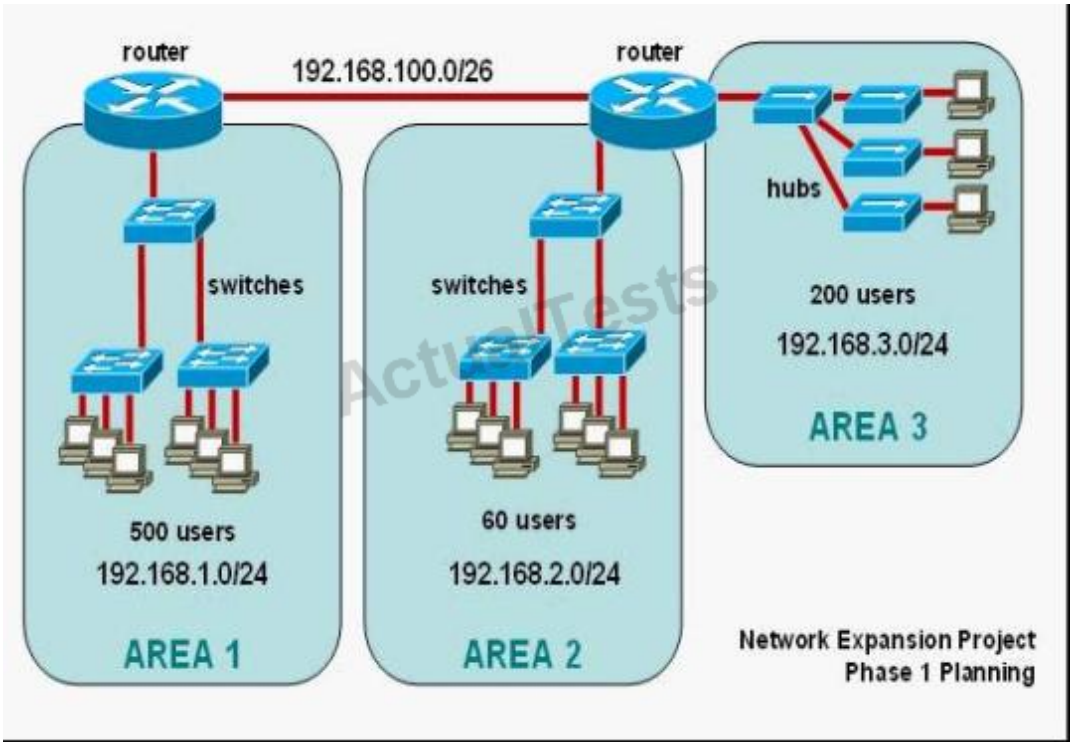

The MAC address table is shown in its entirety. The Ethernet frame that is shown arrives at the switch. What two operations will the switch perform when it receives this frame? (Choose two.)

**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 all active switch ports except for port fa0/0.
**E.** The frame will be forwarded out fa0/0 and fa0/1 only.
**F.** The frame will be forwarded out all the ports on the switch.

**Answer: B,D**
**Explanation:**

**QUESTION NO: 83**

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:

192.168.1.1 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: A,C,E**

**Explanation:**

**QUESTION NO: 84**

A network administrator has been assigned an IP address space of 192.168.1.0/24 for a network with three segments. The first segment needs to support 60 hosts. The second segment needs to support 45 hosts. The third segment needs to support 30 hosts. Which two statements describe this choice? (Choose two.)

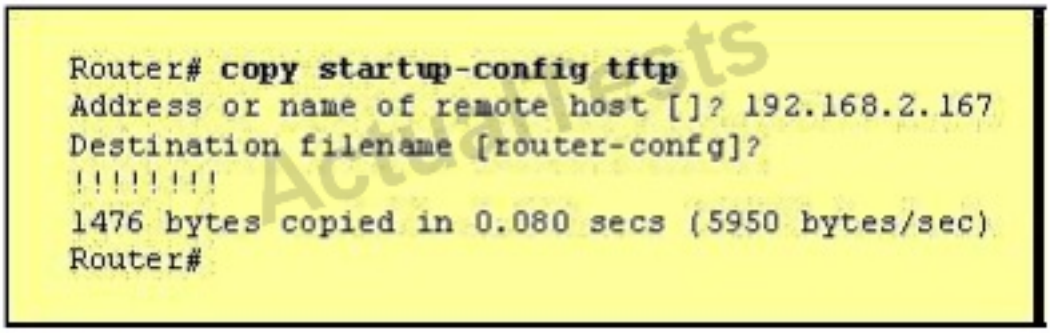
**A.** The assigned address will not provide enough IP address space for the required number of hosts.
**B.** The assigned address represents private IP address space.
**C.** User IP addresses must be translated to public IP addresses when accessing the Internet.
**D.** User IP addresses must be translated to private IP addresses when communicating to hosts on other network segments.
**E.** This assignment will compromises network security.

**Answer: B,C**

**Explanation:**

**QUESTION NO: 85**

Refer to the exhibit.



What is the result of the entries shown?

**A.** A copy of the router-config file stored on the TFTP server with an IP address of 192.168.2.167 will be downloaded to the local router where it is stored under the name of startup-config.
**B.** A copy of the file startup-config stored on the TFTP server with an IP address of 192.168.2.167 will be downloaded to the local router where it is stored under the name of router-config.
**C.** A copy of local startup-config file will be uploaded to the TFTP server with an IP address of 192.168.2.167 where it is stored under the name of router-config.
**D.** A copy of local router-config file will be uploaded to the TFTP server with an IP address of 192.168.2.167 where it is stored under the name of startup-config.

**Answer: C**
**Explanation:**

**QUESTION NO: 86**

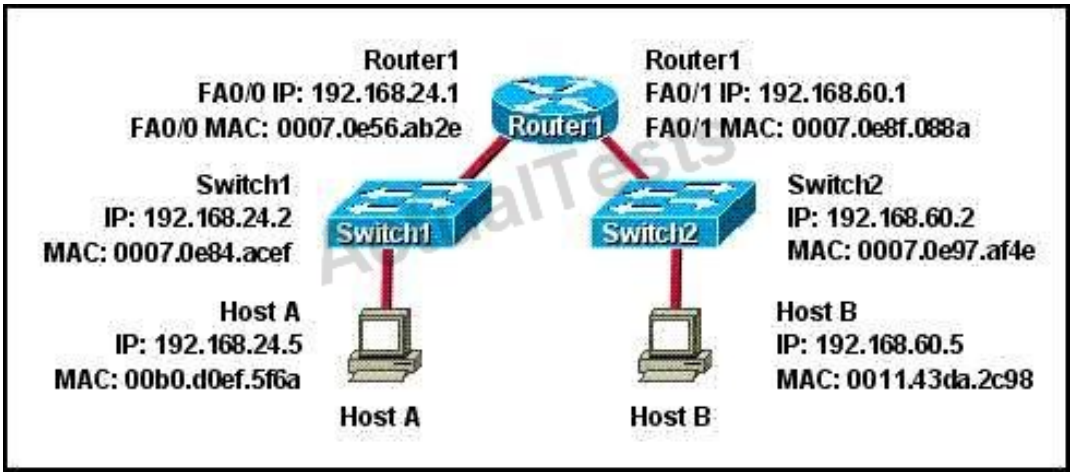
Which transport layer protocol is used for critical Voice over IP services?

**A.** SMTP
**B.** ICMP
**C.** TCP
**D.** UDP
**E.** RTP

**Answer: D**
**Explanation:**

**QUESTION NO: 87**

Refer to the exhibit.



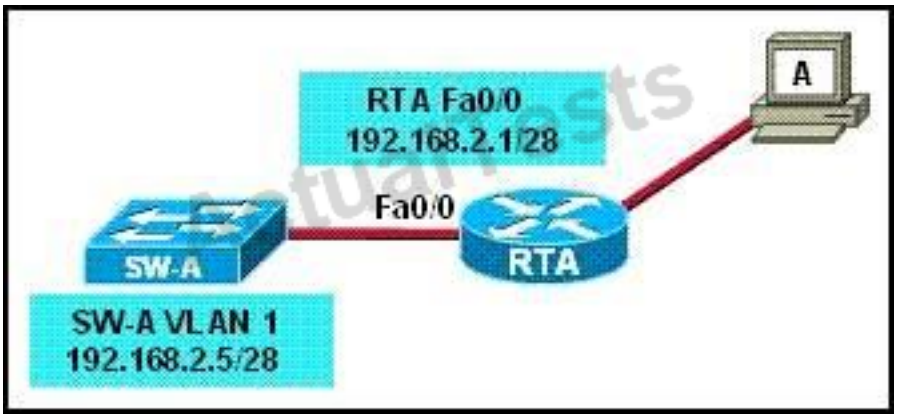
Host A needs to send data to Host B. Which Layer 2 and 3 destination addresses will be used to send the data from Host A to Host B?

**A.** 192.168.24.1 and 0007.0e56.ab2e
**B.** 192.168.60.5 and 0011.43da.2c98
**C.** 192.168.24.2 and 0007.0e84.acef
**D.** 192.168.60.5 and 0007.0e56.ab2e

**Answer: D**
**Explanation:**

**QUESTION NO: 88**

Refer to the exhibit.



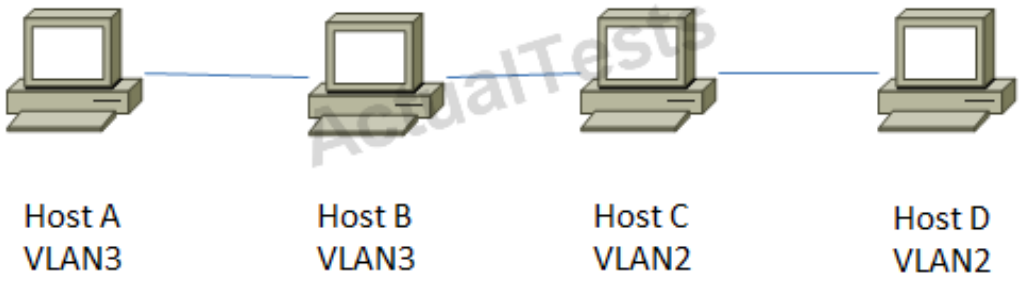

What must be configured to establish a successful connection from Host A to switch SW-A through router RT-A?

**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:**

**QUESTION NO: 89**

Refer to the exhibit.




Host A can communicate with Host B but not with Hosts C or D. How can the network administrator solve this problem?

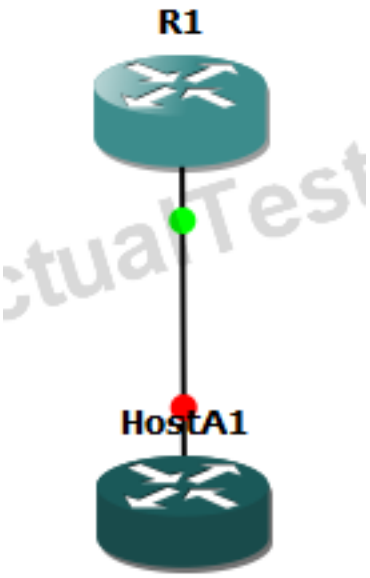
**A.** Configure Hosts C and D with IP addresses in the 192.168.2.0 network
**B.** Install a router and configure a route to route between VLANs 2 and 3.
**C.** Install a second switch and put Hosts C and D on that switch while Hosts A and B remain on the original switch.
**D.** Enable the VLAN trunking protocol on the switch.

**Answer: B**

**Explanation:**

**QUESTION NO: 90**

Refer to the exhibit.



A host is connected to switch port fa0/3. The host and switch have been fully configured for IP connectivity as shown. However, the indicator LED on switch port fa0/3 is not on, and the host cannot communicate with any other hosts including those connected to VLAN 2 on the same switch. Based on the given information, what is the problem?

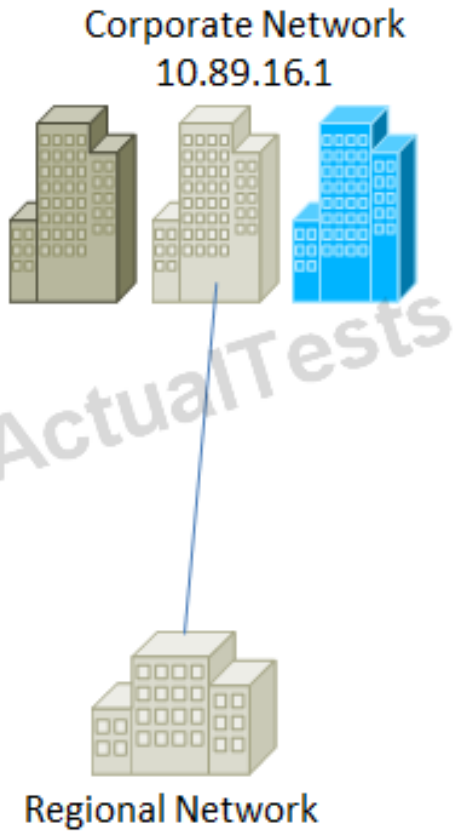
**A.** switch port fa0/3 is not configured as a trunk port
**B.** there is a bad cable
**C.** the switch has been assigned an incorrect subnet mask
**D.** switch port fa0/3 has been blocked by STP
**E.** the switch and the host must be in the same subnet

**Answer: B**

**Explanation:**

**QUESTION NO: 91**

Refer to the exhibit.



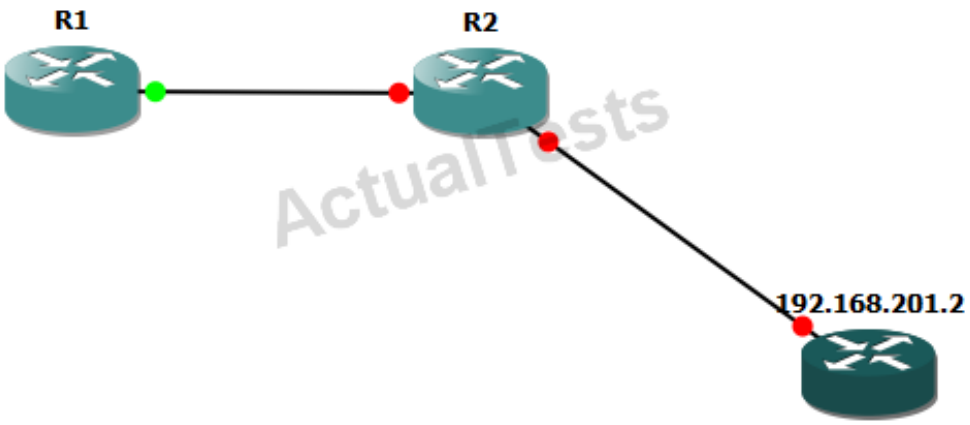

What is the simplest way to configure routing between the regional office network 10.89.0.0/20 and the corporate network?

**A.** router1(config)#ip route 10.89.0.0 255.255.240.0 10.89.16.2
**B.** router2(config)#ip route 10.89.3.0 255.255.0.0 10.89.16.2
**C.** router1(config)#ip route 10.89.0.0 255.255.240.0 10.89.16.1
**D.** router2(config)#ip route 0.0.0.0 0.0.0.0 10.89.16.1

**Answer: D**
**Explanation:**

**QUESTION NO: 92**

Refer to the exhibit.




Which command would you use to configure a static route on Router1 to network 192.168.202.0/24 with a nondefault administrative distance?

**A.** router1(config)#ip route 1 192.168.201.1 255.255.255.0 192.168.201.2
**B.** router1(config)#ip route 192.168.202.0 255.255.255.0 192.168.201.2 1
**C.** router1(config)#ip route 5 192.168.202.0 255.255.255.0 192.168.201.2
**D.** router1(config)#ip route 192.168.202.0 255.255.255.0 192.168.201.2 5

**Answer: D**
**Explanation:**

**QUESTION NO: 93**

Which statement is true for PPP?

**A.** cannot be configured on asynchronous links

**B.** uses LCP for establishing and configuring different network layer protocols
**C.** uses a family of NCPs for establishing, configuring, and testing the data-link connection
**D.** has an authentication phase that is performed before the network layer protocol phase

**Answer: D**
**Explanation:**

**QUESTION NO: 94**

Which statement is true for DSL?

**A.** DSL is backward-compatible with analog voice.
**B.** DSL transmission occurs within a frequency range of 330 Hz and 3.3 kHz.
**C.** The DSLAM is installed at the customer site.
**D.** Very-high-data-rate DSL is an example of SDSL.

**Answer: A**
**Explanation:**

**QUESTION NO: 95**

What type of technology do DSLAMs incorporate?

**A.** CSMA/CA
**B.** CSMA/CD
**C.** cell switching
**D.** packet switching
**E.** time-division multiplexing

**Answer: E**
**Explanation:**

**QUESTION NO: 96**

When should the "clock rate" command be used on a Cisco router's interface?

**A.** During diagnostic functions such as a loopback test
**B.** When the router is directly connected to another Cisco router

**C.** When the router is connected to a Frame Relay switch
**D.** When the interface is connected to a CSU/DSU

**Answer: B**
**Explanation:**

**QUESTION NO: 97**

Which tool can provide a secure communication between two devices over the Internet?

**A.** IDS
**B.** IPS
**C.** VPN
**D.** Anti-virus
**E.** GRE

**Answer: C**
**Explanation:**

**QUESTION NO: 98**

How many hosts are available for 192.168.1.1/28?

**A.** 14
**B.** 15
**C.** 16
**D.** 17
**E.** 18

**Answer: A**
**Explanation:**

**QUESTION NO: 99**

You need to configure 52 hosts for a computer lab. Which subnet mask is appropriate?

**A.** 255.255.255.224
**B.** 255.255.255.248

**C.** 255.255.254.240
**D.** 255.255.255.192

**Answer: D**
**Explanation:**

**QUESTION NO: 100**

Which subnet mask provides the most efficient use of a Class C address space for a company that requires 10 subnets and 12 hosts per subnet?

**A.** 255.255.255.192
**B.** 255.255.255.248
**C.** 255.255.255.0
**D.** 255.255.255.224
**E.** 255.255.255.252
**F.** 255.255.255.240

**Answer: F**
**Explanation:**

**Topic 3, Multiple Choice Questions Set C**

**QUESTION NO: 101**

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: C,E**
**Explanation:**

**QUESTION NO: 102**

Which type of address does a Layer 2 switch use to make forwarding decisions?

**A.** source MAC address
**B.** destination MAC address
**C.** source IP address
**D.** destination IP address
**E.** source and destination IP address

**Answer: B**
**Explanation:**

**QUESTION NO: 103**

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: A,C**
**Explanation:**

**QUESTION NO: 104**

Which three statements about switch microsegmentations are correct? (Choose three)

**A.** microsegmentation increases bandwidth availability.
**B.** Implementing a bridge creates microsegmentation.
**C.** microsegmentation uses half-duplex operation.
**D.** microsegmentation eliminates collisions.
**E.** each device on a network segment is connected directly to a switch port.
**F.** microsegmentation limits the number of segments on a network.

**Answer: A,D,E**
**Explanation:**

**QUESTION NO: 105**

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:**

**QUESTION NO: 106**

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:**

**QUESTION NO: 107**

Which solution should be deployed to provide a secure connection over a shared infrastructure?

**A.** firewall

**B.** IPS
**C.** router
**D.** VPN

**Answer: D**
**Explanation:**

**QUESTION NO: 108**

After issuing the copy run start command, you make several changes to your lab router and realize that you were referencing a list of bad IP addresses to make these changes. Which command is most efficient to resolve your mistakes?

**A.** erase flash
**B.** restart
**C.** renew
**D.** erase nvram
**E.** reload
**F.** erase start

**Answer: E**
**Explanation:**

**QUESTION NO: 109**

You run the command debug ip rip on your router and notice this entry:

**08:08:30: RIP: build update entries**

**08:08:30: network 192.168.10.0 metric 16**

What is this information telling you?

**A.** It provides the administrative distance for this route.
**B.** The route has exceeded its maximum hop count.
**C.** There are 16 hops to reach this route.
**D.** It establishes the route update timer parameter
**E.** The route will be flushed in 16 seconds.

**Answer: B**

**Explanation:**

**QUESTION NO: 110**

In which default order would a router load a Cisco IOS image?

**A.** Flash, ROM, TFTP
**B.** RAM, Flash, TFTP
**C.** Flash, TFTP, ROM
**D.** NVRAM, TFTP, Flash
**E.** Flash, NVRAM, TFTP

**Answer: C**
**Explanation:**

**QUESTION NO: 111**

You do not have access to a network server and need to back up a Cisco IOS image. Which utility can you use to achieve this goal?

**A.** tftp
**B.** ftp
**C.** http
**D.** xmodem
**E.** rcp

**Answer: D**
**Explanation:**

**QUESTION NO: 112**

Which command would you use to view how much space has been consumed in NVRAM?

**A.** show NVRAM
**B.** show flash
**C.** show version
**D.** show running-config
**E.** show startup-config

**Answer: E**
**Explanation:**

**QUESTION NO: 113**

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:**

**QUESTION NO: 114**

Which command excludes seven host addresses from a DHCP pool that has a 255.255.255.192 mask?

**A.** router(config)#ip dhcp excluded-address 192.168.7.0 192.168.7.6
**B.** router(config)#ip dhcp excluded-address 192.168.7.121 192.168.7.127
**C.** router(config)#ip dhcp excluded-address 192.168.7.159 192.168.7.165
**D.** router(config)#ip dhcp excluded-address 192.168.7.193 192.168.7.198

**Answer: C**
**Explanation:**

**QUESTION NO: 115**

What is the last usable address of the network 10.10.64.0 255.255.252.0?

**A.** 10.10.64.254
**B.** 10.10.67.254
**C.** 10.10.66.254
**D.** 10.10.65.254

**Answer: B**

**Explanation:**

**QUESTION NO: 116**

Which of these is a routed protocol?

**A.** RIP
**B.** UDP
**C.** IP
**D.** HTTP
**E.** IGRP

**Answer: C**
**Explanation:**

**QUESTION NO: 117**

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:**

**QUESTION NO: 118**

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:**

**QUESTION NO: 119**

What is the most efficient subnet mask for a small branch office with seven hosts?

**A.** 255.255.255.0
**B.** 255.255.255.248
**C.** 255.255.255.240
**D.** 255.255.255.224

**Answer: C**
**Explanation:**

**QUESTION NO: 120**

If you enter show interfaces serial 0/0 and receive the message “Serial0/0 is up, line protocol is down,” what are three possible causes? (Choose three.)

**A.** No cable is attached to the interface.
**B.** The clock rate is not set.
**C.** No keepalive messages are received.
**D.** The interface is shut down.
**E.** No loopback address is set.
**F.** There is a mismatch in the encapsulation type.

**Answer: B,C,F**
**Explanation:**

**QUESTION NO: 121**

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: C,D**
**Explanation:**

**QUESTION NO: 122**

When files are transferred between a host and an FTP server, the data is divided into smaller pieces for transmission. As these pieces arrive at the destination host, they must be reassembled to reconstruct the original file. What provides for the reassembly of these pieces into the correct order?

**A.** the TTL in the IP header
**B.** the frame check sequence in the Ethernet frame trailer
**C.** the sequence number in the TCP header
**D.** the Start Frame Delimiter in the 802.3 Preamble
**E.** the acknowledgement number in the segment header

**Answer: C**
**Explanation:**

**QUESTION NO: 123**

What TCP message does a host send to establish a connection with a destination host?

**A.** Establish
**B.** Request open
**C.** SYN
**D.** ISN
**E.** ACK
**F.** HELLO

**Answer: C**
**Explanation:**

**QUESTION NO: 124**

What process is used to establish a connection-oriented virtual circuit between two communicating hosts?

**A.** flow control
**B.** sequencing
**C.** windowing
**D.** three-way handshake
**E.** duplexing

**Answer: D**
**Explanation:**

**QUESTION NO: 125**

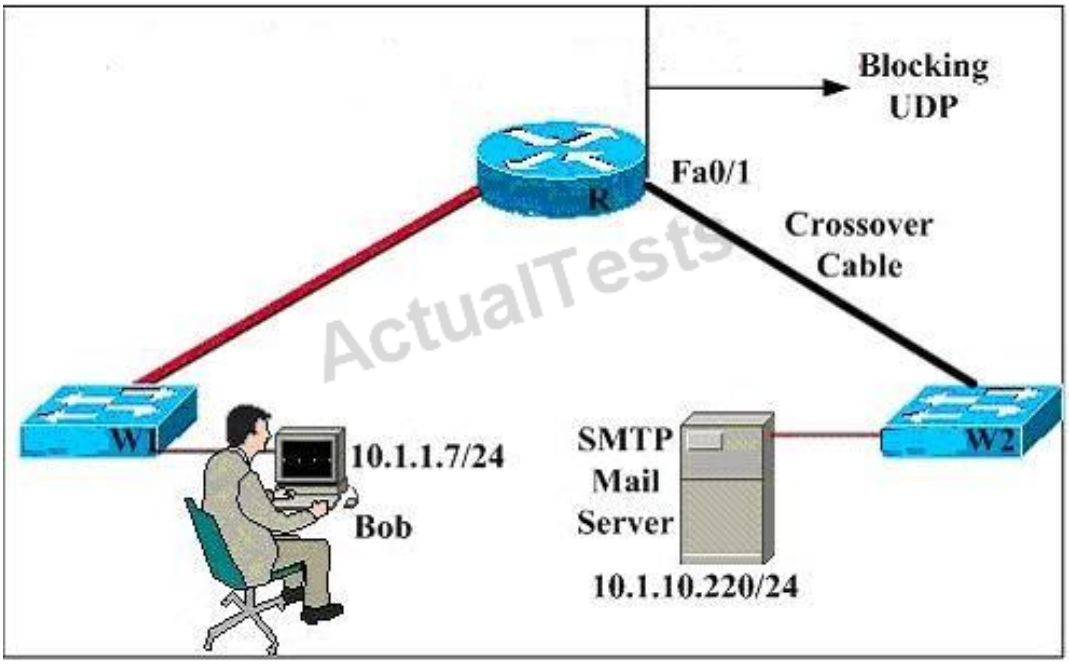
What must occur before a workstation can exchange HTTP packets with a web server?

**A.** A UDP connection must be established between the workstation and its default gateway.
**B.** A UDP connection must be established between the workstation and the web server.
**C.** A TCP connection must be established between the workstation and its default gateway.
**D.** A TCP connection must be established between the workstation and the web server.
**E.** An ICMP connection must be established between the workstation and its default gateway.
**F.** An ICMP connection must be established between the workstation and the web server.

**Answer: D**
**Explanation:**

**QUESTION NO: 126**

Refer to the exhibit.




Pierre has just installed the mail server and Switch2. For security reasons UDP packets are not permitted outbound on the Fa0/1 router interface. Pierre is now at his workstation testing the new installation and is not able to establish SMTP communication to the mail server.

What is the most likely cause for lack of communication between Pierre's workstation and the mail server?

**A.** The crossover cable should be a straight-through cable.
**B.** UDP is blocked coming out of the Fa0/1 interface on the router.
**C.** The server should be directly connected to the router.
**D.** The IP addresses are all on the same network. No router is required.

**Answer: A**
**Explanation:**

**QUESTION NO: 127**

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:**

**QUESTION NO: 128**

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

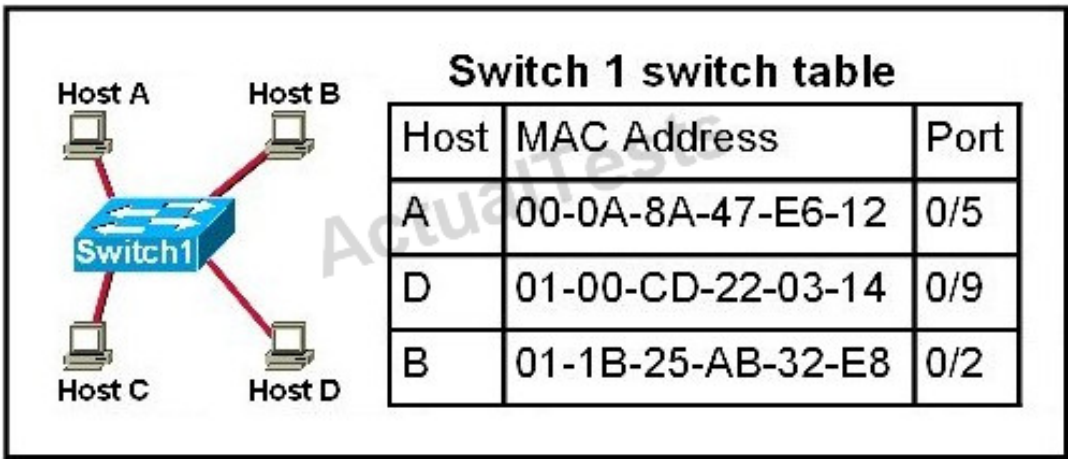
**A.** HTTP
**B.** IP
**C.** TCP
**D.** Telnet
**E.** UDP

**Answer: E**

**Explanation:**

**QUESTION NO: 129**

Refer to the topology and switching table shown in the graphic.




**Switch 1 switch table**

| Host | MAC Address | Port |
|---|---|---|
| A | 00-0A-8A-47-E6-12 | 0/5 |
| D | 01-00-CD-22-03-14 | 0/9 |
| B | 01-1B-25-AB-32-E8 | 0/2 |

Host B sends a frame to Host C. What will the switch do with the frame?

**A.** drop the frame
**B.** send the frame out all ports except port 0/2
**C.** return the frame to Host B
**D.** send an ARP request for Host C

**E.** send an ICMP Host Unreachable message to Host B
**F.** record the destination MAC address in the switching table and send the frame directly to Host C

**Answer: B**

**Explanation:**

**QUESTION NO: 130**

Which three statements are true about the operation of a full-duplex Ethernet network?

(Choose three.)

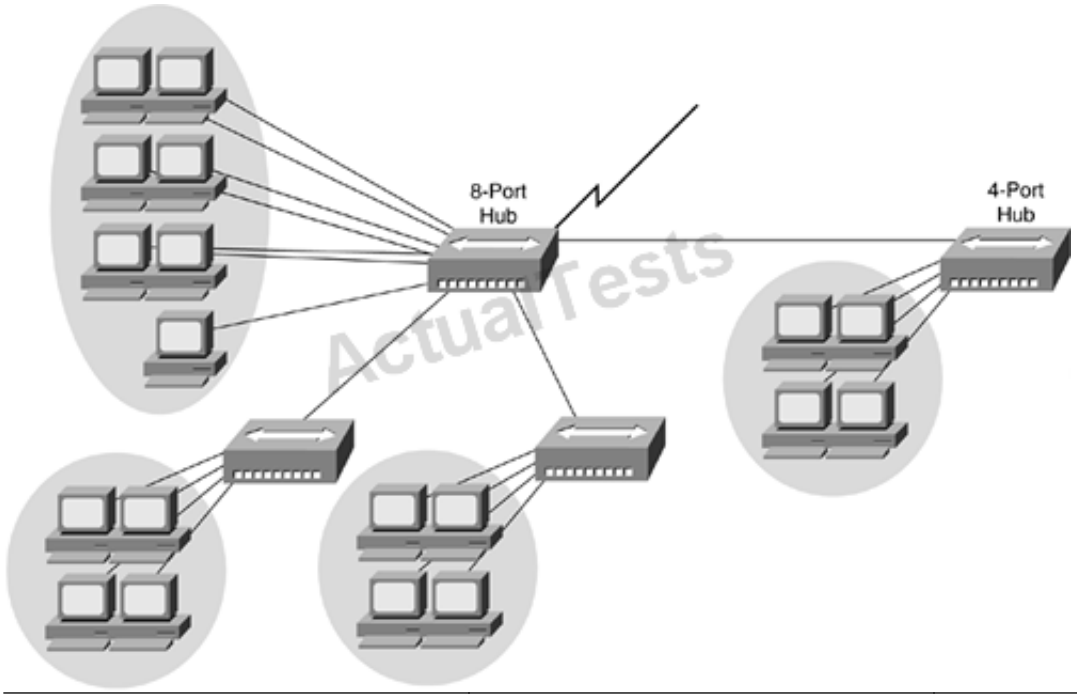
**A.** There are no collisions in full-duplex mode.
**B.** A dedicated switch port is required for each full-duplex node.
**C.** Ethernet hub ports are preconfigured for full-duplex mode.
**D.** In a full-duplex environment, the host network card must check for the availability of the network media before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

**Answer: A,B,E**

**Explanation:**

**QUESTION NO: 131**

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



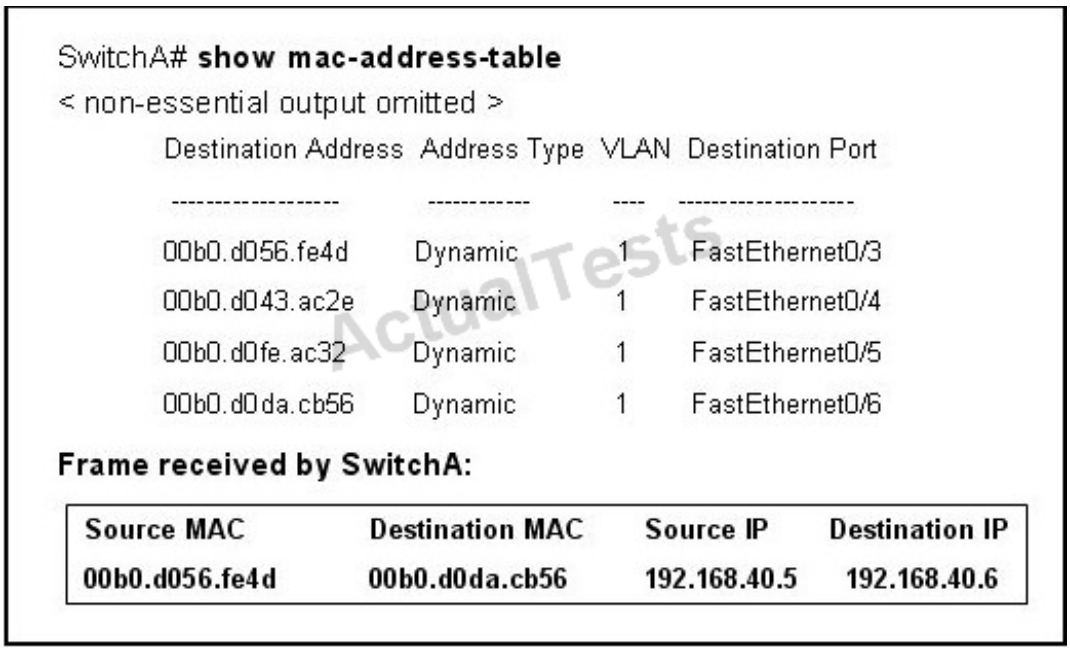
**A.** broadcast domains
**B.** repeater domains
**C.** Ethernet collisions
**D.** signal amplification
**E.** Ethernet broadcasts

**Answer: C**

**Explanation:**

**QUESTION NO: 132**

Refer to the exhibit.




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: B**

**Explanation:**

**QUESTION NO: 133**

Refer to the exhibit.

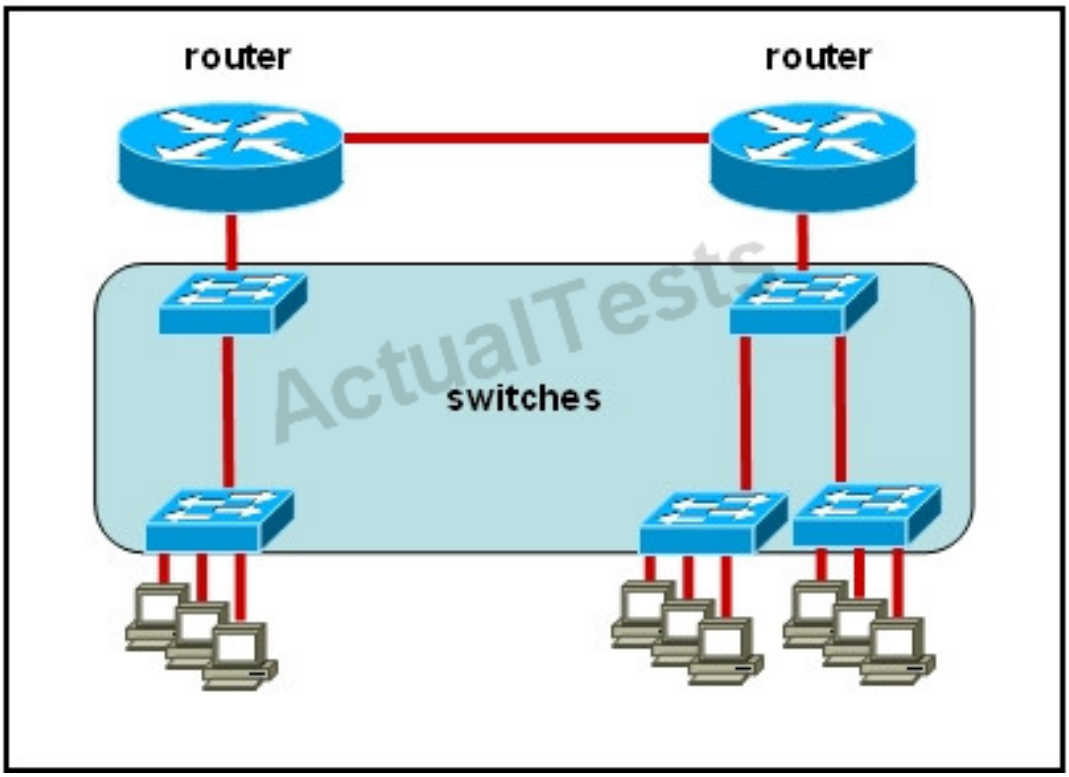

A network administrator has configured a Catalyst 2950 switch for remote management by pasting into the console the configuration commands that are shown in the exhibit. However, a Telnet session cannot be successfully established from a remote host. What should be done to fix this problem?

**A.** Change the first line to interface fastethernet 0/1.
**B.** Change the first line to interface vlan 0/1.
**C.** Change the fifth line to ip default-gateway 192.168.17.241.
**D.** Change the fifth line to ip route 0.0.0.0 0.0.0.0 192.168.17.1.
**E.** Change the sixth line to line con 0.

**Answer: C**
**Explanation:**

**QUESTION NO: 134**

Refer to the exhibit.




All devices attached to the network are shown. How many collision domains are present in this network?

**A.** 2
**B.** 3
**C.** 6
**D.** 9
**E.** 15

**Answer: E**
**Explanation:**

**QUESTION NO: 135**

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 NIC in a desktop PC with a new NIC. The NIC in the PC configuration is set to "100 Mb Half." Now the PC has intermittent connectivity and loss of communication so the administrator began troubleshooting on the switch. Using the switch output shown, what is the cause of the problem?

**A.** Input flow control is off.
**B.** Encapsulation is set to ARPA.
**C.** The switch is set to full-duplex.
**D.** The port is administratively down.
**E.** Fast Ethernet is incompatible with a megabit NIC.
**F.** The counters were not cleared after the hardware was replaced.

**Answer: C**
**Explanation:**

**QUESTION NO: 136**

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**
**Explanation:**

**QUESTION NO: 137**

Which class of IP address will provide sufficient addresses for 66,000 or more hosts?

**A.** Class A
**B.** Class B
**C.** Class C
**D.** Class D
**E.** Class E

**Answer: A**
**Explanation:**

**QUESTION NO: 138**

From which IP address class can 15 bits be borrowed to create subnets?

**A.** A
**B.** B
**C.** C
**D.** D
**E.** E

**Answer: A**
**Explanation:**

**QUESTION NO: 139**

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: B,D**
**Explanation:**

**QUESTION NO: 140**

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:**

**QUESTION NO: 141**

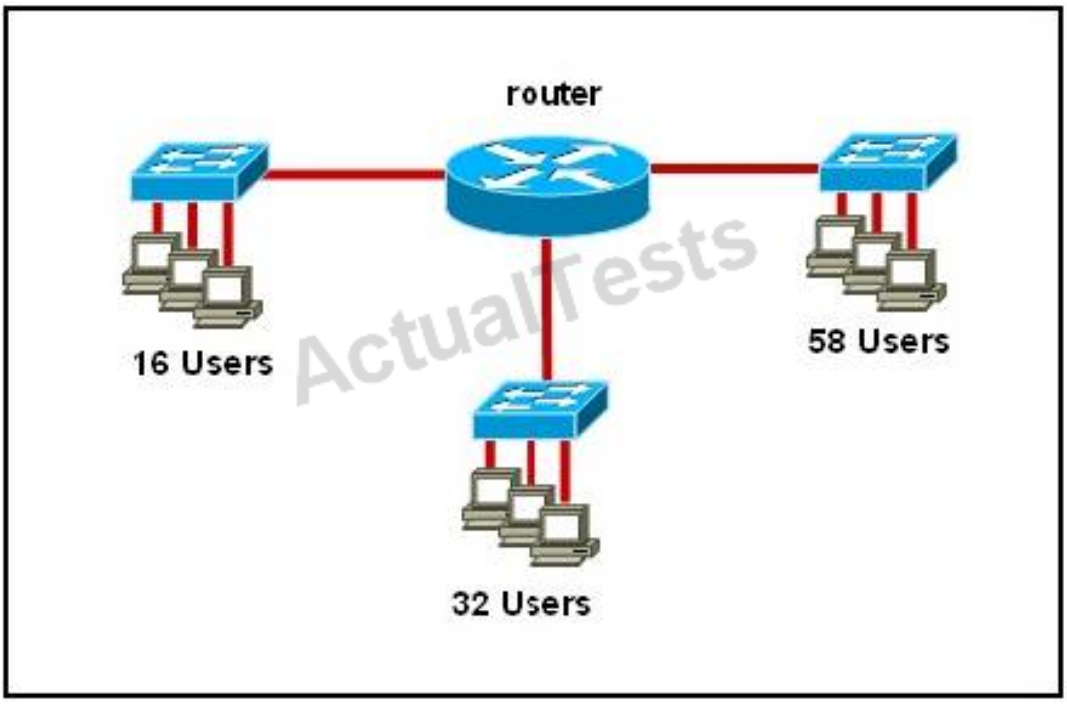
Which IP addresses are valid for hosts belonging to the 10.1.160.0/20 subnet? (Choose three.)

**A.** 10.1.168.0
**B.** 10.1.176.1
**C.** 10.1.174.255
**D.** 10.1.160.255
**E.** 10.1.160.0
**F.** 10.1.175.255

**Answer: A,C,D**
**Explanation:**

**QUESTION NO: 142**

Refer to the exhibit.




The IP address space of 128.107.7.0/24 has been allocated for all devices on this network. All devices must use the same subnet mask and all subnets are usable. Which subnet mask is required to apply the allocated address space to the configuration that is shown?

**A.** 255.255.254.0
**B.** 255.255.255.0
**C.** 255.255.255.128
**D.** 255.255.255.192
**E.** 255.255.255.224

**Answer: D**
**Explanation:**

**QUESTION NO: 143**

Refer to the exhibit.

```
RouterA# telnet www.cisco.co
Translating "www.cisco.co"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer
address
```

Why did the telnet attempt to www.cisco.co from RouterA fail?

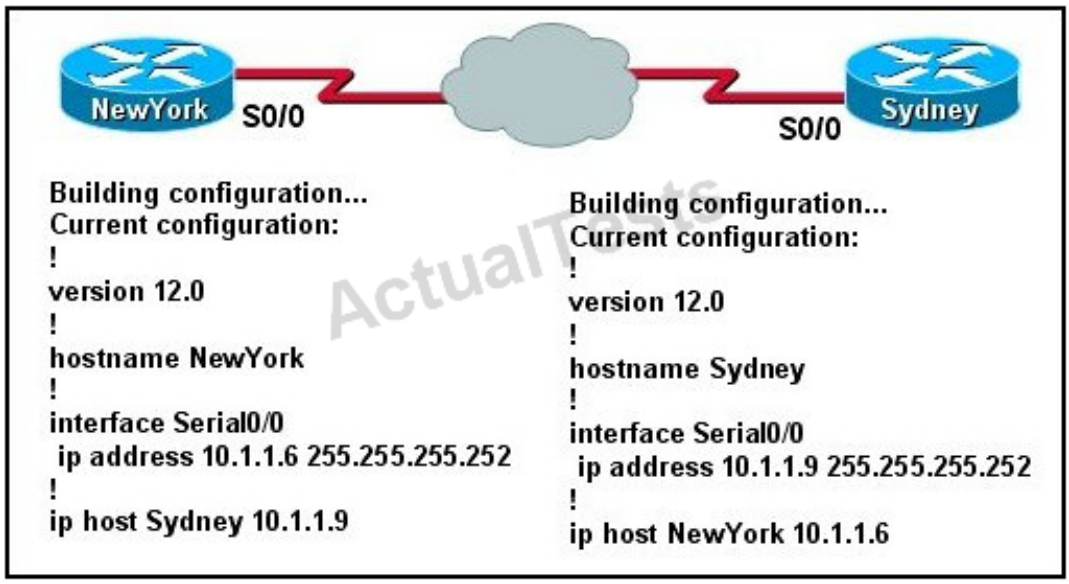
**A.** A route to www.cisco.co in the RouterA routing table is missing from the routing table.

**B.** The name www.cisco.co was not spelled out correctly.
**C.** A DNS name-server is not configured on RouterA.
**D.** The telnet command is not enabled on RouterA.

**Answer: C**
**Explanation:**

**QUESTION NO: 144**

Refer to the topology and partial configurations shown in the exhibit.




The network administrator has finished configuring the NewYork and Sydney routers and issues the command ping Sydney from the NewYork router. The ping fails. What command or set of commands should the network administrator issue to correct this problem?

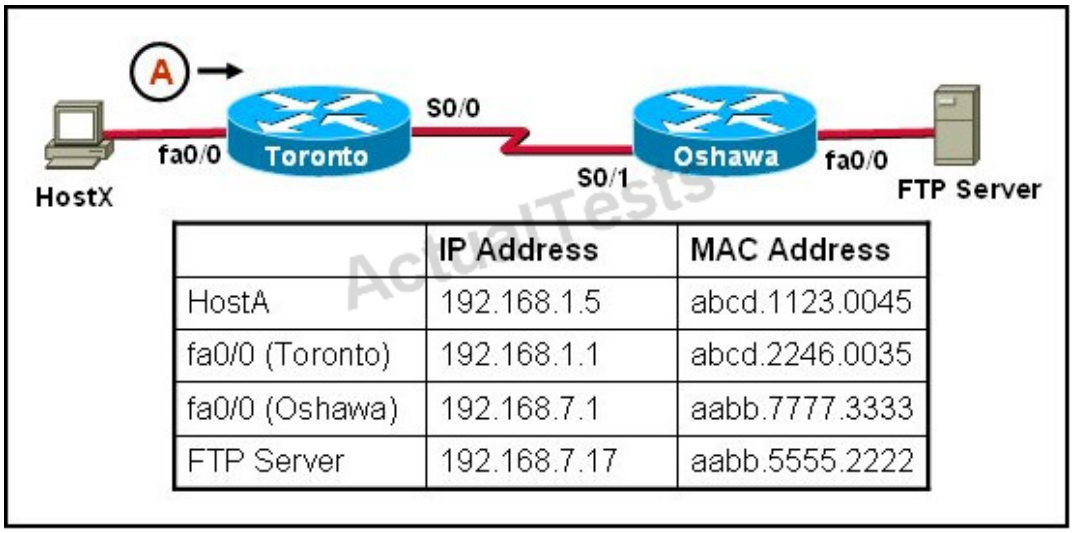
**A.** Sydney(config)# interface s0/0
Sydney(config-if)# cdp enable
**B.** Sydney(config)# interface s0/0
Sydney(config-if)# no shut
**C.** Sydney(config)# line vty 0 4
Sydney(config)# login
Sydney(config)# password Sydney
**D.** Sydney(config)# ip host Sydney 10.1.1.9
**E.** Sydney(config)# interface s0/0
Sydney(config-if)# ip address 10.1.1.5 255.255.255.252
NewYork(config)# ip host Sydney 10.1.1.5

**Answer: E**

**Explanation:**

**QUESTION NO: 145**

Refer to the exhibit.




| | IP Address | MAC Address |
|---|---|---|
| HostA | 192.168.1.5 | abcd.1123.0045 |
| fa0/0 (Toronto) | 192.168.1.1 | abcd.2246.0035 |
| fa0/0 (Oshawa) | 192.168.7.1 | aabb.7777.3333 |
| FTP Server | 192.168.7.17 | aabb.5555.2222 |



HostX is transferring a file to the FTP server. Point A represents the frame as it goes toward the Toronto router. What will the Layer 2 destination address be at this point?

**A.** abcd.1123.0045
**B.** 192.168.7.17
**C.** aabb.5555.2222
**D.** 192.168.1.1
**E.** abcd.2246.0035

**Answer: E**
**Explanation:**

**QUESTION NO: 146**

Which IOS command is used to initiate a login into a VTY port on a remote router?

**A.** router# login
**B.** router# telnet
**C.** router# trace
**D.** router# ping
**E.** router(config)# line vty 0 5

**F.** router(config-line)# login

**Answer: B**
**Explanation:**

**QUESTION NO: 147**

Which IOS command results in the output shown in the following?

**--- System Configuration Dialog ---**

**At any point you may enter a question mark '?' for help.**

**Use ctrl-c to abort configuration dialog at any prompt.**

**Default settings are in square brackets '[]'.**

Would you like to enter the initial configuration dialog? [yes/no]:

**A.** router# configure terminal
**B.** router# configure memory
**C.** router# copy running-config startup-config
**D.** router# copy startup-config running-config
**E.** router# setup

**Answer: E**
**Explanation:**

**QUESTION NO: 148**

The following commands are entered on the router:

**Burbank(config)# enable secret fortress**

**Burbank(config)# line con 0**

**Burbank(config-line)# login**

**Burbank(config-line)# password n0way1n**

**Burbank(config-line)# exit**

**Burbank(config)# service password-encryption**

What is the purpose of the last command entered?

**A.** to require the user to enter an encrypted password during the login process
**B.** to prevent the vty, console, and enable passwords from being displayed in plain text in the configuration files
**C.** to encrypt the enable secret password
**D.** to provide login encryption services between hosts attached to the router

**Answer: B**
**Explanation:**

**QUESTION NO: 149**

At startup, what does a router do if it cannot access a configuration file?

**A.** It shuts down in 10 seconds.
**B.** It enters global configuration mode.
**C.** It prompts the user to enter setup mode.
**D.** It displays the prompt for user exec mode.
**E.** It prompts for the location of the configuration file.

**Answer: C**
**Explanation:**

**QUESTION NO: 150**

At the global configuration prompt, the administrator has just entered the following command on a router that has not been previously configured for RIP:

**RouterA(config)# router rip**

What state is the router now in after executing the command?

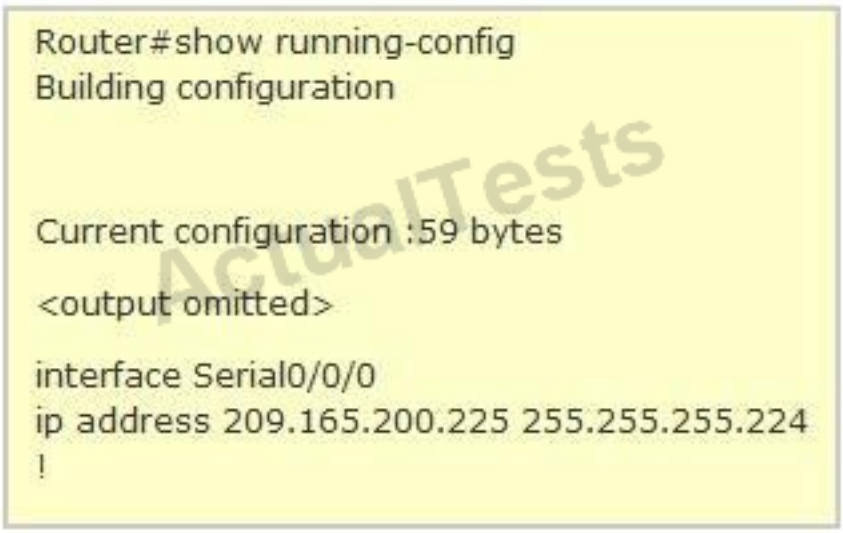
**A.** The RIP process has started, but no updates are being sent.
**B.** The RIP process has started, and by default all updates are being sent RIPv1.
**C.** The RIP process has started, and by default all updates are being sent RIPv2.
**D.** The router has entered router configuration mode but the RIP process has not started.

**Answer: D**
**Explanation:**

**Topic 4, Multiple Choice Questions Set D**

**QUESTION NO: 151**

Refer to the exhibit.




Based only on the command output, what is true about interface Serial 0/0/0?

**A.** A ping to the remote address 209.165.200.226 will be successful.
**B.** The configuration is incomplete, which will cause the interface status to be “Serial0/0/0 is down, line protocol is down”.
**C.** The configuration is incomplete, which will cause the interface status to be “Serial0/0/0 is up, line protocol is down”.
**D.** The interface is using Cisco HDLC for the Layer 2 encapsulation.

**Answer: D**
**Explanation:**

**QUESTION NO: 152**

A receiving host has failed to receive all of the segments that it should acknowledge. What can the host do to improve the reliability of this communication session?

**A.** decrease the window size

**B.** use a different source port for the session
**C.** decrease the sequence number
**D.** obtain a new IP address from the DHCP server
**E.** start a new session using UDP

**Answer: A**
**Explanation:**

**QUESTION NO: 153**

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:**

**QUESTION NO: 154**

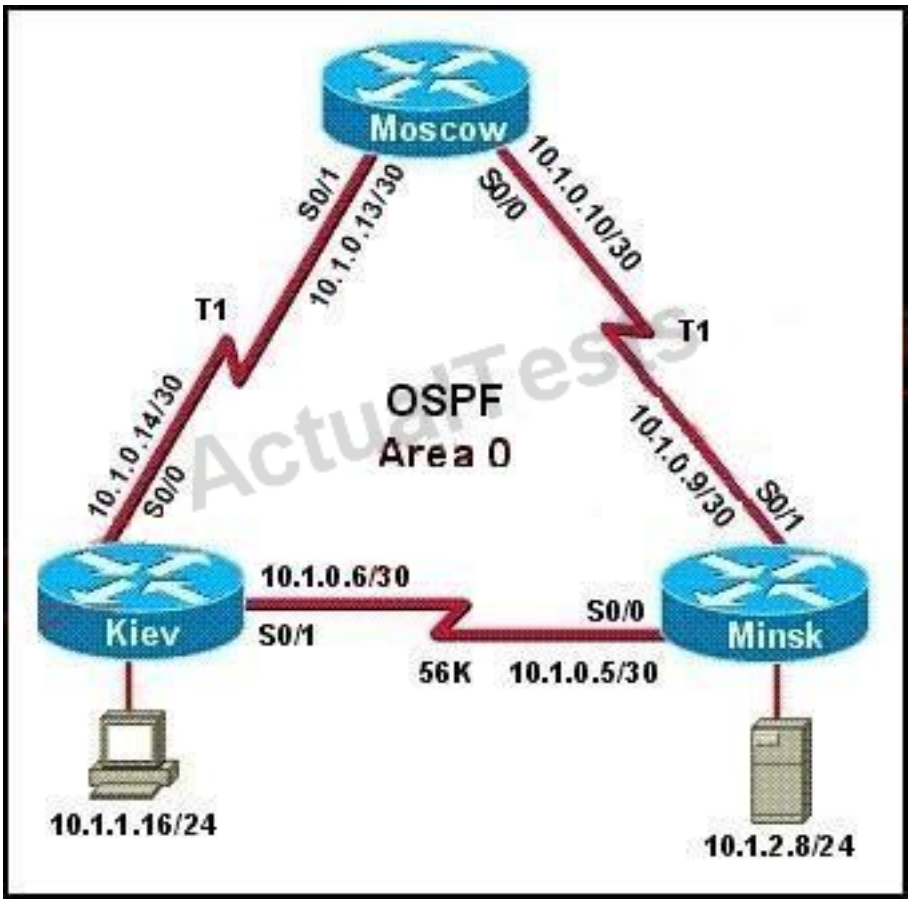
How does a switch differ from a hub?

**A.** A switch does not induce any latency into the frame transfer time.
**B.** A switch tracks MAC addresses of directly-connected devices.
**C.** A switch operates at a lower, more efficient layer of the OSI model.
**D.** A switch decreases the number of broadcast domains.
**E.** A switch decreases the number of collision domains.

**Answer: B**
**Explanation:**

**QUESTION NO: 155**

Refer to the exhibit. The host in Kiev sends a request for an HTML document to the server in Minsk. What will be the source IP address of the packet as it leaves the Kiev router?




**A.** 10.1.0.1
**B.** 10.1.0.5
**C.** 10.1.0.6
**D.** 10.1.0.14
**E.** 10.1.1.16
**F.** 10.1.2.8

**Answer: E**
**Explanation:**

**QUESTION NO: 156**

The network manager has requested a 300-workstation expansion of the network. The workstations are to be installed in a single broadcast domain, but each workstation must have its own collision domain. The expansion is to be as cost-effective as possible while still meeting the requirements. Which three items will adequately fulfill the request? (Choose three).

**A.** one IP subnet with a mask of 255.255.254.0
**B.** two IP subnets with a mask of 255.255.255.0
**C.** seven 48-port hubs
**D.** seven 48-port switches

**E.** one router interface
**F.** seven router interfaces

**Answer: A,D,E**

**Explanation:**

**QUESTION NO: 157**

Which of the following describes the roles of devices in a WAN? (Choose three.)

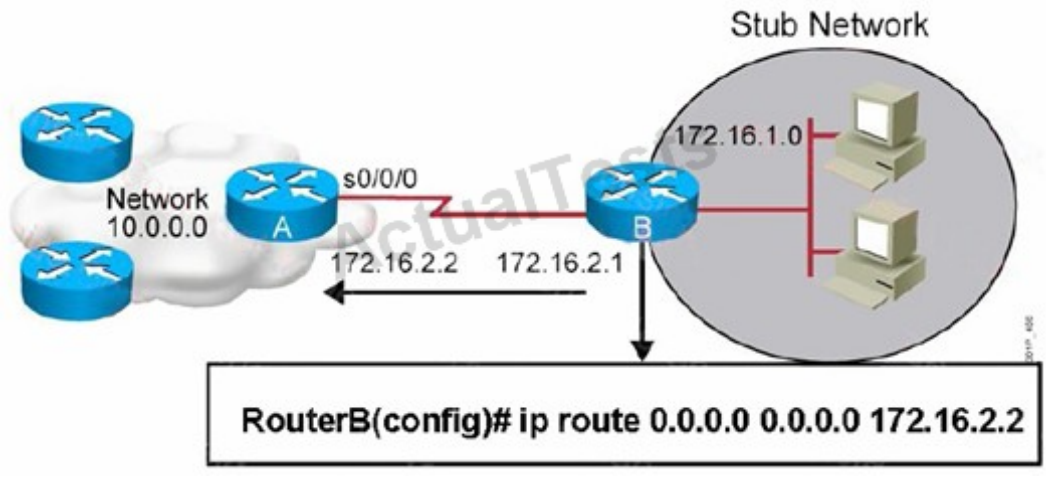
**A.** A CSU/DSU terminates a digital local loop.
**B.** A modem terminates a digital local loop.
**C.** A CSU/DSU terminates an analog local loop.
**D.** A modem terminates an analog local loop.
**E.** A router is commonly considered a DTE device.
**F.** A router is commonly considered a DCE device.

**Answer: A,D,E**

**Explanation:**

**QUESTION NO: 158**

Refer to the exhibit.




Which two statements are correct? (Choose two.)

**A.** This is a default route.
**B.** Adding the subnet mask is optional for the ip route command.

**C.** This will allow any host on the 172.16.1.0 network to reach all known destinations beyond RouterA.
**D.** This command is incorrect, it needs to specify the interface, such as s0/0/0 rather than an IP address.
**E.** The same command needs to be entered on RouterA so that hosts on the 172.16.1.0 network can reach network 10.0.0.0.

**Answer: A,C**
**Explanation:**

**QUESTION NO: 159**

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:**

**QUESTION NO: 160**

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.cb56 | 192.168.40.5 | 192.168.40.6 |

SwitchA receives the frame with the addressing shown. 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 Fa0/3 only.
**C.** It will flood the frame out all ports.
**D.** It will flood the frame out all ports except Fa0/3.

**Answer: D**
**Explanation:**

**QUESTION NO: 161**

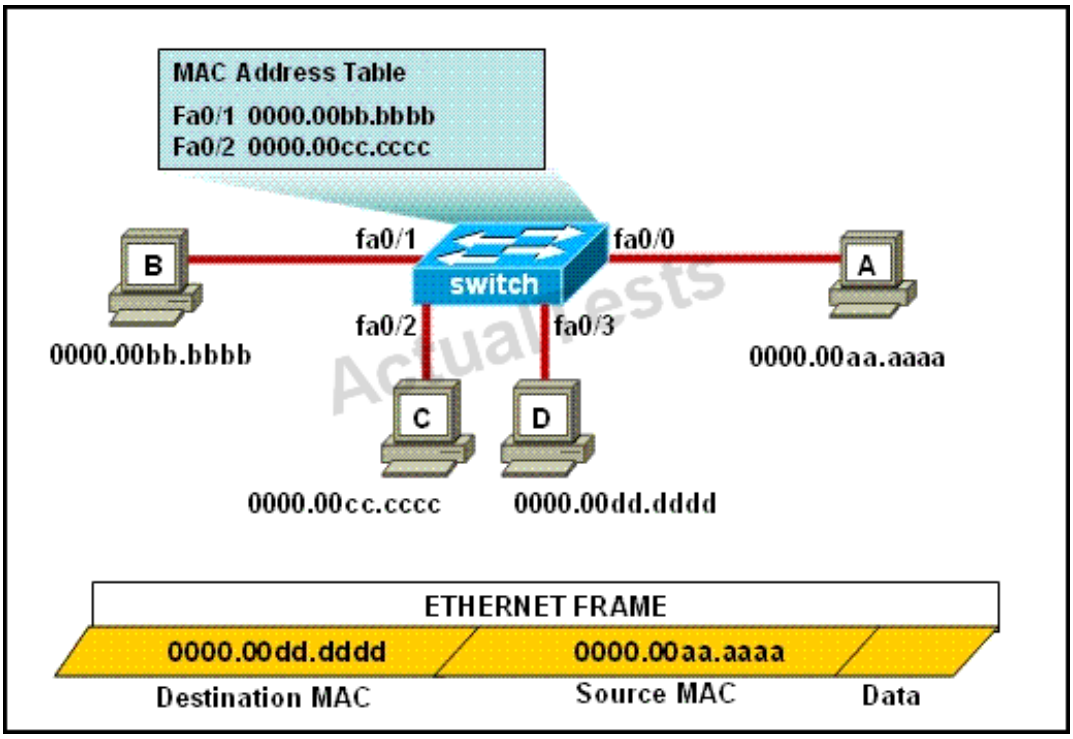
Which two statements describe the operation of the CSMA/CD access method? (Choose two.)

**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 algorithm. When the backoff delay period has expired, all stations have equal priority to transmit data.
**F.** After a collision, all stations involved run an identical backoff algorithm and then synchronize with each other prior to transmitting data.

**Answer: B,E**
**Explanation:**

**QUESTION NO: 162**

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.)

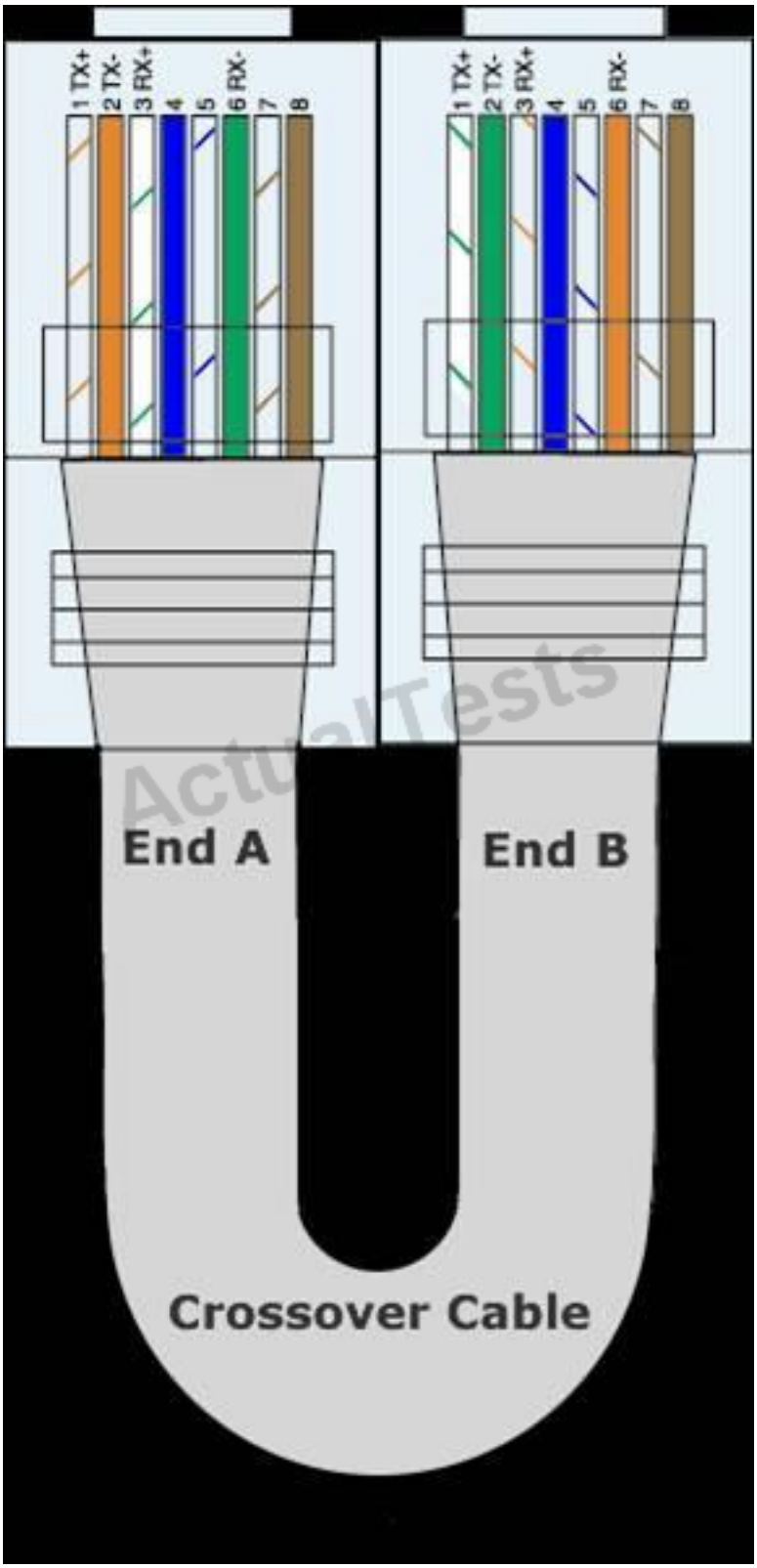
**A.** The MAC address of 0000.00aa.aaaa will be added to the MAC address table.
**B.** The MAC address of 0000.00dd.dddd will be added to the MAC address table.
**C.** The frame will be forwarded out port fa0/3 only.
**D.** The frame will be forwarded out fa0/1, fa0/2, and fa0/3.
**E.** The frame will be forwarded out all the active ports.

**Answer: A,D**

**Explanation:**

**QUESTION NO: 163**

Refer to the exhibit.




The wire scheme that is shown is terminated at each end with an RJ-45 connector. What cable type does the wire diagram represent?

**A.** an Ethernet straight-through cable
**B.** a serial crossover cable
**C.** a serial straight-through cable
**D.** an Ethernet crossover cable

**E.** a rollover cable

**Answer: D**

**Explanation:**

**QUESTION NO: 164**

A company has placed a networked PC in a lobby so guests can have access to the corporate directory. A security concern is that someone will disconnect the directory PC and re-connect their laptop computer and have access to the corporate network. For the port servicing the lobby, which three configuration steps should be performed on the switch to prevent this?

(Choose three.)

**A.** Enable port security.
**B.** Create the port as a trunk port.
**C.** Create the port as an access port.
**D.** Create the port as a protected port.
**E.** Set the port security aging time to 0.
**F.** Statically assign the MAC address to the address table.
**G.** Configure the switch to discover new MAC addresses after a set time of inactivity.

**Answer: A,C,F**

**Explanation:**

**QUESTION NO: 165**

If a host on a network has the address 172.16.45.14/30, what is the address of the subnetwork to which this host belongs?

**A.** 172.16.45.0
**B.** 172.16.45.4
**C.** 172.16.45.8
**D.** 172.16.45.12
**E.** 172.16.45.16

**Answer: D**

**Explanation:**

**QUESTION NO: 166**

Given a Class C IP address subnetted with a /30 subnet mask, how many valid host IP addresses are available on each of the subnets?

**A.** 1
**B.** 2
**C.** 4
**D.** 8
**E.** 252
**F.** 254

**Answer: B**
**Explanation:**

**QUESTION NO: 167**

What is the subnet address of 172.16.159.159/22?

**A.** 172.16.0.0
**B.** 172.16.128.0
**C.** 172.16.156.0
**D.** 172.16.159.0
**E.** 172.16.159.128
**F.** 172.16.192.0

**Answer: C**
**Explanation:**

**QUESTION NO: 168**

Refer to the exhibit.

Which default gateway address should be assigned to HostA?

**A.** 192.168.1.1
**B.** 192.168.1.65
**C.** 192.168.1.66
**D.** 192.168.1.129
**E.** 10.1.1.1
**F.** 10.1.1.2

**Answer: B**

**Explanation:**

**QUESTION NO: 169**

Refer to the exhibit.

| Net bits | Subnet mask | total-addresses per subnet |
|---|---|---|
| /20 | 255.255.240.0 | 4096 |
| /21 | 255.255.248.0 | 2048 |
| /22 | 255.255.252.0 | 1024 |
| /23 | 255.255.254.0 | 512 |
| /24 | 255.255.255.0 | 256 |
| /25 | 255.255.255.128 | 128 |
| /26 | 255.255.255.192 | 64 |
| /27 | 255.255.255.224 | 32 |
| /28 | 255.255.255.240 | 16 |
| /29 | 255.255.255.248 | 8 |
| /30 | 255.255.255.252 | 4 |



The enterprise has decided to use the network address 172.16.0.0. The network administrator needs to design a classful addressing scheme to accommodate the three subnets, with 30, 40, and 50 hosts, as shown. What subnet mask would accommodate this network?

**A.** 255.255.255.192
**B.** 255.255.255.224
**C.** 255.255.255.240
**D.** 255.255.255.248
**E.** 255.255.255.252

**Answer: A**
**Explanation:**

**QUESTION NO: 170**

In the configuration of NAT, what does the keyword overload signify?

**A.** When bandwidth is insufficient, some hosts will not be allowed to access network translation.
**B.** The pool of IP addresses has been exhausted.
**C.** Multiple internal hosts will use one IP address to access external network resources.
**D.** If the number of available IP addresses is exceeded, excess traffic will use the specified address pool.

**Answer: C**
**Explanation:**

**QUESTION NO: 171**

Refer to the exhibit.

```
RouterA# show running-config
Building configuration...

Current configuration : 1062 bytes
!
version 12.3
!
hostname RouterA
!
boot-start-marker
boot-end-marker
!
enable password cisco
!
no aaa new-model
ip subnet-zero
ip cef
!
no ip domain lookup
ip domain name cisco.com
ip name-server 209.165.202.129
!
<output omitted>
```



Based on the RouterA configuration shown, and assuming that all routing is operational, DNS lookups to 209.165.202.129 will fail for which reason?

**A.** Cisco.com will be incorrectly appended to all non-Cisco DNS queries.
**B.** DHCP has not been enabled or configured.
**C.** AAA must be configured for authentication of the DNS server.
**D.** DNS queries are currently disabled.

**Answer: D**

**Explanation:**

**QUESTION NO: 172**

Which of the following describe Class A host addresses? (Choose three.)

**A.** The decimal value of the first octet can range from 1 to 126.
**B.** The decimal value of the first octet can range from 1 to 192.
**C.** The first octet represents the entire network portion of the address.
**D.** The default subnet mask for a Class A network is 255.255.0.0.
**E.** The value of the first binary place in the first octet must be 0.
**F.** The first two binary bits of the address must be 00.

**Answer: A,C,E**
**Explanation:**

**QUESTION NO: 173**

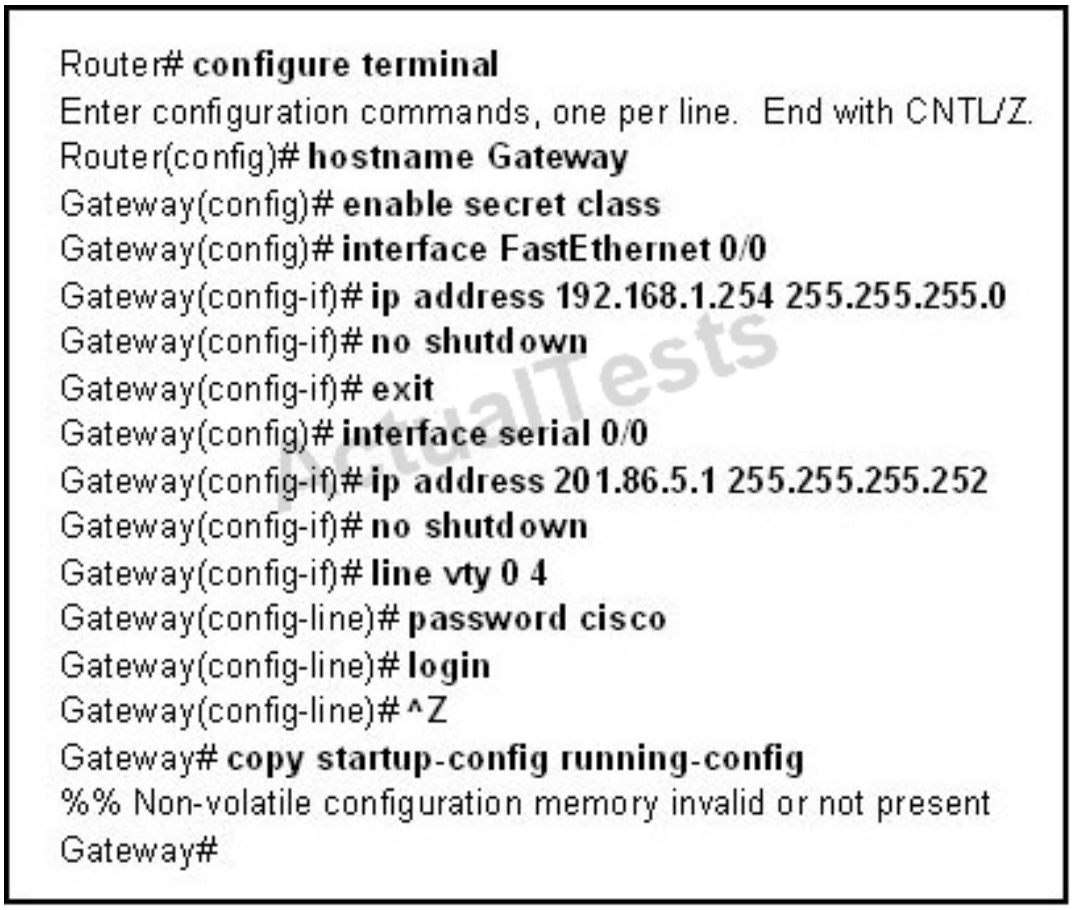
What will cause a router to enter setup mode? (Choose two.)

**A.** The setup command was issued from the privileged mode prompt.
**B.** The IOS is corrupt.
**C.** The IOS is missing.
**D.** The configuration file is missing in NVRAM.
**E.** Boot system commands are misconfigured in the running-configuration.
**F.** The configuration register is set to 0x2100.

**Answer: A,D**
**Explanation:**

**QUESTION NO: 174**

Refer to the exhibit.




A technician enters the exhibited commands to configure a new router, but receives an error message when attempting to save the configuration. What can the technician do to correct the problem?

**A.** Enter the correct command.
**B.** Enter the command at the correct prompt.
**C.** Upgrade the amount of flash memory in the router.
**D.** Erase NVRAM to make room for the configuration file.
**E.** Add NVRAM because there is not enough room for the configuration file.

**Answer: A**

**Explanation:**

**QUESTION NO: 175**

What two things does a router do when it forwards a packet? (Choose two.)

**A.** switches the packet to the appropriate outgoing interfaces
**B.** computes the destination host address
**C.** determines the next hop on the path

**D.** updates the destination IP address
**E.** forwards ARP requests

**Answer: A,C**

**Explanation:**

**QUESTION NO: 176**

The network administrator is configuring a Cisco router. The prompt on the screen is:

**Router(config-if)#.**

What is true of this prompt? (Choose three.)

**A.** An interface password can be set at this prompt.
**B.** Settings that affect all router interfaces can be globally configured at this prompt.
**C.** An interface can be activated or deactivated from this prompt.
**D.** The administrator will arrive at this prompt by typing interface fa0/0 from the global configuration mode.
**E.** The administrator will arrive at this prompt by typing configure terminal from the EXEC prompt.
**F.** An interface IP address can be configured at this prompt.

**Answer: C,D,F**

**Explanation:**

**QUESTION NO: 177**

Refer to the exhibit.


The network administrator is testing connectivity from the branch router to the newly installed application server. What is the most likely reason for the first ping having a success rate of only 60

percent?

**A.** The network is likely to be congested, with the result that packets are being intermittently dropped.
**B.** The branch router had to resolve the application server MAC address.
**C.** There is a short delay while NAT translates the server IP address.
**D.** A routing table lookup delayed forwarding on the first two ping packets.
**E.** The branch router LAN interface should be upgraded to FastEthernet.

**Answer: B**
**Explanation:**

**QUESTION NO: 178**

On a Cisco router which two router modes can be protected by a password? (Choose two.)

**A.** user mode
**B.** privileged mode
**C.** global configuration mode
**D.** router configuration mode
**E.** interface configuration mode

**Answer: A,B**
**Explanation:**

**QUESTION NO: 179**

Refer to the exhibit.

```
***** Router output from RouterA *****

RouterA# show ip route
        <text omitted>
Gateway of last resort is not set

     172.16.0.0/24 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, Ethernet0/1
     10.0.0.0/30 is subnetted, 1 subnets
C       10.255.255.200 is directly connected, Serial0/0
RouterA#
RouterA# show ip protocol
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 8 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Redistributing: rip
  Default version control: send version 2, receive version 2
    Interface             Send  Recv  Triggered RIP  Key-chain
    Serial0/0             2     2
    Loopback0             2     2
  Automatic network summarization is in effect
  Maximum path: 4
  Routing for Networks:
    10.0.0.0
    172.16.0.0
  Passive Interface(s):
    Ethernet0/1
  Routing Information Sources:
    Gateway         Distance      Last Update
    10.255.255.202       120      00:02:53
  Distance: (default is 120)

RouterA#
```

```
***** Router output from RouterB *****

RouterB# show ip route
        <text omitted>
Gateway of last resort is not set

C    192.168.10.0/24 is directly connected, Ethernet0/1
R    172.16.0.0/16 [120/1] via 10.255.255.201, 00:00:26, Serial0/0
     10.0.0.0/30 is subnetted, 1 subnets
C       10.255.255.200 is directly connected, Serial0/0
RouterB#
RouterB# show ip protocol
Routing Protocol is "rip"
  Sending updates every 30 seconds, next due in 27 seconds
  Invalid after 180 seconds, hold down 180, flushed after 240
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Redistributing: rip
  Default version control: send version 1, receive any version
    Interface             Send  Recv  Triggered RIP  Key-chain
    Serial0/0             1     1 2
    Loopback0             1     1 2
  Automatic network summarization is in effect
  Maximum path: 4
  Routing for Networks:
    10.0.0.0
    192.168.10.0
  Passive Interface(s):
    Ethernet0/1
  Routing Information Sources:
    Gateway         Distance      Last Update
    10.255.255.201       120      00:00:04
  Distance: (default is 120)

RouterB#
```

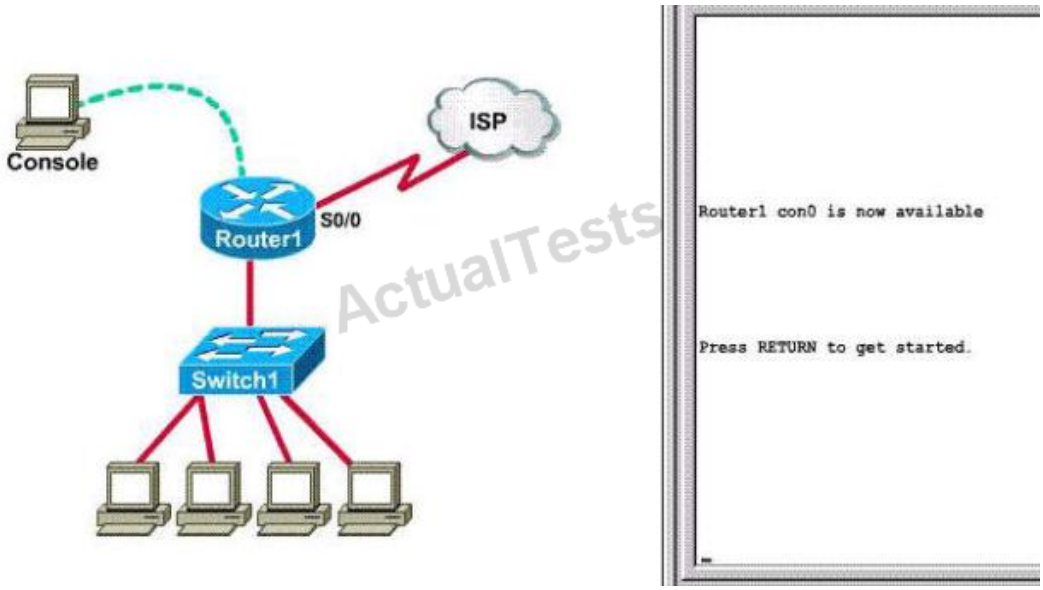
A small company with two locations has just connected the locations together with routers and a serial connection. The routers are using RIP to learn the network topology. RouterB has learned a network from RouterA, but router RouterA is not learning from RouterB. Using the output shown, what is the most likely problem?

**A.** RIP routing is configured but not enabled on RouterA.
**B.** One or more network statements are incorrect on RouterA.
**C.** One or more network statements are incorrect on RouterB.
**D.** The RIP versions on RouterA and RouterB are mismatched.
**E.** RIP is an interior gateway protocol and cannot route for multiple network classes.

**Answer: D**
**Explanation:**

**QUESTION NO: 180**

Refer to the topology below.




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

**A.** 192.168.93.15
**B.** 192.168.93.31
**C.** 192.168.93.63
**D.** 192.168.93.127
**E.** 255.255.255.255

**Answer: A**
**Explanation:**

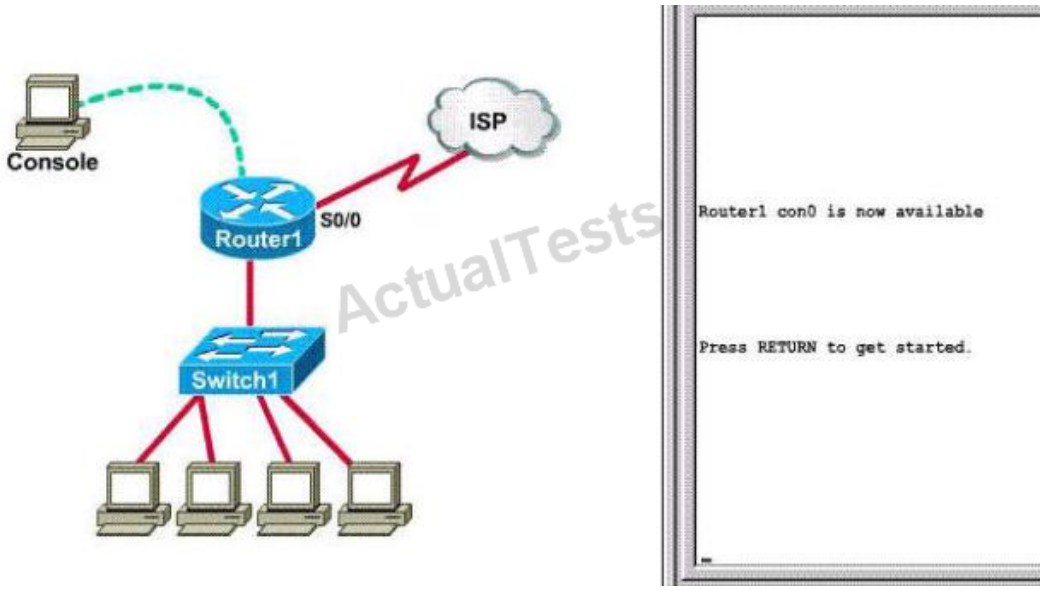
The "show running-configuration" and "show startup-configuration" have been disabled as stated above so we should use the show ip interface command to get information about the LAN network connected to Router1.

```
Router1#show ip interface
FastEthernet0/0 is up, line protocol is up (connected)
  Internet address is 192.168.93.1/28
  Broadcast address is 255.255.255.255
  Address determined by setup command
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is disabled
  Outgoing access list is not set
  Inbound  access list is not set
.....
<output omitted>
```

From the output we learn that the ip address of the FastEthernet interface of Router1 is 192.168.93.1 and the subnet mask is /28. Therefore:
Increment: 16 (/28=1111 1111.1111 1111.1111 1111.1111 0000) Network address: 192.168.93.0Broadcast address: 192.168.93.15 (15 = 0 + 16 - 1)
-> The broadcast address of this subnetwork is 192.168.93.15

**QUESTION NO: 181**

Refer to the topology below.




What is the bandwidth on the WAN interface of Router1?

**A.** 16 Kbit/sec
**B.** 32 Kbit/sec
**C.** 64 Kbit/sec
**D.** 128 Kbit/sec
**E.** 512 Kbit/sec
**F.** 1544 Kbit/sec

**Answer: E**

**Explanation:**

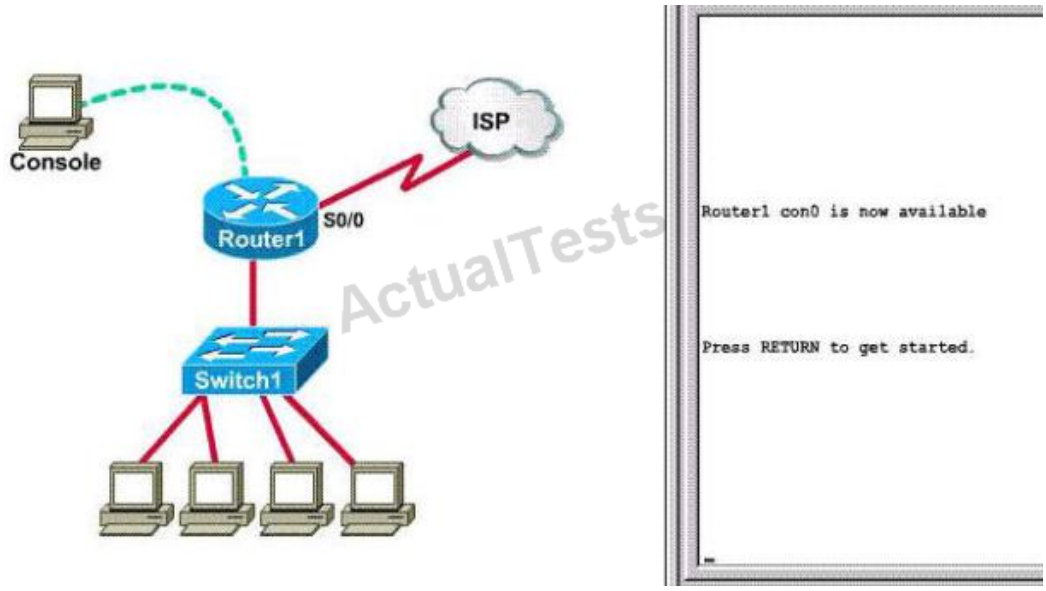
To find out the bandwidth on the WAN (serial) interface of Router1 we need to use the show interfaces serial 0/0 command:

```
Router1#show interfaces serial 0/0
Serial0/0 is administratively down, line protocol is down
  Hardware is PowerQUICC Serial
  Internet address is 10.11.12.13/30
  MTU 1500 bytes, BW 512 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
  Last input 00:00:05, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes);Total output drops: 0
```

Therefore the bandwidth on the WAN is 512 Kbit/sec.

**QUESTION NO: 182**

Refer to the topology below.



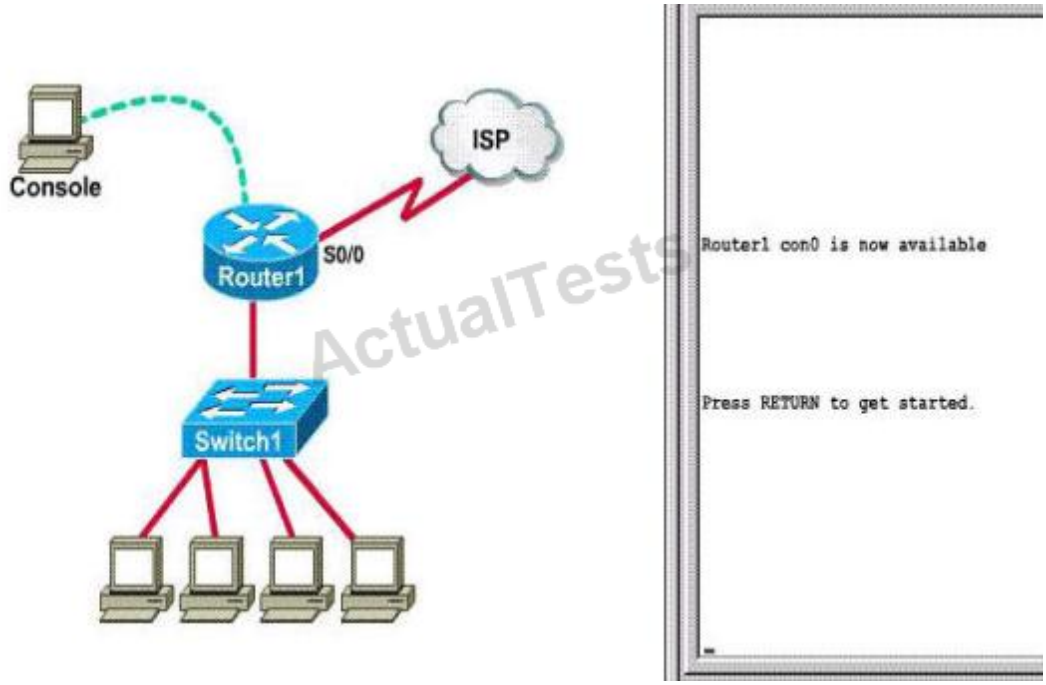

What interfaces on Router1 have not had any configurations applied? (Choose two)

**A.** Ethernet 0
**B.** FastEthenet 0/0
**C.** FastEthernet 0/1
**D.** Serial 0
**E.** Serial 0/0
**F.** Serial 0/1

**Answer: C,F**
**Explanation:**
Use the show ip interface brief to identify what interfaces Router 1 have. Notice that Router1 does not have Ethernet 0 and Serial 0 interfaces. FastEthernet 0/0 and Serial 0/0 were configured with their IP addresses therefore only FastEthernet 0/1 and Serial0/1 have not had any configurations applied.

**QUESTION NO: 183**

Refer to the topology below.



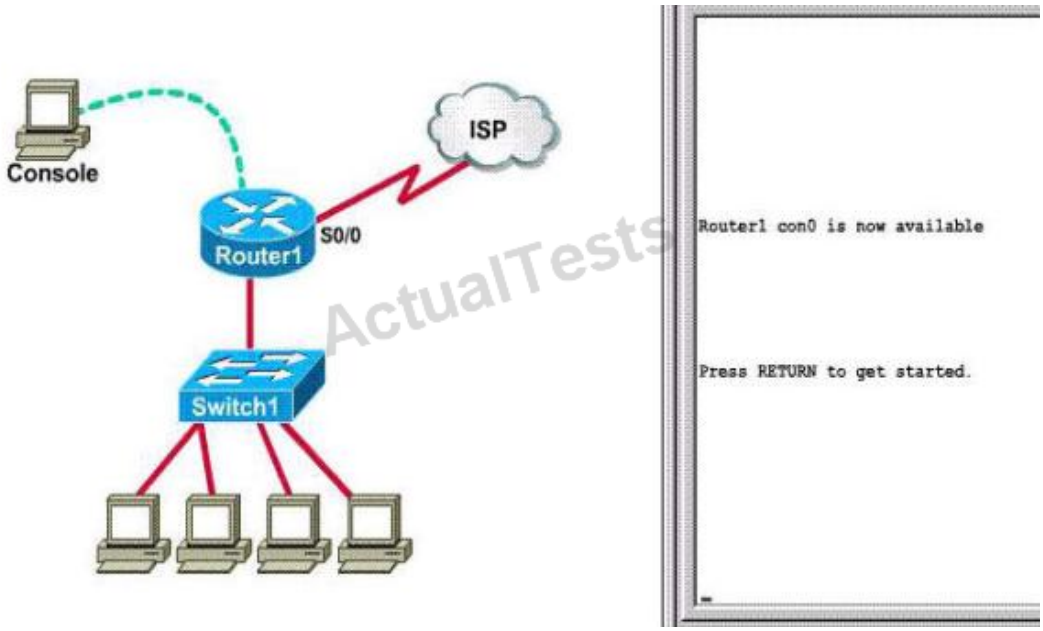

Including the address on the Router1 FastEthernet interface, how many hosts can have IP addresses on the LAN to which Router1 is connected?

**A.** 6
**B.** 14
**C.** 62
**D.** 128

**Answer: B**
**Explanation:**
The mask address of interface Fa0/0 of Router1 is /28 (as shown in question 1), which has four 0 bits (1111 1111.1111 1111.1111 1111.1111 **0000**). Therefore there are 16 – 2 = 14 assignable IP addresses for hosts on the LAN.

**QUESTION NO: 184**

Refer to the topology below.




The hosts in the LAN are not able to connect to the Internet. Which commands will correct this issue?

**A.** Router1(conf)# interface fa0/0
Router1(conf-if)# no shutdown
**B.** Routed (conf)# interface fa0/1
Router1(conf-if)# no shutdown
**C.** Router1(conf)# interface s0/0
Router1(conf-if)# no shutdown
**D.** Router1(conf)# interface s0/1
Router1(conf-if)# no shutdown
**E.** Router1(conf)# interface s0/0
Router1(conf-if)# ip address 10.11.12.13 255.255.255.252
**F.** Router1(conf)# interface s0/1
Routerl (conf-if)# ip address 10.11.12.13 255.255.255.252

**Answer: C**

**Explanation:**

We should check the statuses of all the interfaces on Router1 with the show ip interface brief command:

Router#show ip interface brief

| Interface | IP-Address | OK? | Method | Status | Protocol |
|---|---|---|---|---|---|
| FastEthernet0/0 | 192.168.136.1 | YES | manual | up | up |
| FastEthernet0/1 | unassigned | YES | manual | administratively down | down |
| Serial0/0 | 10.11.12.13 | YES | manual | administratively down | down |
| Serial0/1 | unassigned | YES | manual | administratively down | down |
| Serial1/0 | unassigned | YES | manual | administratively down | down |
| Serial1/1 | unassigned | YES | manual | administratively down | down |



From the output, we learn that the status of Serial0/0 interface which connects to ISP router is currently “administratively down”. This status indicates this interface is shutting down so we need to turn it on.

**Topic 5, Hotspot and Drag Drop Questions**

**QUESTION NO: 185 HOTSPOT**

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 topology.

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

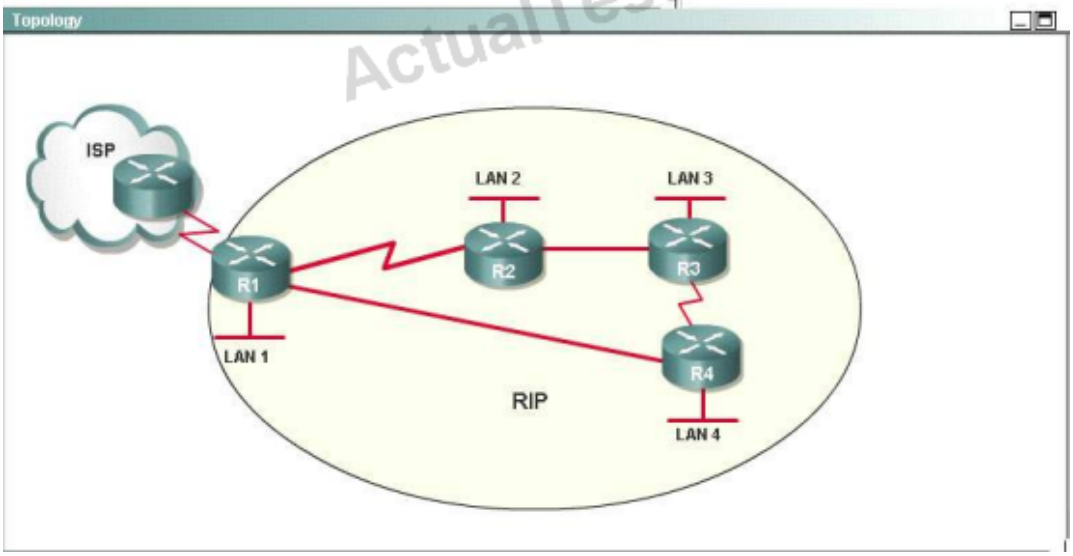
Each of the windows can be minimized by clicking on the [-]. You can also reposition a window by dragging it by the title bar.

Scenario

Refer to the topology. Using the information shown, answer the five questions shown on the Questions tab.



Topology



**Question #1**

On which router should a default route be configured?

- on the ISP router
- on R1
- on R2
- on R3
- on R4

**Question #2**

With all links operational and all routers converged, which of the following describes the messaging between routers?

- Hellos are sent every five seconds.
- Multicasts are sent every 60 seconds.
- Broadcasts are sent every 30 seconds.
- No messaging unless the topology changes.

**Question #3**

Which of the following describes the route update process if the interface from R4 connected to LAN 4 goes down?



- No updates occur
- R4 tells both R1 and R3 the network not accessible. Both R3 and R1 update R2.
- R4 tells only R1 the network is not accessible. R1 updates R2 and R2 updates R3.
- R4 tells only R3 the network is not accessible. R3 updates R2 and R2 updates R1.

**Question #4**

Why would RIP be used rather than static routes on R1, R2, R3, and R4?

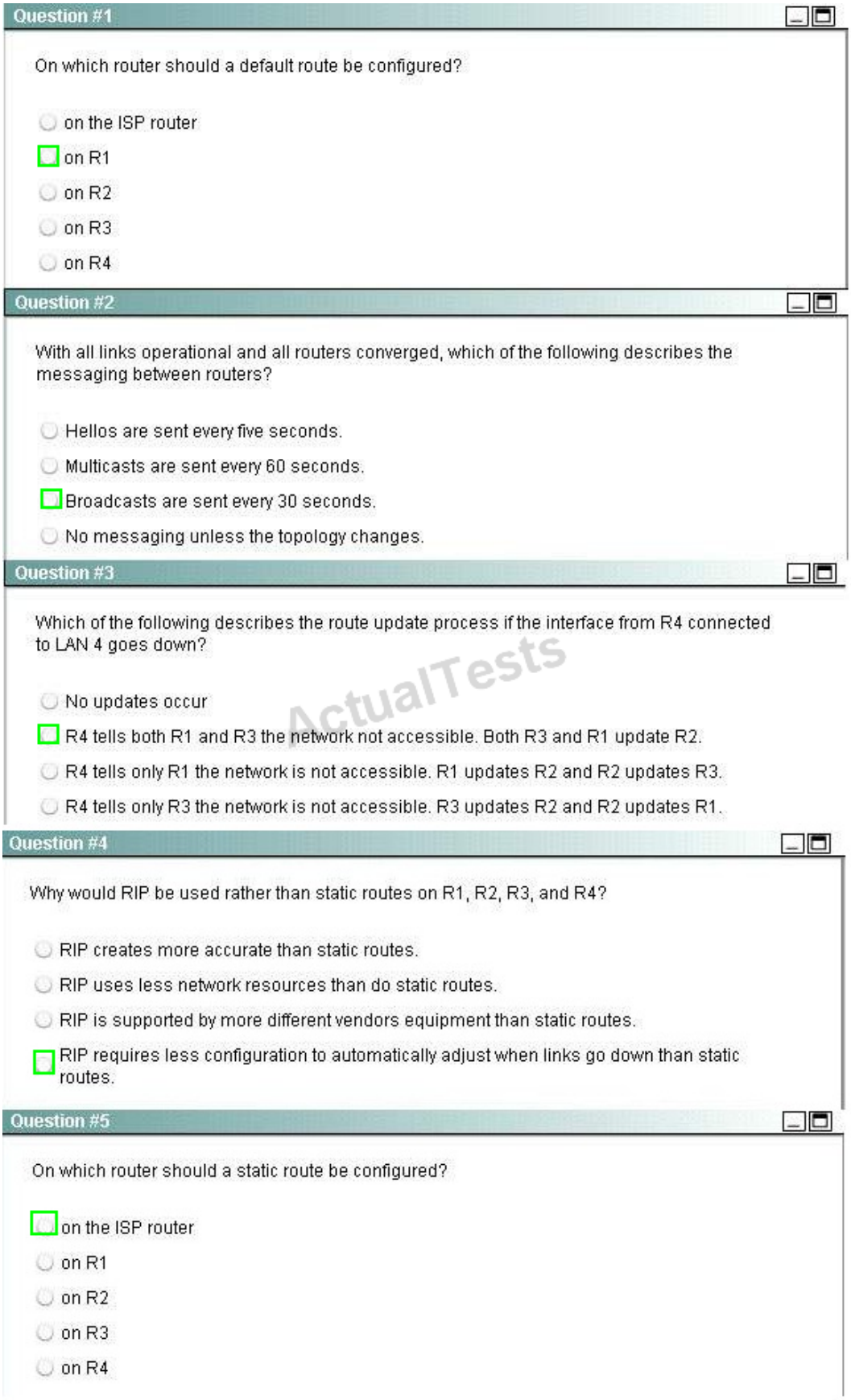
- RIP creates more accurate than static routes.
- RIP uses less network resources than do static routes.
- RIP is supported by more different vendors equipment than static routes.
- RIP requires less configuration to automatically adjust when links go down than static routes.

**Question #5**

On which router should a static route be configured?

- on the ISP router
- on R1
- on R2
- on R3
- on R4

**Answer:**






**Explanation:**

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 topology.

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

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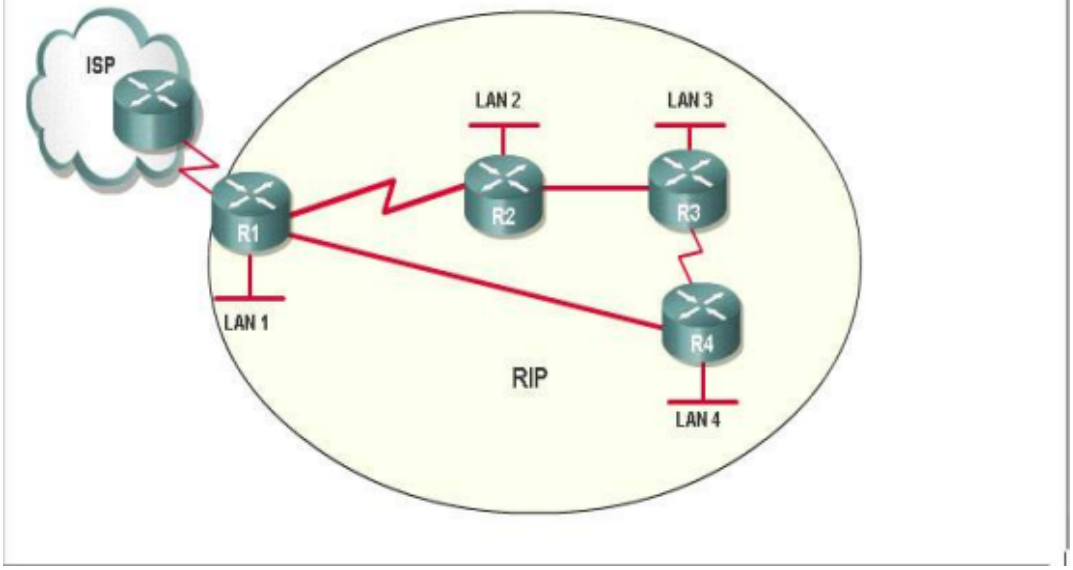
Scenario

Refer to the topology. Using the information shown, answer the five questions shown on the Questions tab.

Topology





**Question #1**

On which router should a default route be configured?

- on the ISP router
- [x] on R1
- on R2
- on R3
- on R4

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With all links operational and all routers converged, which of the following describes the messaging between routers?

- Hellos are sent every five seconds.
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Why would RIP be used rather than static routes on R1, R2, R3, and R4?

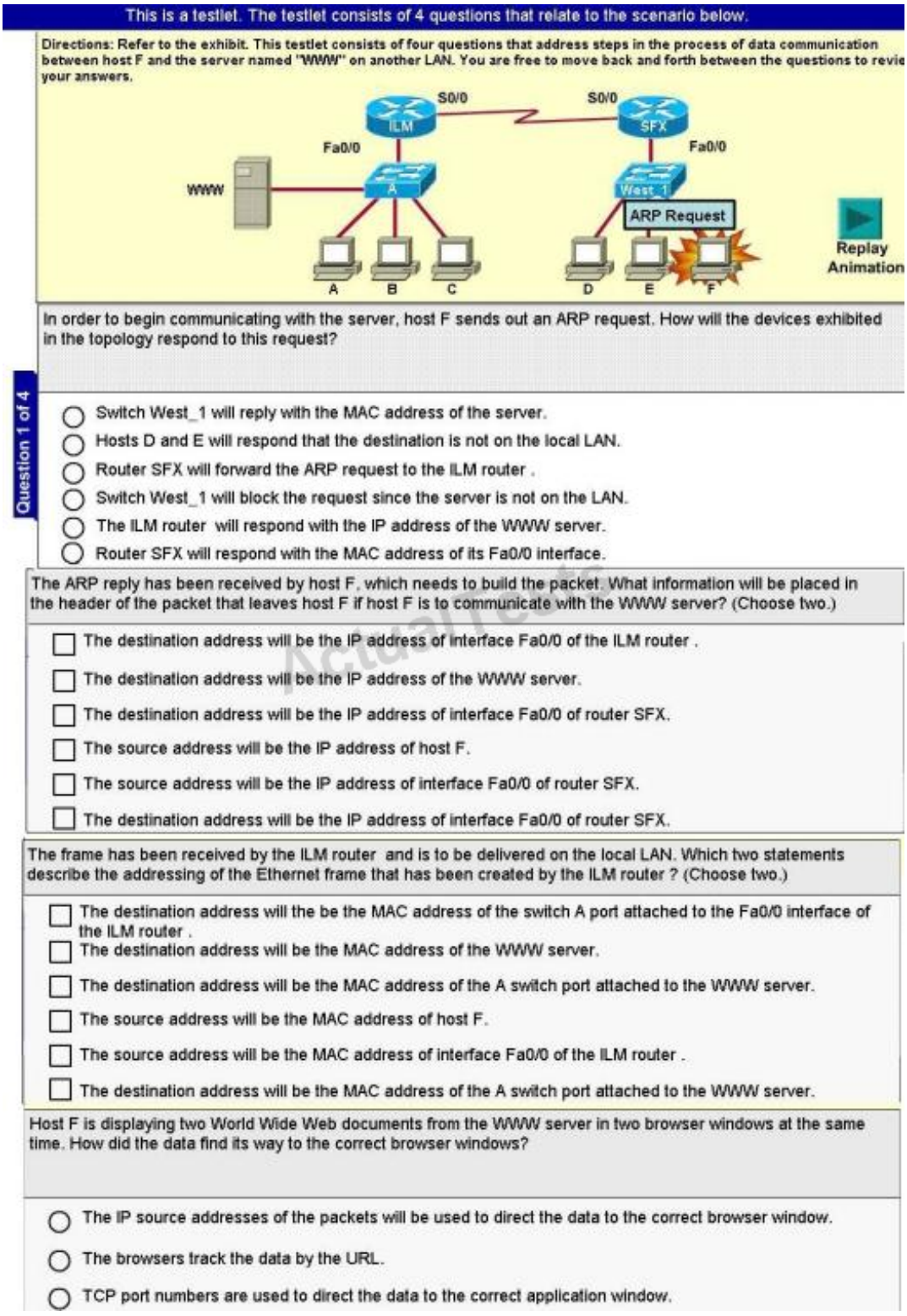
- RIP creates more accurate than static routes.
- RIP uses less network resources than do static routes.
- RIP is supported by more different vendors equipment than static routes.
- [x] RIP requires less configuration to automatically adjust when links go down than static routes.

**Question #5**

On which router should a static route be configured?

- [x] on the ISP router
- on R1
- on R2
- on R3
- on R4

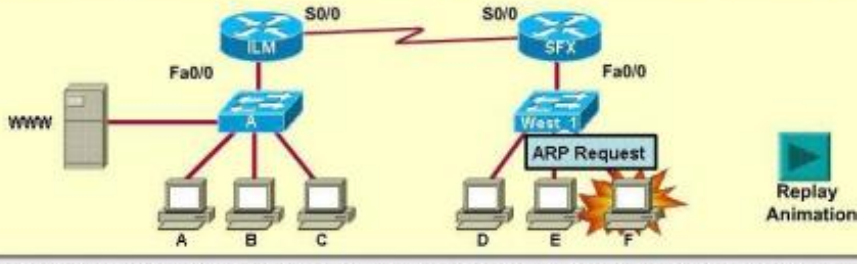
**QUESTION NO: 186 HOTSPOT**




**Answer:**

This is a testlet. The testlet consists of 4 questions that relate to the scenario below.

Directions: Refer to the exhibit. This testlet consists of four questions that address steps in the process of data communication between host F and the server named "WWW" on another LAN. You are free to move back and forth between the questions to revie your answers.




Question 1 of 4

In order to begin communicating with the server, host F sends out an ARP request. How will the devices exhibited in the topology respond to this request?

- ○ Switch West_1 will reply with the MAC address of the server.
- ○ Hosts D and E will respond that the destination is not on the local LAN.
- ○ Router SFX will forward the ARP request to the ILM router .
- ○ Switch West_1 will block the request since the server is not on the LAN.
- ○ The ILM router will respond with the IP address of the WWW server.
- ○ Router SFX will respond with the MAC address of its Fa0/0 interface.

The ARP reply has been received by host F, which needs to build the packet. What information will be placed in the header of the packet that leaves host F if host F is to communicate with the WWW server? (Choose two.)

- ☐ The destination address will be the IP address of interface Fa0/0 of the ILM router .
- ☐ The destination address will be the IP address of the WWW server.
- ☐ The destination address will be the IP address of interface Fa0/0 of router SFX.
- ☐ The source address will be the IP address of host F.
- ☐ The source address will be the IP address of interface Fa0/0 of router SFX.
- ☐ The destination address will be the IP address of interface Fa0/0 of router SFX.

The frame has been received by the ILM router and is to be delivered on the local LAN. Which two statements describe the addressing of the Ethernet frame that has been created by the ILM router ? (Choose two.)

- ☐ The destination address will the be the MAC address of the switch A port attached to the Fa0/0 interface of the ILM router .
- ☐ The destination address will be the MAC address of the WWW server.
- ☐ The destination address will be the MAC address of the A switch port attached to the WWW server.
- ☐ The source address will be the MAC address of host F.
- ☐ The source address will be the MAC address of interface Fa0/0 of the ILM router .
- ☐ The destination address will be the MAC address of the A switch port attached to the WWW server.

Host F is displaying two World Wide Web documents from the WWW server in two browser windows at the same time. How did the data find its way to the correct browser windows?

- ○ The IP source addresses of the packets will be used to direct the data to the correct browser window.
- ○ The browsers track the data by the URL.
- ○ TCP port numbers are used to direct the data to the correct application window.

**Explanation:**

This is a testlet. The testlet consists of 4 questions that relate to the scenario below.

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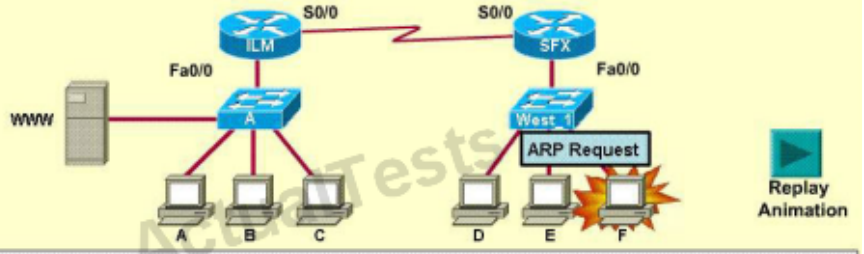


Question 1 of 4

In order to begin communicating with the server, host F sends out an ARP request. How will the devices exhibited in the topology respond to this request?

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- ○ Switch West_1 will block the request since the server is not on the LAN.
- ○ The ILM router will respond with the IP address of the WWW server.
- ● Router SFX will respond with the MAC address of its Fa0/0 interface.

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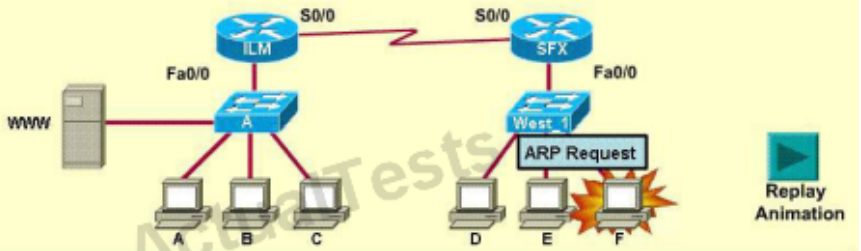


Question 1 of 4

The ARP reply has been received by host F, which needs to build the packet. What information will be placed in the header of the packet that leaves host F if host F is to communicate with the WWW server? (Choose two.)

- ☐ The destination address will be the IP address of interface Fa0/0 of the ILM router .
- ■ The destination address will be the IP address of the WWW server.
- ☐ The destination address will be the IP address of interface Fa0/0 of router SFX.
- ■ The source address will be the IP address of host F.
- ☐ The source address will be the IP address of interface Fa0/0 of router SFX.
- ☐ The destination address will be the IP address of interface Fa0/0 of router SFX.

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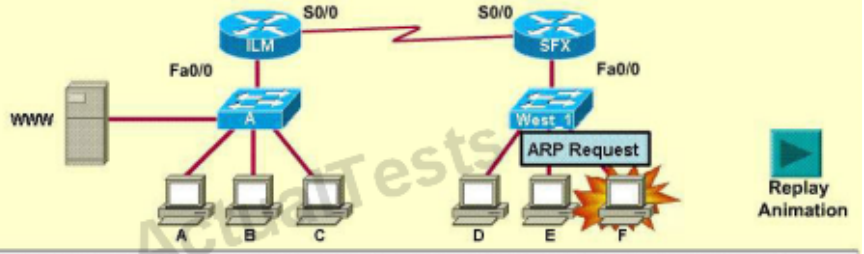


Question 1 of 4

The frame has been received by the ILM router and is to be delivered on the local LAN. Which two statements describe the addressing of the Ethernet frame that has been created by the ILM router ? (Choose two.)

- [ ] The destination address will the be the MAC address of the switch A port attached to the Fa0/0 interface of the ILM router .
- [x] The destination address will be the MAC address of the WWW server.
- [ ] The destination address will be the MAC address of the A switch port attached to the WWW server.
- [ ] The source address will be the MAC address of host F.
- [x] The source address will be the MAC address of interface Fa0/0 of the ILM router .
- [ ] The destination address will be the MAC address of the A switch port attached to the WWW server.

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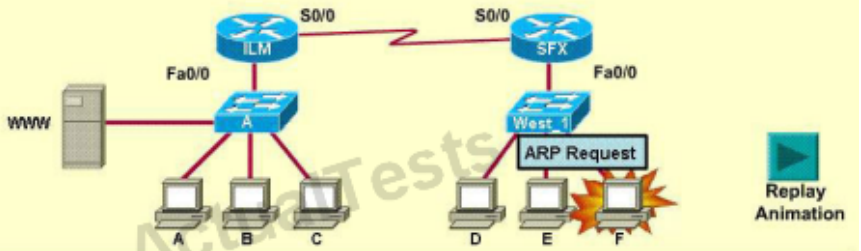
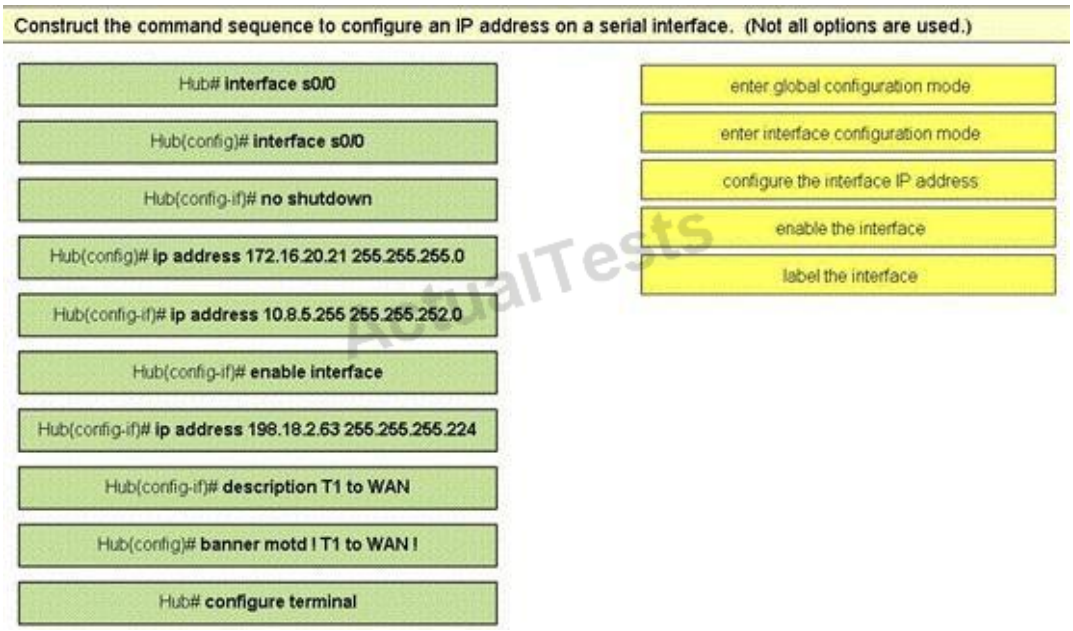



Question 1 of 4

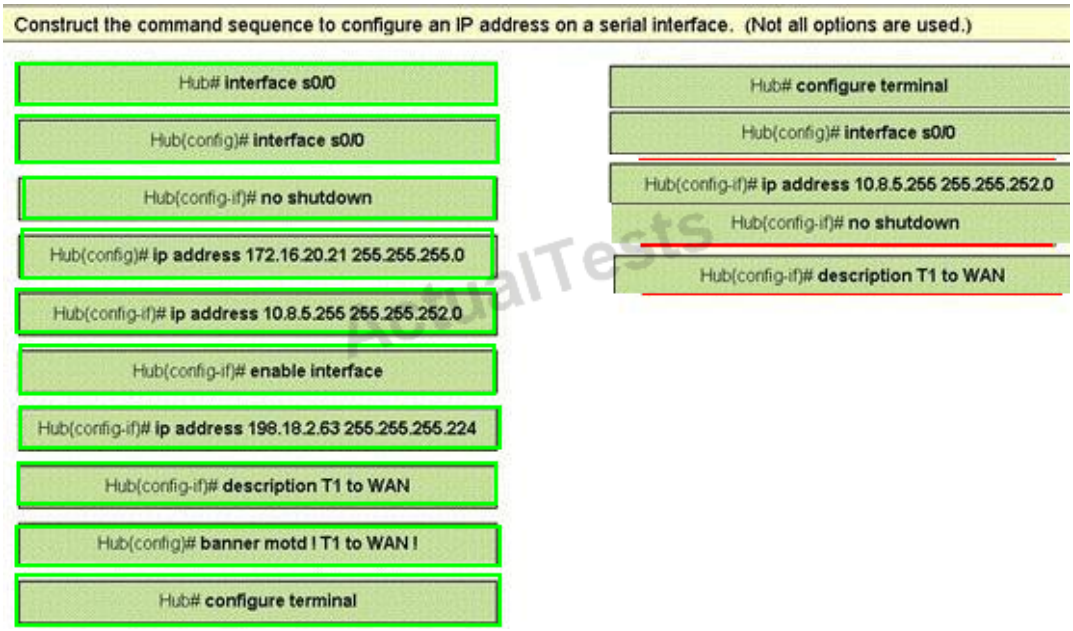
Host F is displaying two World Wide Web documents from the WWW server in two browser windows at the same time. How did the data find its way to the correct browser windows?

- ( ) The IP source addresses of the packets will be used to direct the data to the correct browser window.
- ( ) The browsers track the data by the URL.
- (•) TCP port numbers are used to direct the data to the correct application window.
- ( ) The OSI application layer tracks the conversations and directs them to the correct browser.

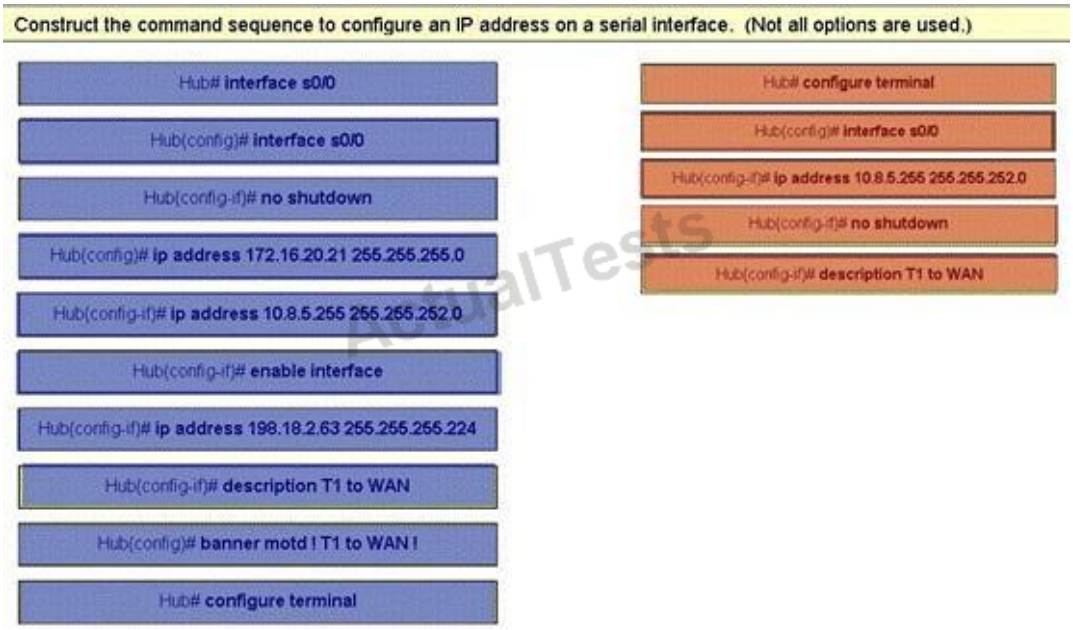
**QUESTION NO: 187 DRAG DROP**



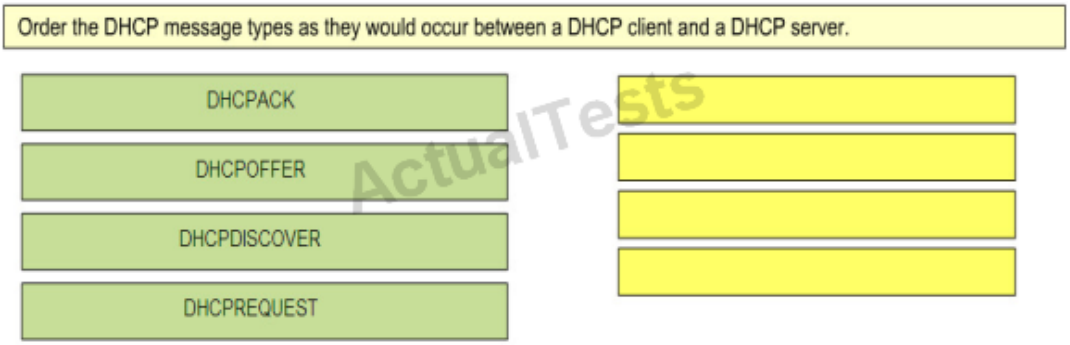

**Answer:**



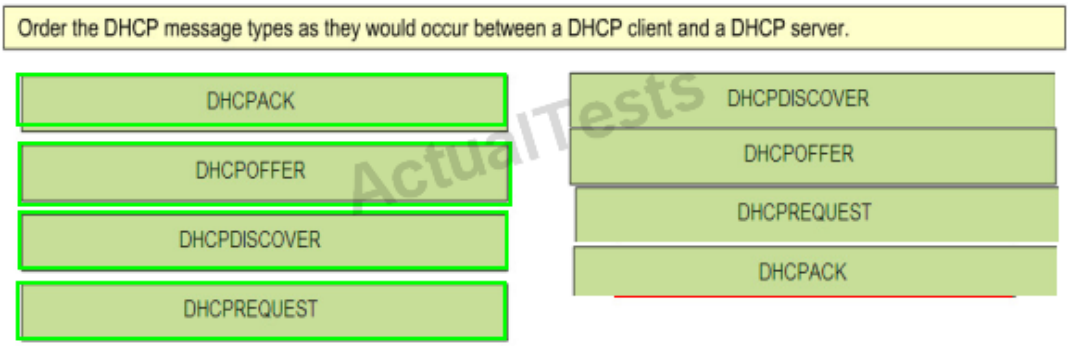

**Explanation:**




**QUESTION NO: 188 DRAG DROP**




**Answer:**



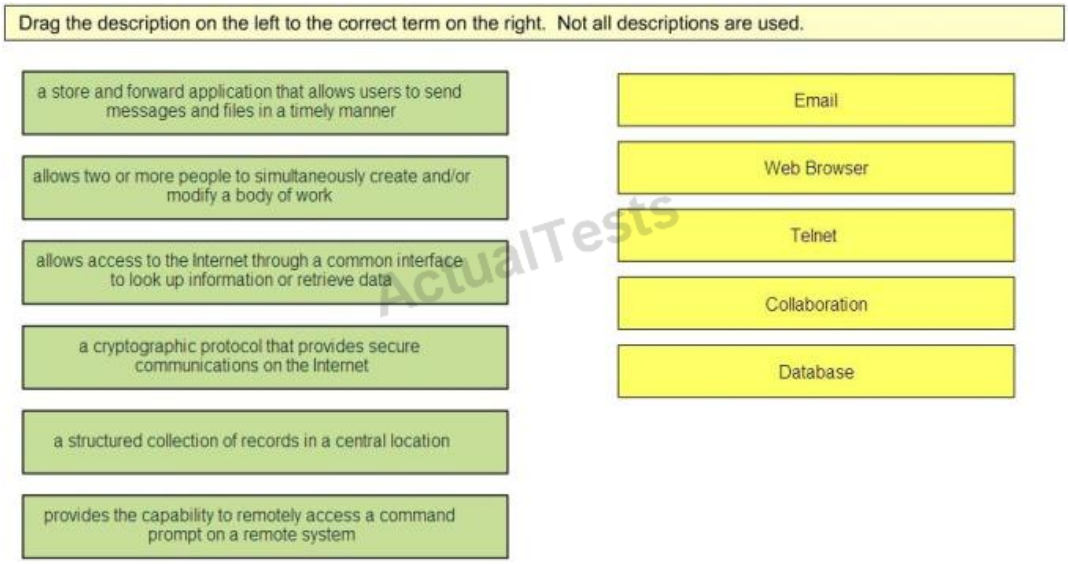

**Explanation:**

1. DHCPDISCOVER
2. DHCPOFFER

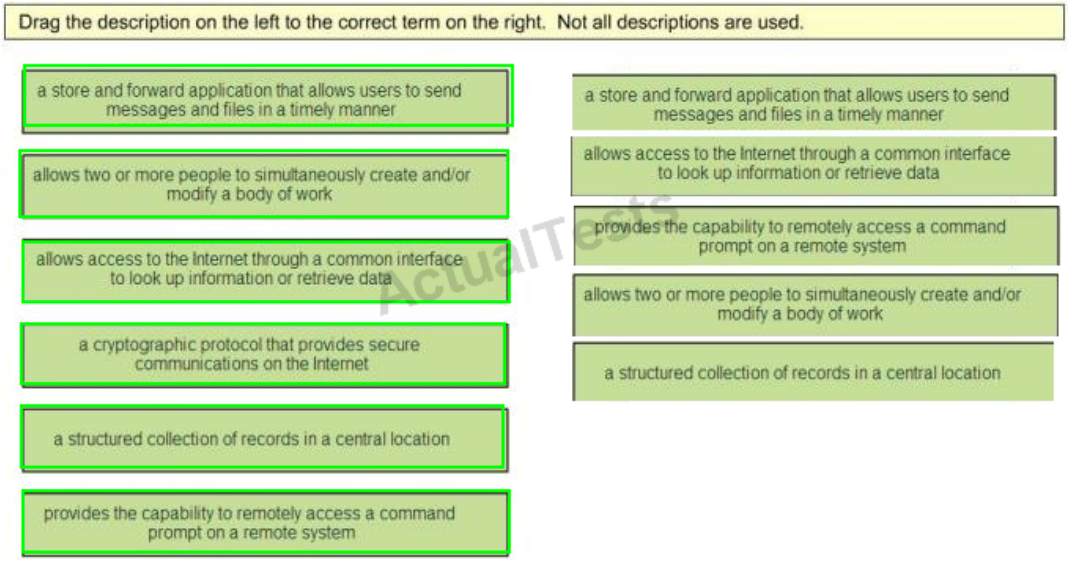
3. DHCPREQUEST
4. DHCPACK

**QUESTION NO: 189 DRAG DROP**

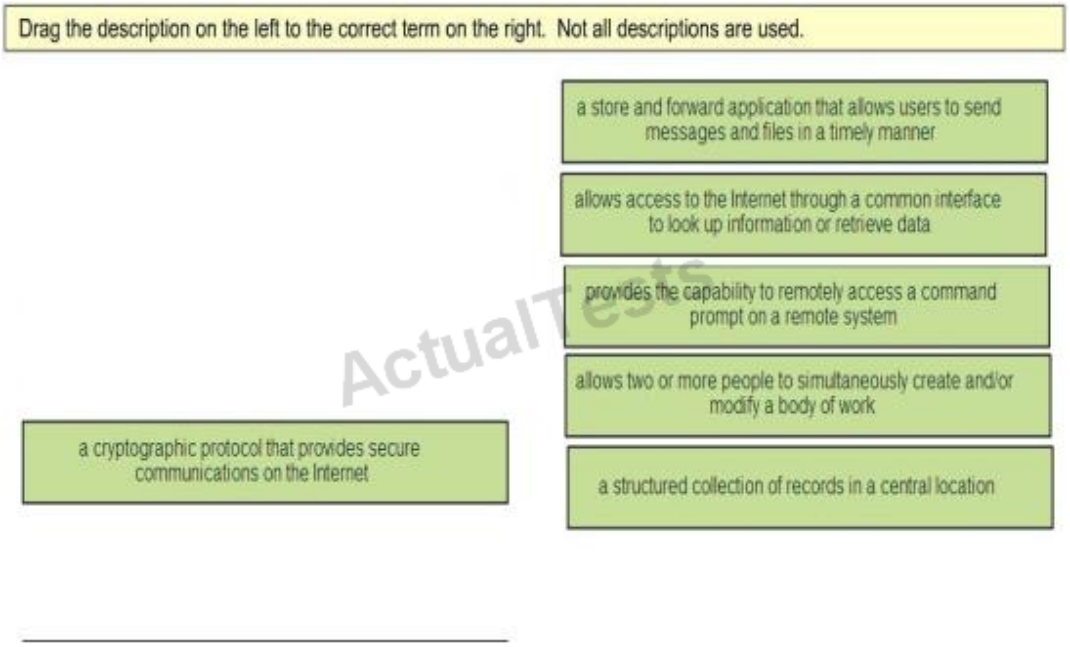
Drag the description on the left to correct term on the right. Not all descriptions are used.



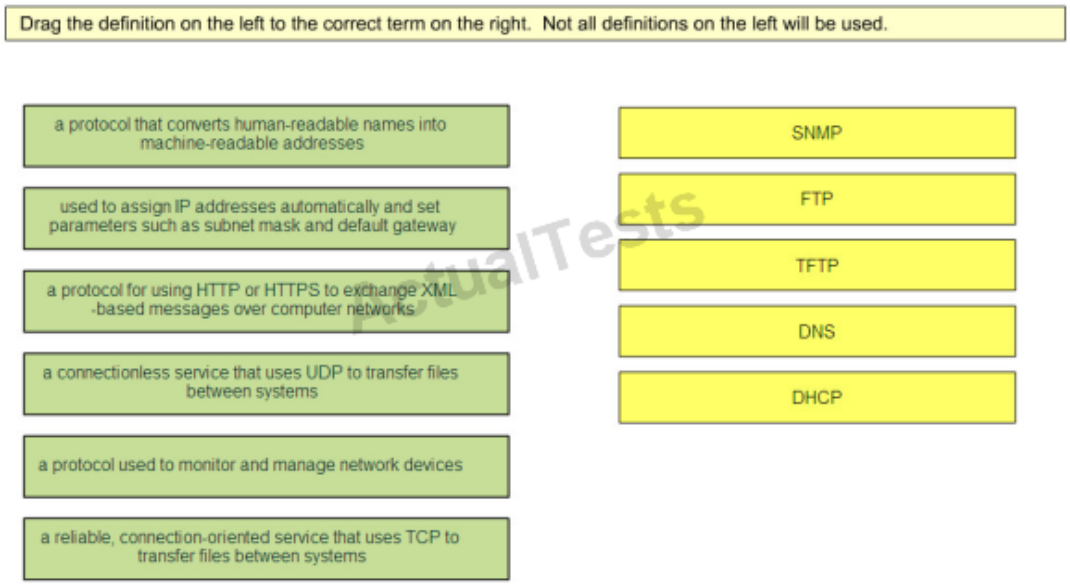

**Answer:**



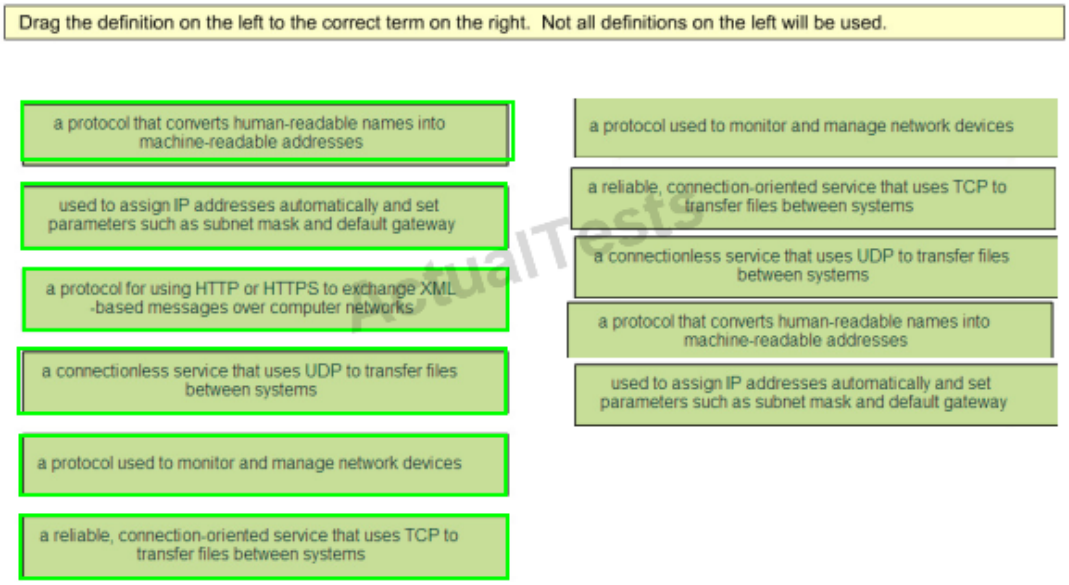

**Explanation:**




**QUESTION NO: 190 DRAG DROP**




**Answer:**




**Explanation:**

SNMP – a protocol used to monitor and manage network devices
FTP – a reliable, connection oriented service that uses TCP to transfer files between systems.
TFTP – A connectionless service that uses UDP to transfer files between systems
DNS – a protocol that converts human-readable names into machine-readable addresses
DHCP – used to assign IP addresses automatically and set parameters such as subnet mask and default gateway

**QUESTION NO: 191 DRAG DROP**

You have to click the terminal of the HOME Router(under the HOME Router and show as PC), then you will get the command prompt on the right as following:

Home>

In this mode enter the command:enable

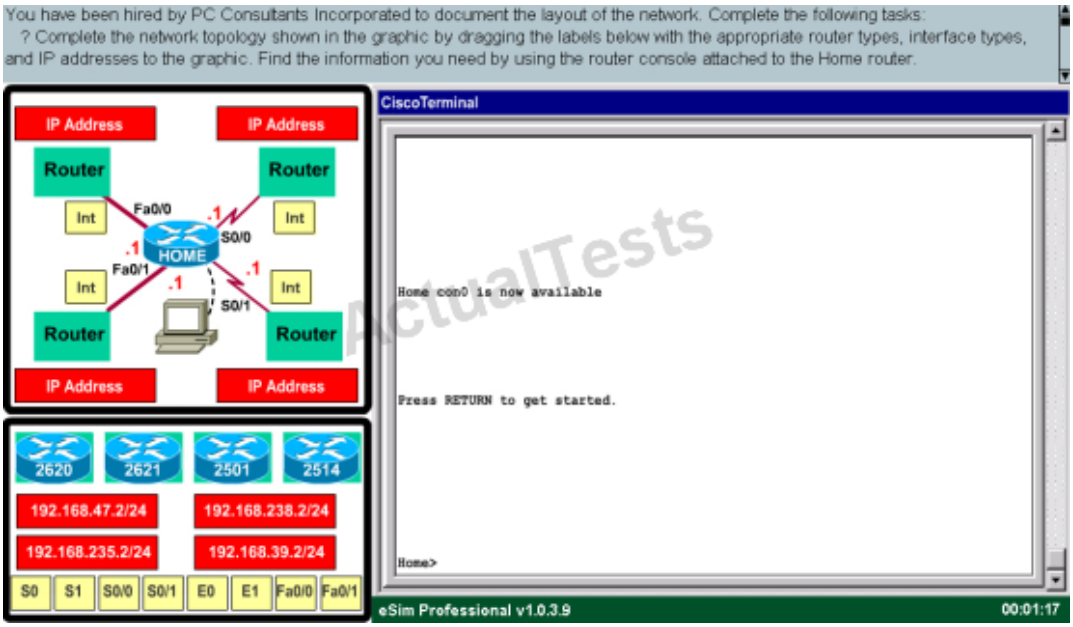
and will enter privilege mode, the command prompt as following:

Home#

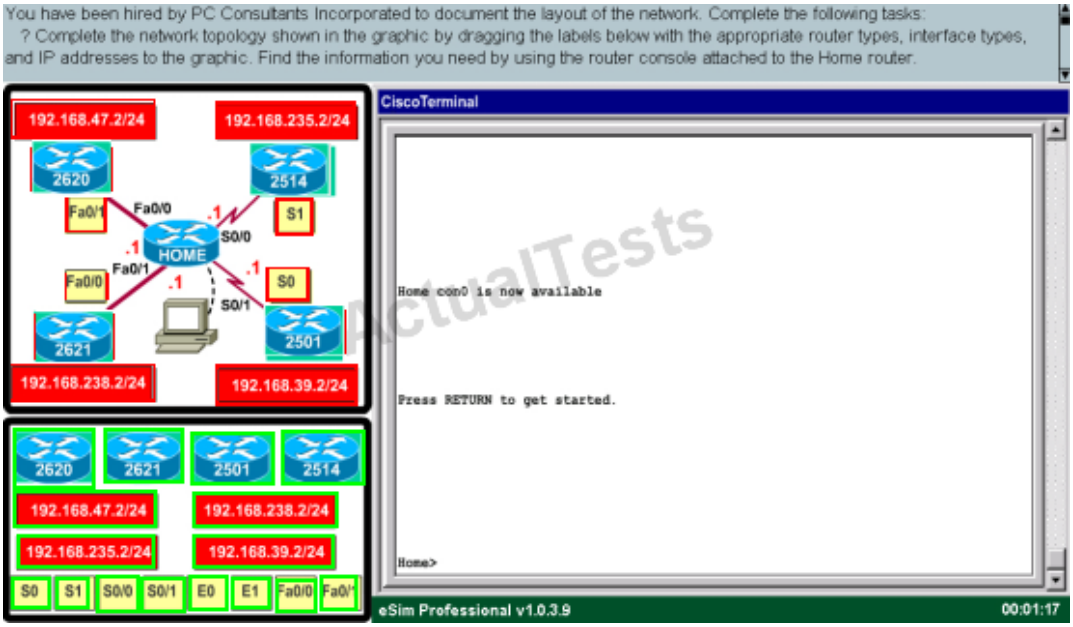
You have to check the information of the interface IP configuration of the HOME Router and the neighbors information. Please enter following command to get the details.

Home#show run

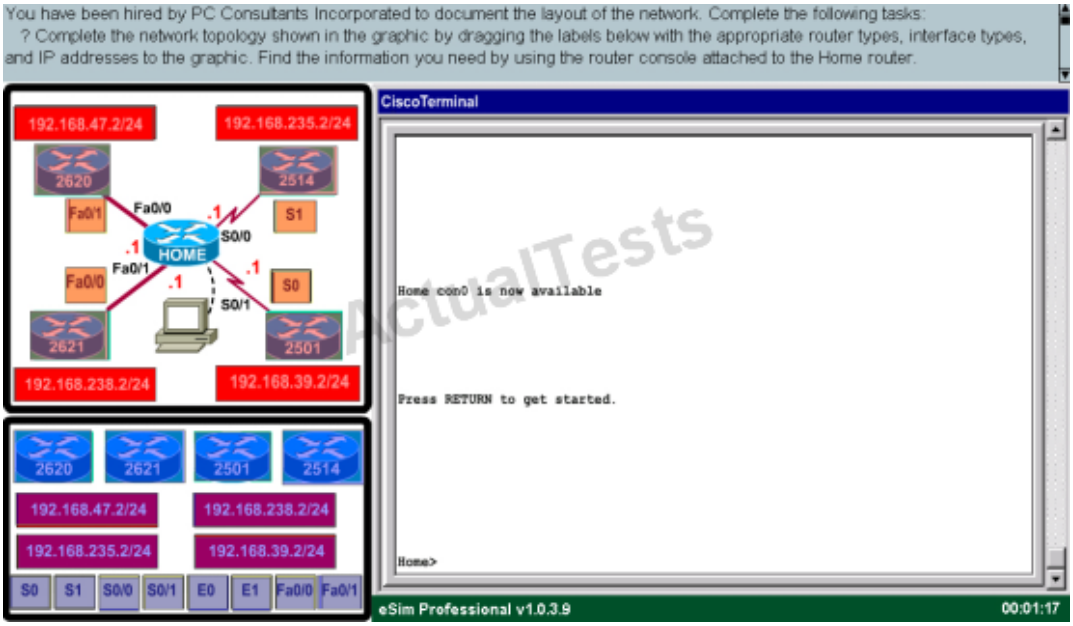
Home#show cdp neighbors



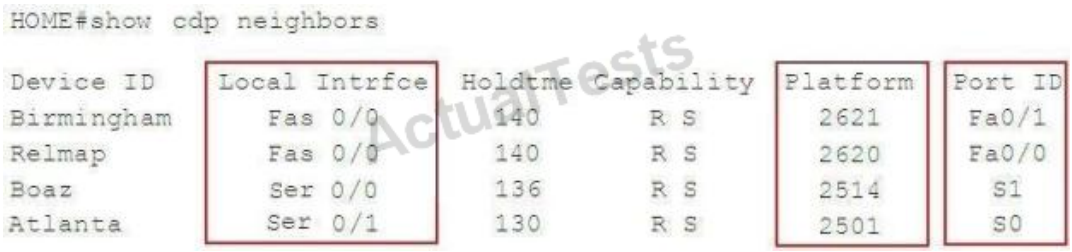

**Answer:**




**Explanation:**




Ues the "show cdp neighbors" command



```
HOME#show cdp neighbors

Device ID     Local Intrfce   Holdtme   Capability   Platform   Port ID
Birmingham       Fas 0/0          140        R S        2621      Fa0/1
Relmap           Fas 0/0          140        R S        2620      Fa0/0
Boaz             Ser 0/0          136        R S        2514      S1
Atlanta          Ser 0/1          130        R S        2501      S0
```

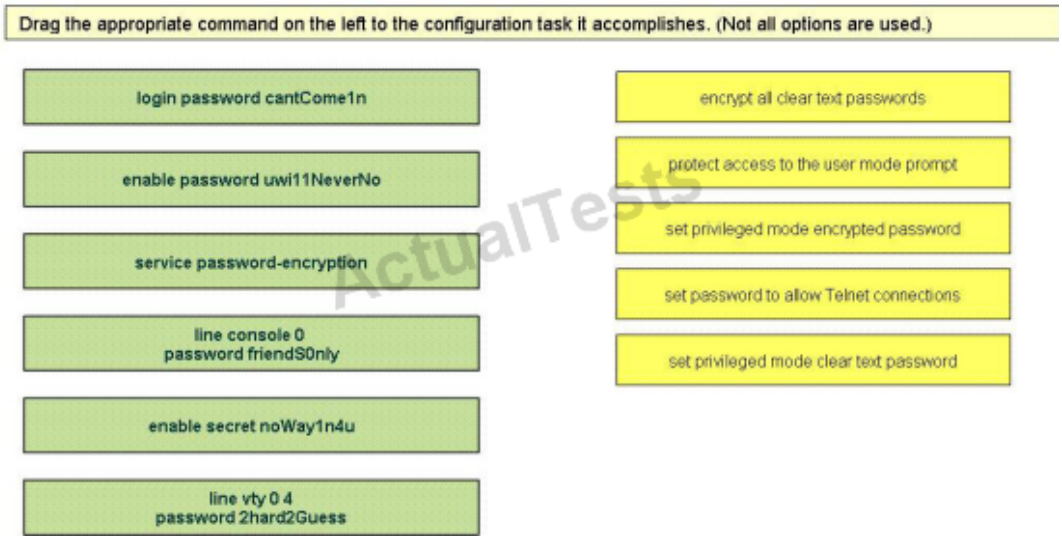
C:\Documents and Settings\user-nwz\Desktop\1.JPG

Use the "show running-config" command:

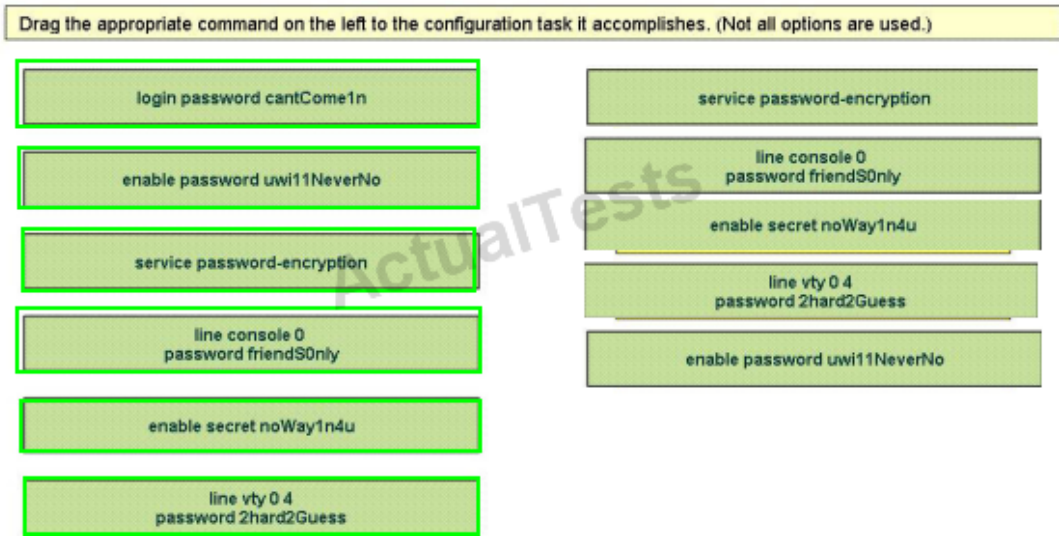
```
HOME#show running-config
!
interface FastEthernet0/0
ip address 192.168.47.1 255.255.255.0 duplex auto
speed auto
!
interface FastEthernet0/1
ip address 192.168.238.1 255.255.255.0 duplex auto
speed auto
!
interface Serial0/1
ip address 192.168.235.1 255.255.255.0 duplex auto
!
interface Serial0/1
ip address 192.168.39.1 255.255.255.0 duplex auto
!
```

C:\Documents and Settings\user-nwz\Desktop\1.JPG

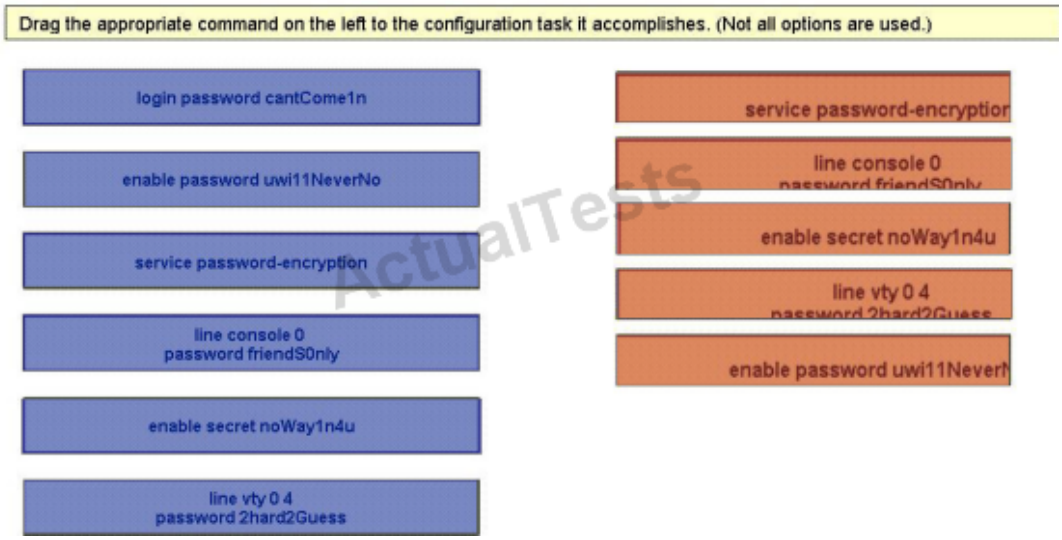
**QUESTION NO: 192 DRAG DROP**



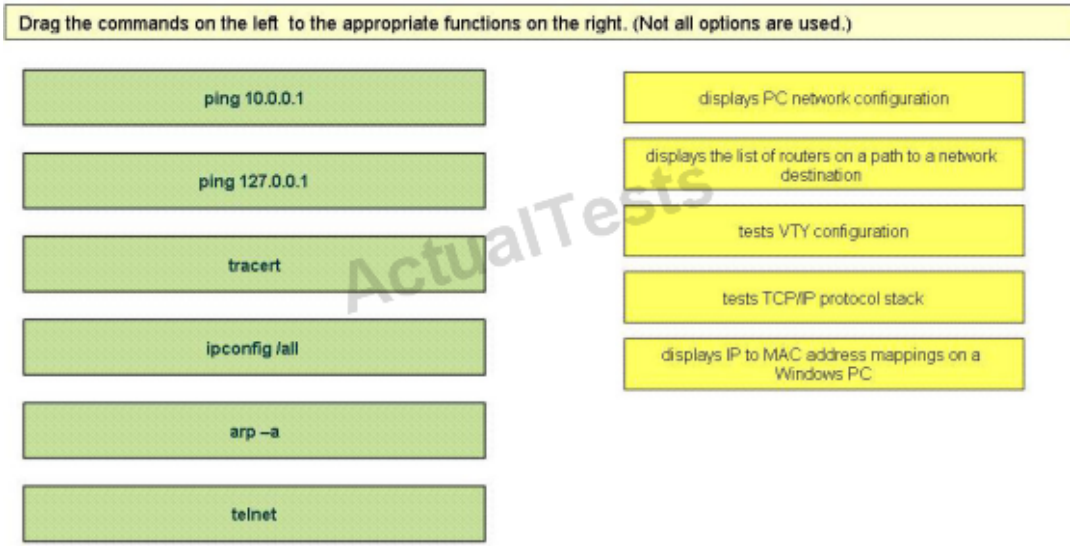

**Answer:**



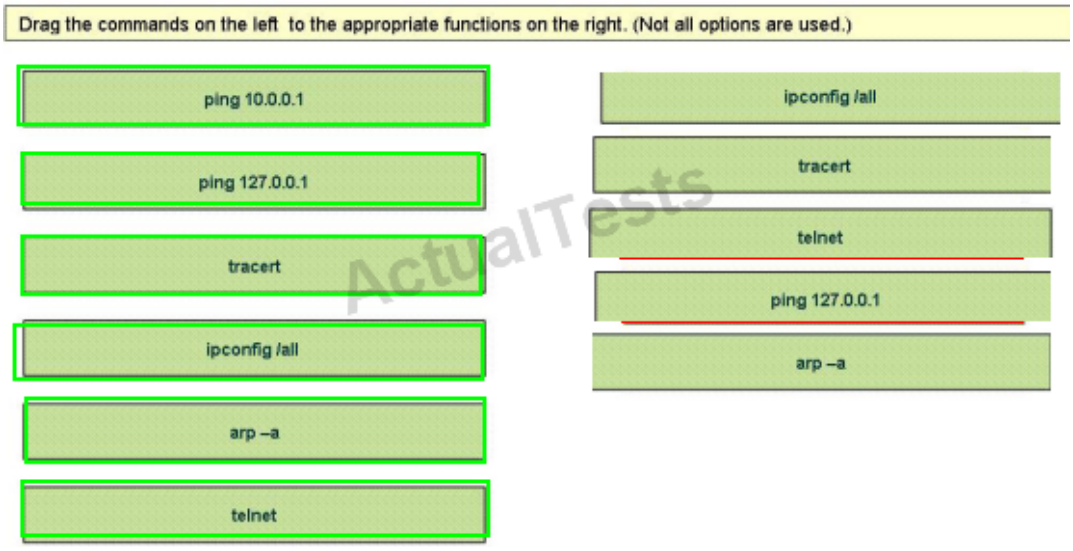

**Explanation:**



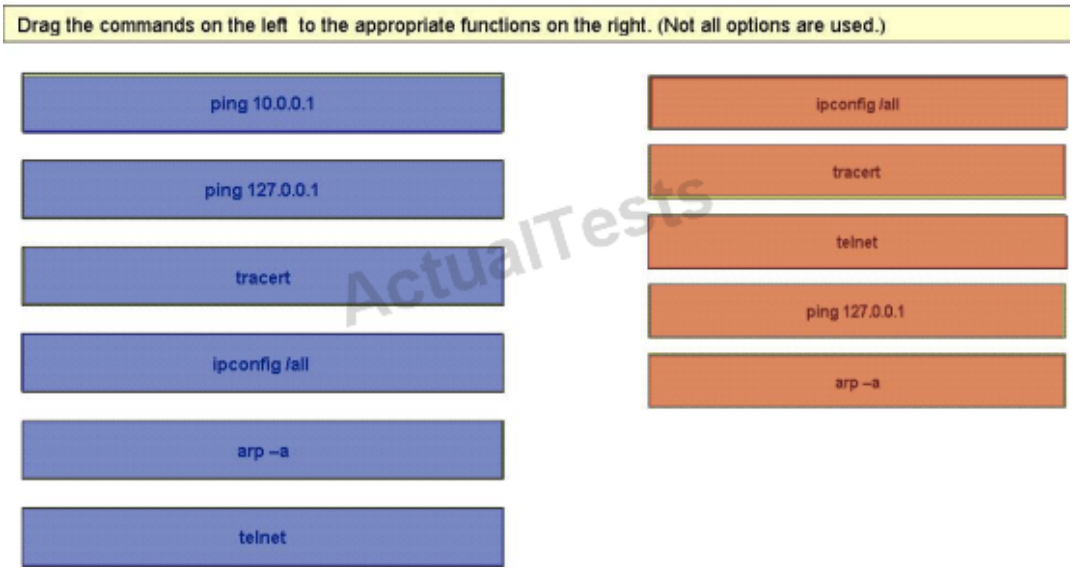

**QUESTION NO: 193 DRAG DROP**



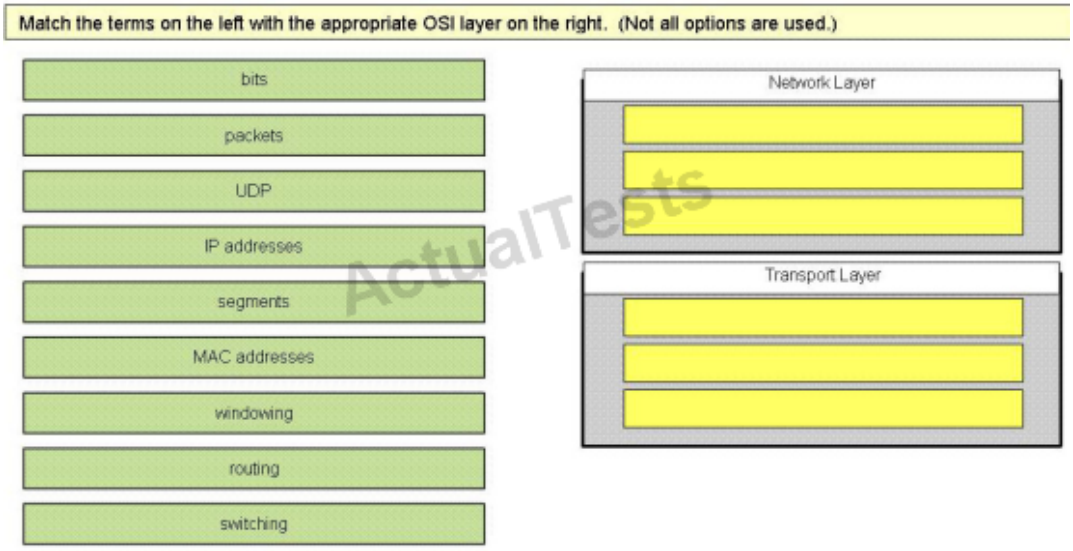

**Answer:**



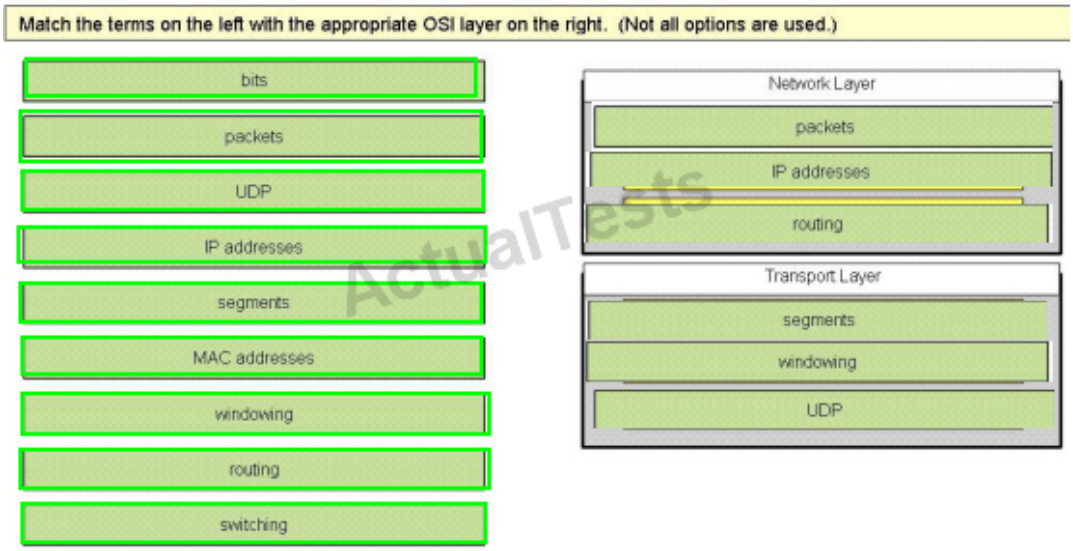

**Explanation:**



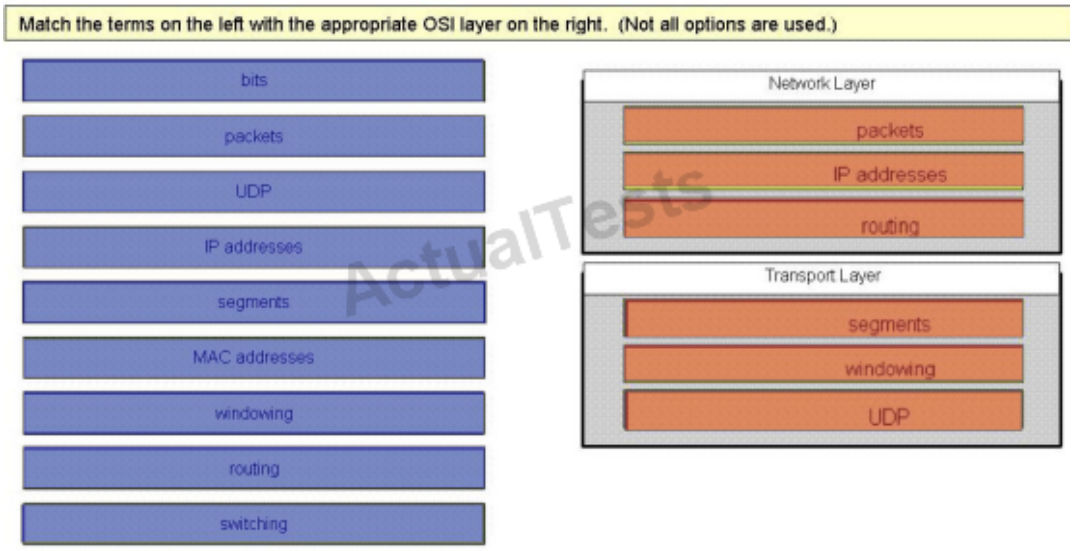
**QUESTION NO: 194 DRAG DROP**



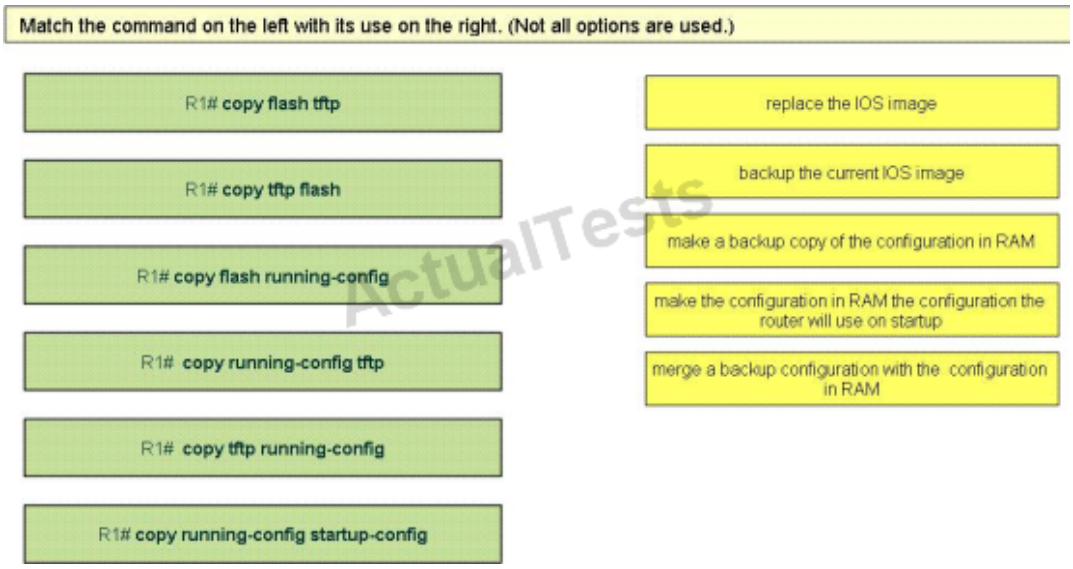

**Answer:**



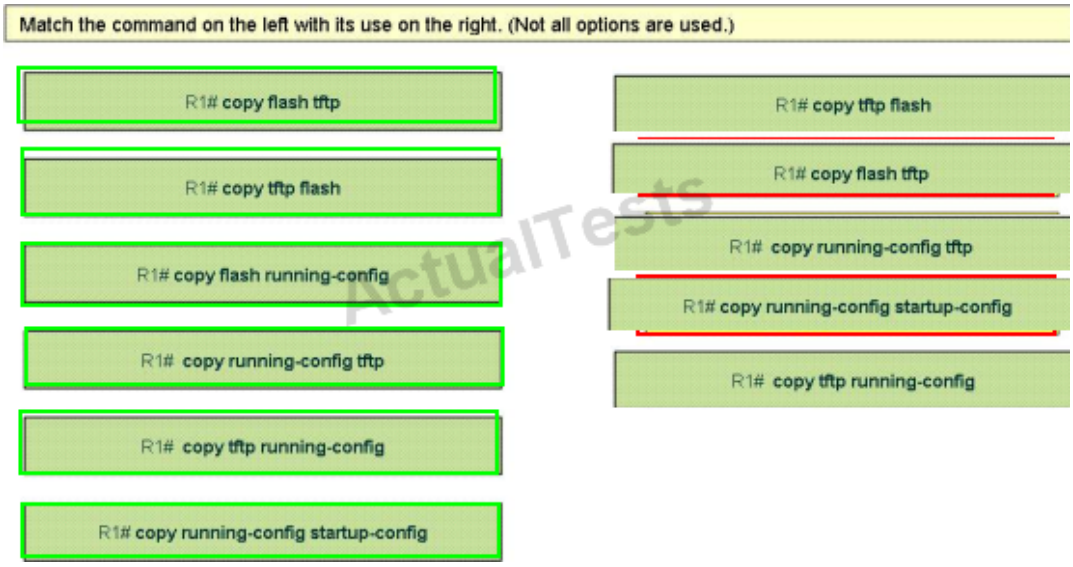

**Explanation:**



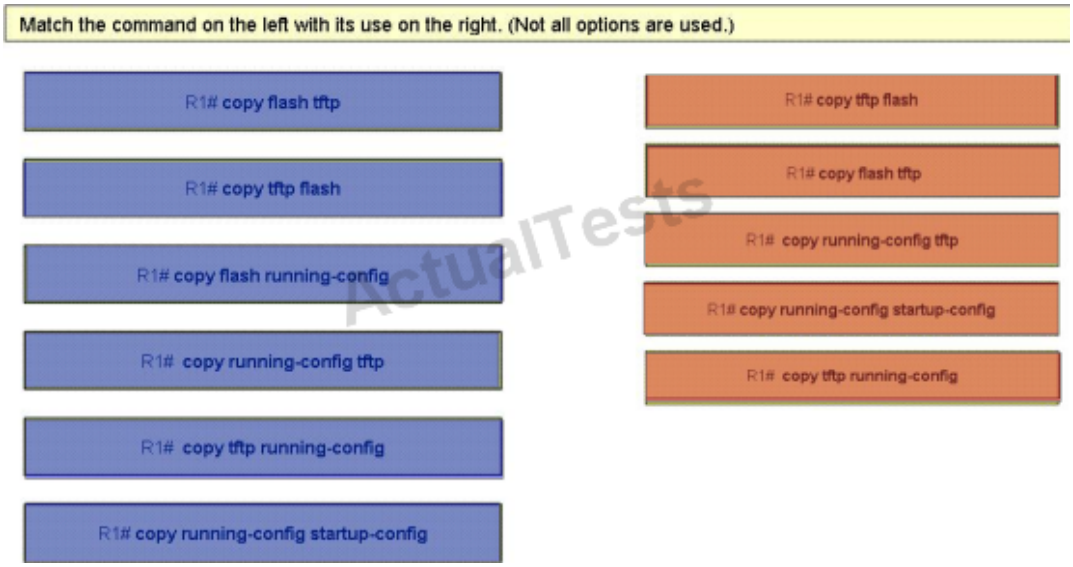

**QUESTION NO: 195 DRAG DROP**




**Answer:**

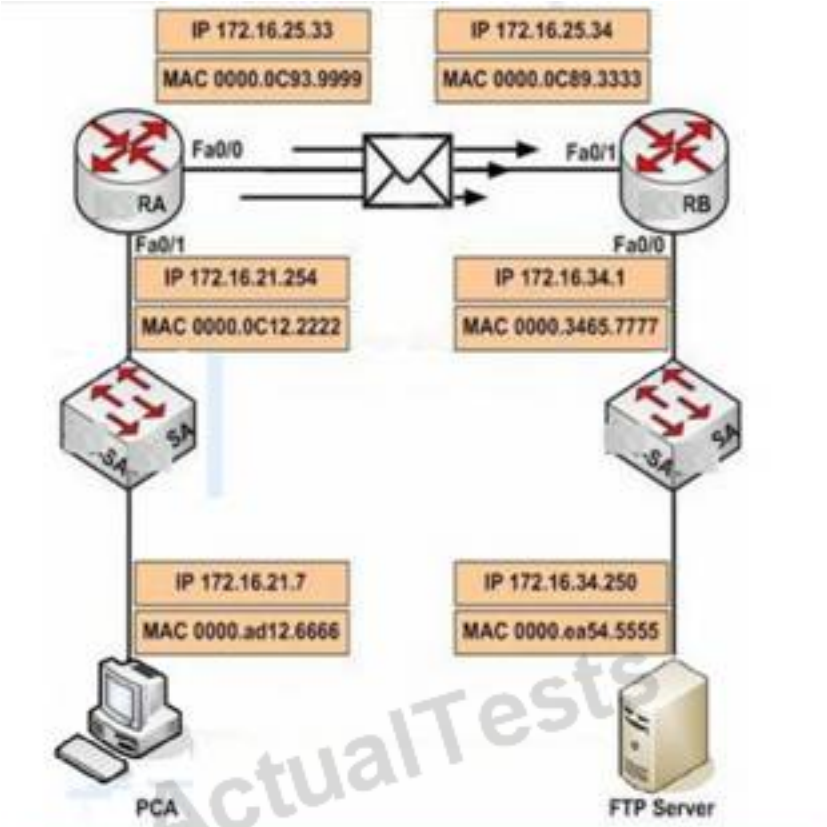



**Explanation:**

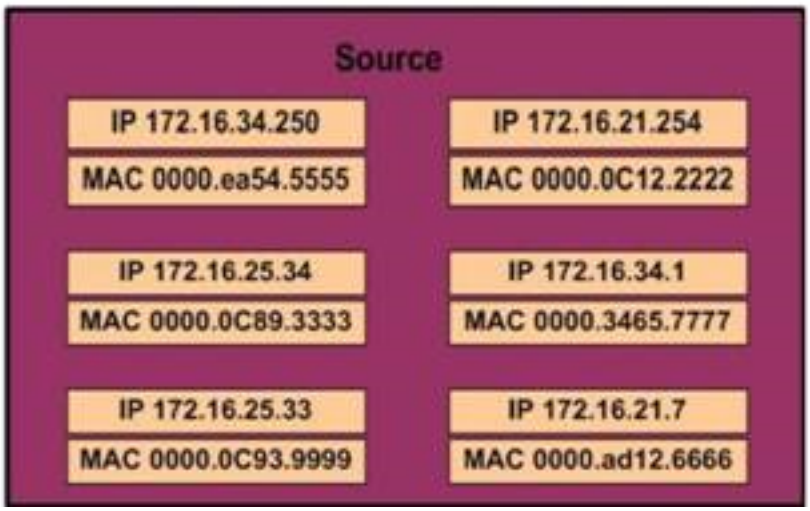



**QUESTION NO: 196 DRAG DROP**

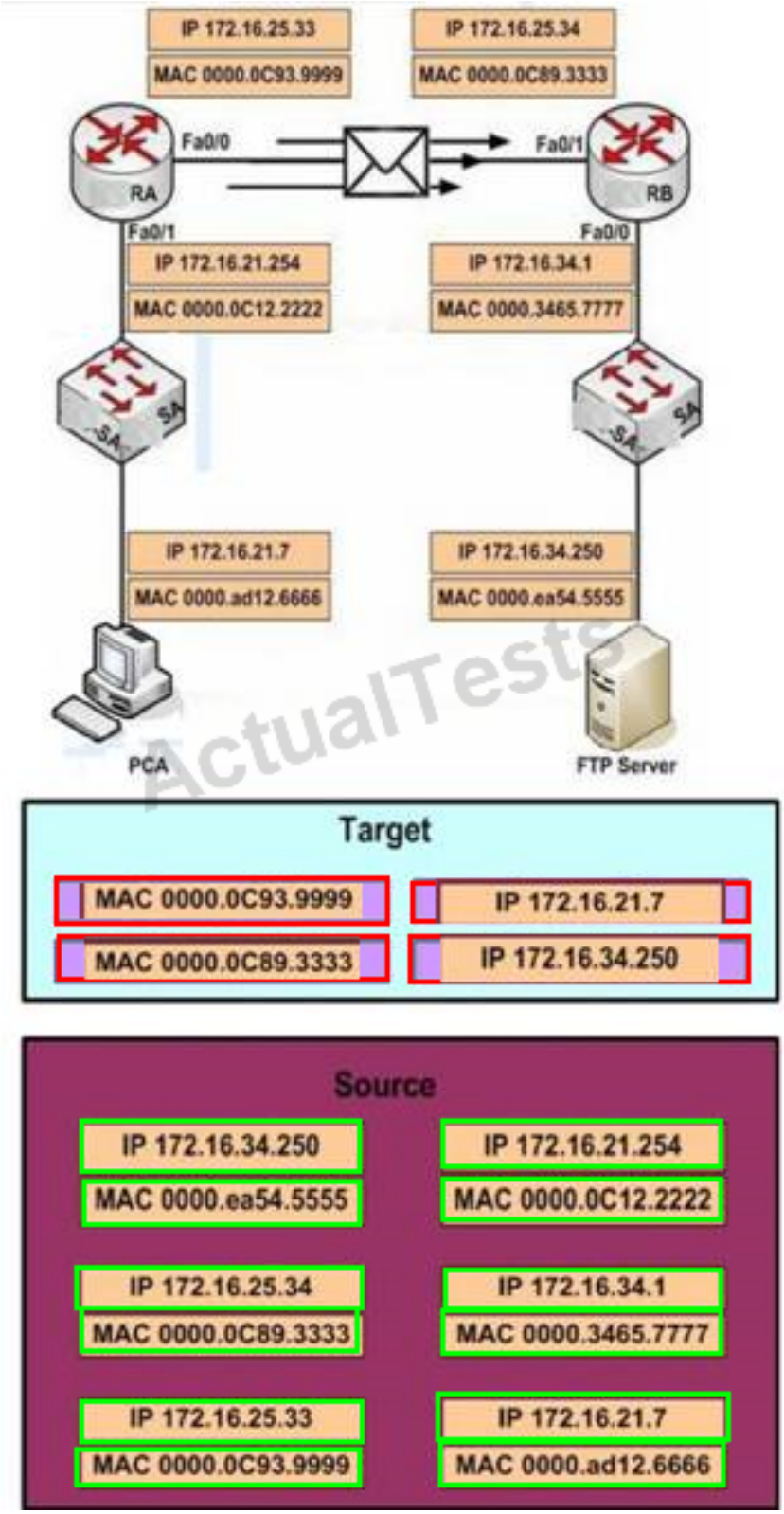
Refer to the exhibit PCA is sending packets to the FTP server. Consider the packets as they leave RA Interface Fa0/0 forwards RB. Drag the correct frame and packet address to their place in the table.


IP 172.16.25.33
MAC 0000.0C93.9999
IP 172.16.25.34
MAC 0000.0C89.3333
Fa0/0
Fa0/1
RA
RB
Fa0/1
Fa0/0
IP 172.16.21.254
MAC 0000.0C12.2222
IP 172.16.34.1
MAC 0000.3465.7777
IP 172.16.21.7
MAC 0000.ad12.6666
IP 172.16.34.250
MAC 0000.ea54.5555
PCA
FTP Server


Target
Source MAC
Source IP
Destination MAC
Destination IP

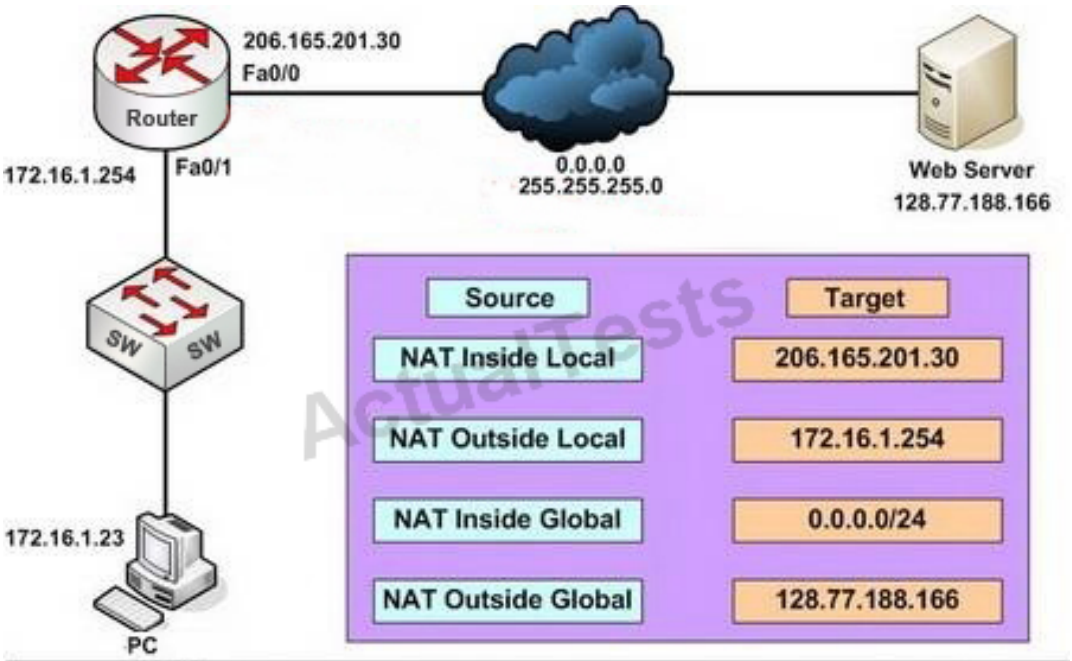

Source
IP 172.16.34.250
MAC 0000.ea54.5555
IP 172.16.21.254
MAC 0000.0C12.2222
IP 172.16.25.34
MAC 0000.0C89.3333
IP 172.16.34.1
MAC 0000.3465.7777
IP 172.16.25.33
MAC 0000.0C93.9999
IP 172.16.21.7
MAC 0000.ad12.6666

**Answer:**



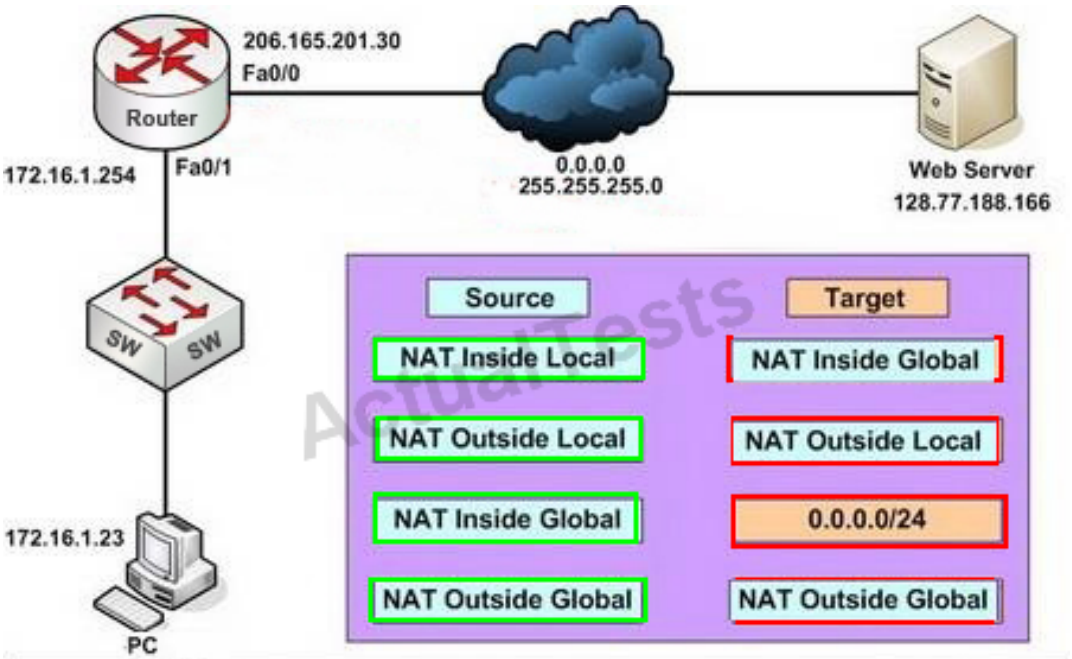

**Explanation:**


**QUESTION NO: 197 DRAG DROP**




Refer to the exhibit. router is configured to use NAT in overload mode.Host PC is sending packets to Web Server.Drag the addresses to fill in the NAT terminology table with their associated IP address values.
NOTE: Addresses may be used,none,once or more.

**Answer:**

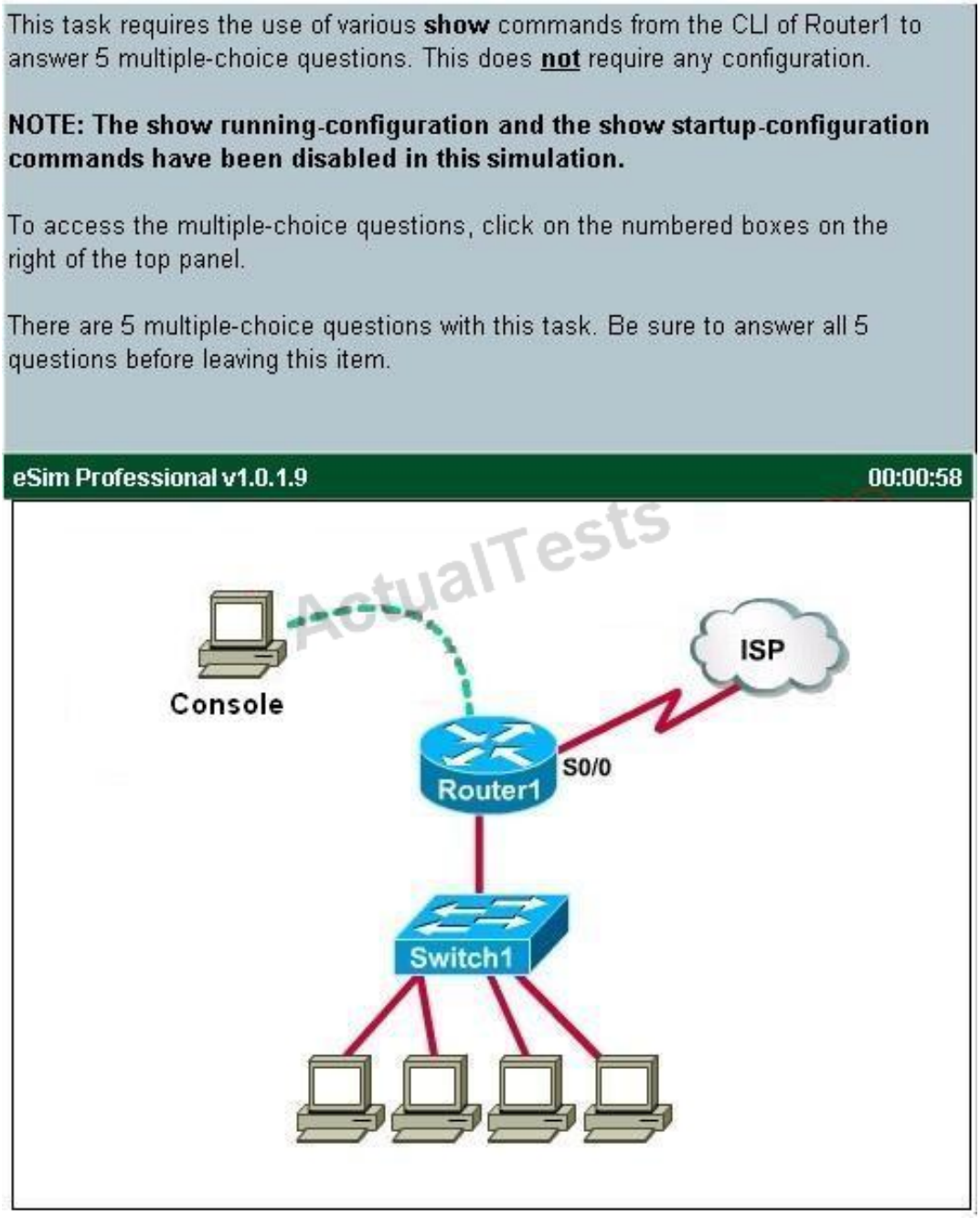


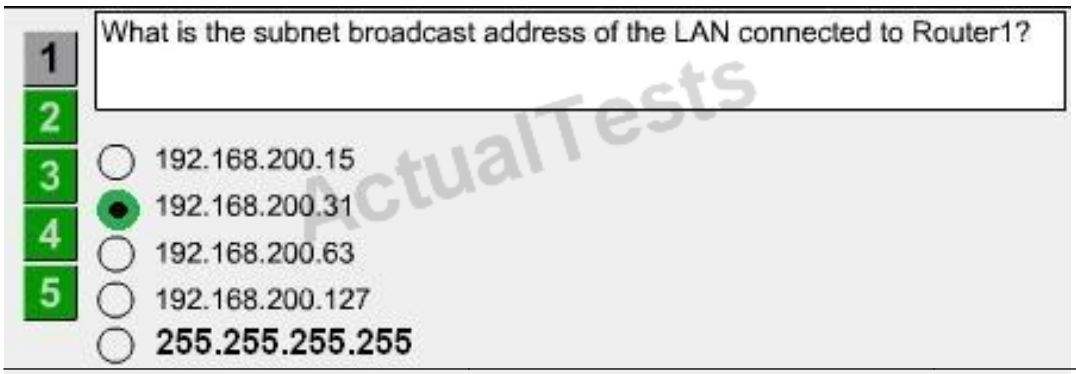

Refer to the exhibit. router is configured to use NAT in overload mode.Host PC is sending packets to Web Server.Drag the addresses to fill in the NAT terminology table with their associated IP address values.
NOTE: Addresses may be used,none,once or more.

**Explanation:**

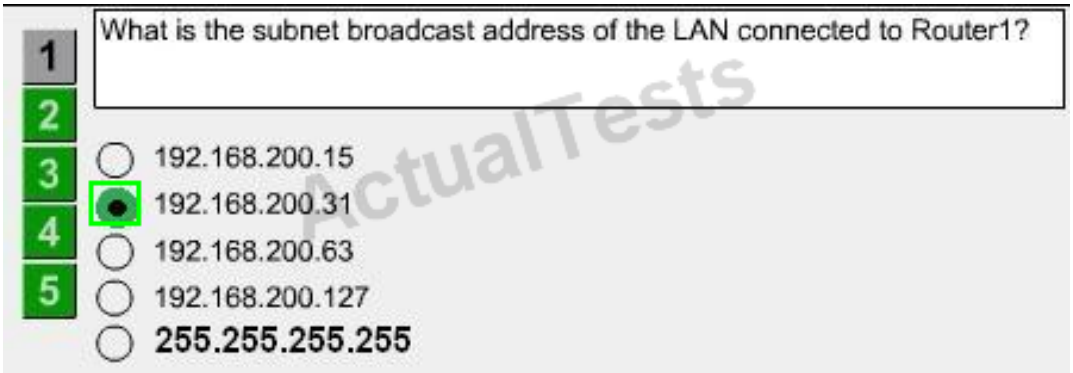
**QUESTION NO: 198 HOTSPOT**

Click on the correct location or locations in the exhibit.



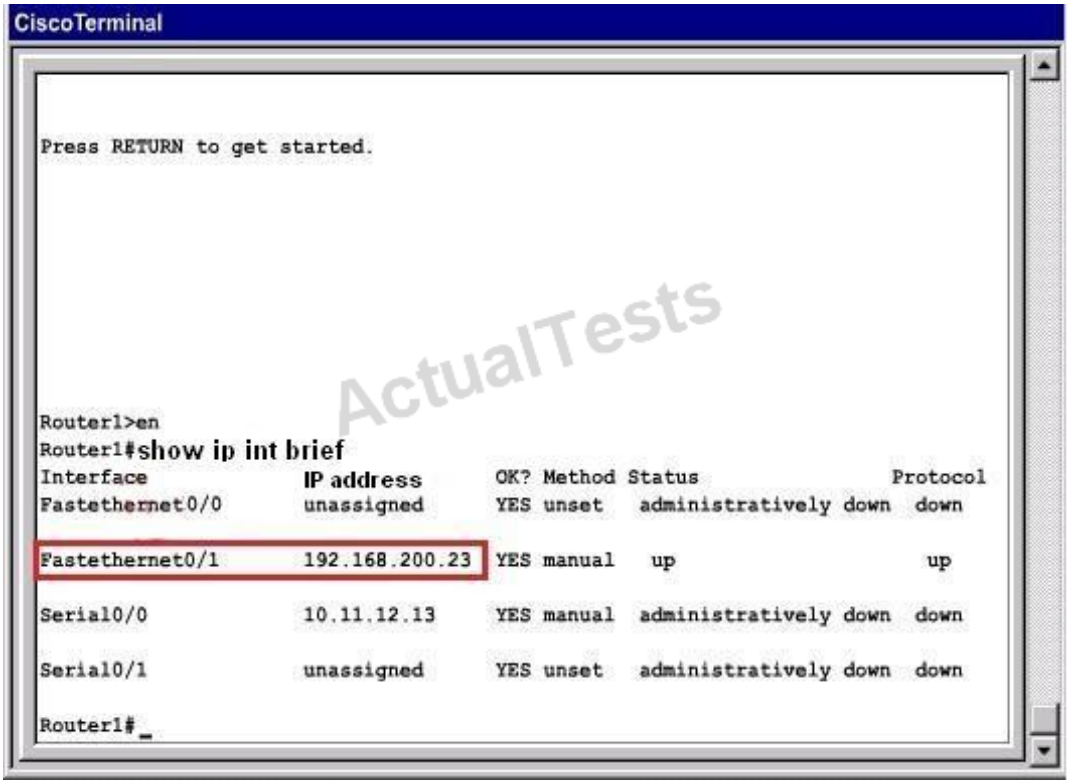
**Answer:**




**Explanation:**

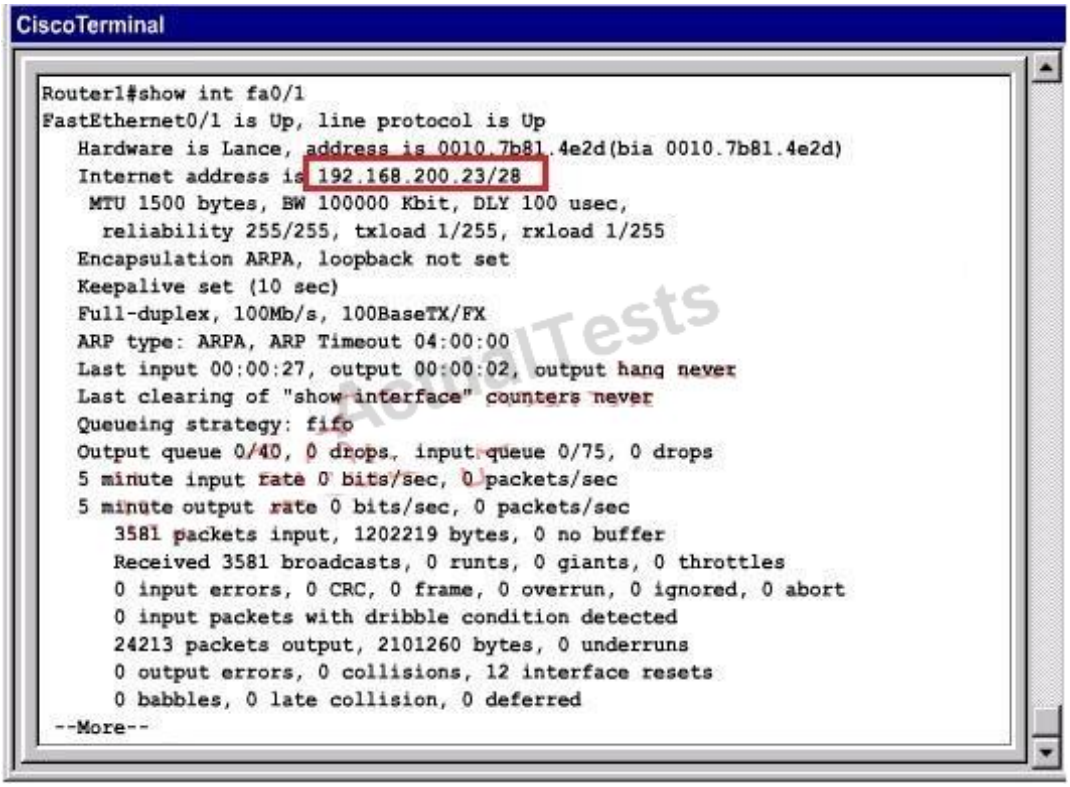
192.168.200.31

User the "show ip interface brief" command




C:\Documents and Settings\user-nwz\Desktop\1.JPG

User the "show interface fa0/1" command




C:\Documents and Settings\user-nwz\Desktop\1.JPG

From the output we learn that the ip address of the FastEthernet0/1 interface of Router1 is 192.168.200.23 and the subnet mask is /28.

-> The broadcast address of this subnetwork is 192.168.200.31

**QUESTION NO: 199 HOTSPOT**

Click on the correct location or locations in the exhibit.

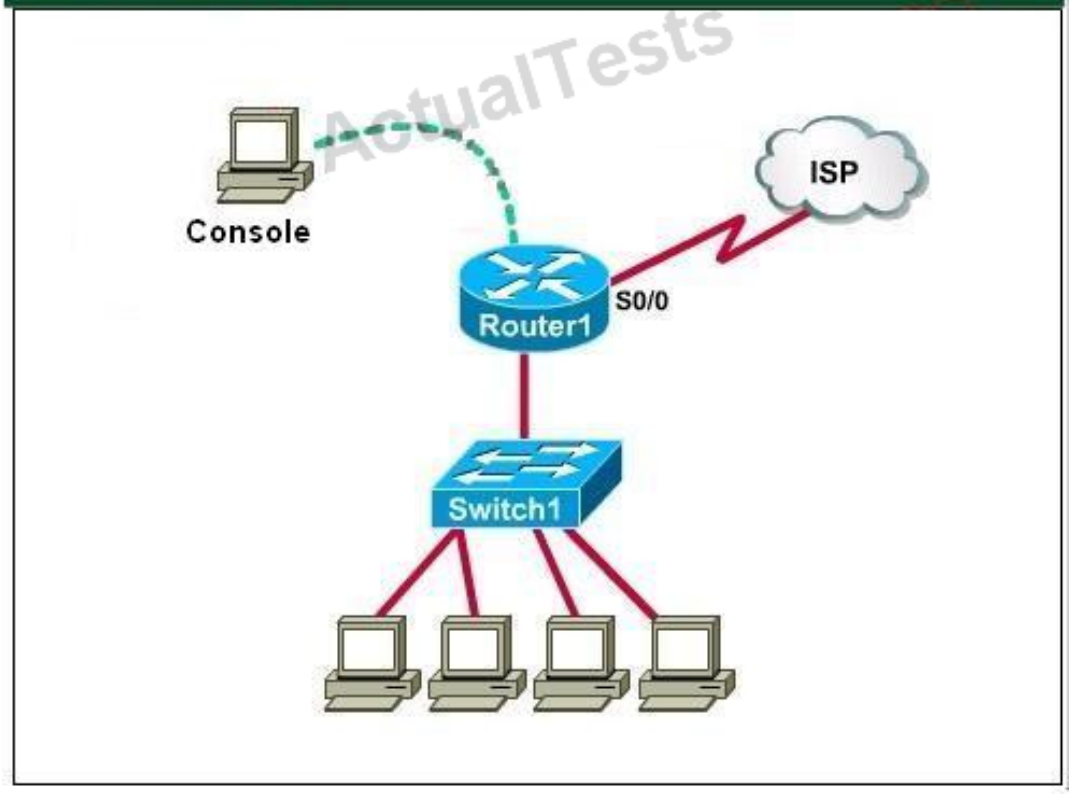
This task requires the use of various **show** commands from the CLI of Router1 to answer 5 multiple-choice questions. This does **not** require any configuration.

**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 5 multiple-choice questions with this task. Be sure to answer all 5 questions before leaving this item.

eSim Professional v1.0.1.9 00:00:58

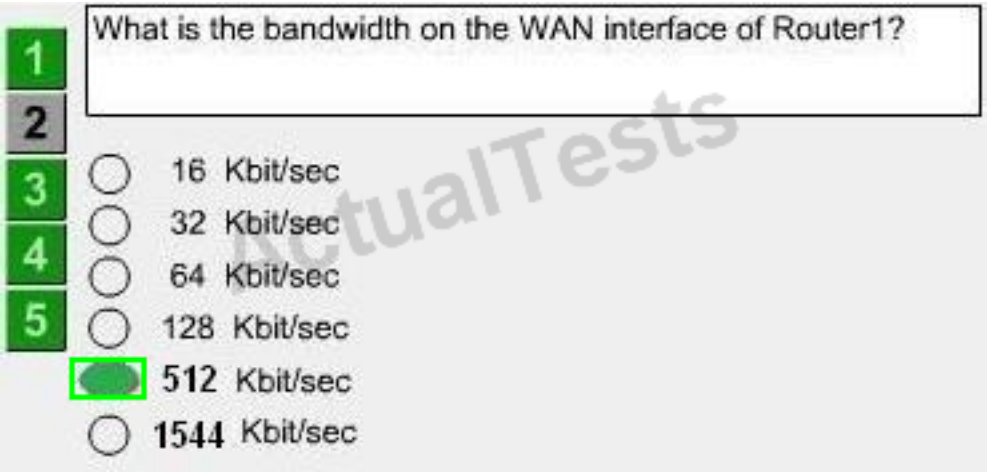



1 2 3 4 5

What is the bandwidth on the WAN interface of Router1?

- ○ 16 Kbit/sec
- ○ 32 Kbit/sec
- ○ 64 Kbit/sec
- ○ 128 Kbit/sec
- ● 512 Kbit/sec
- ○ 1544 Kbit/sec

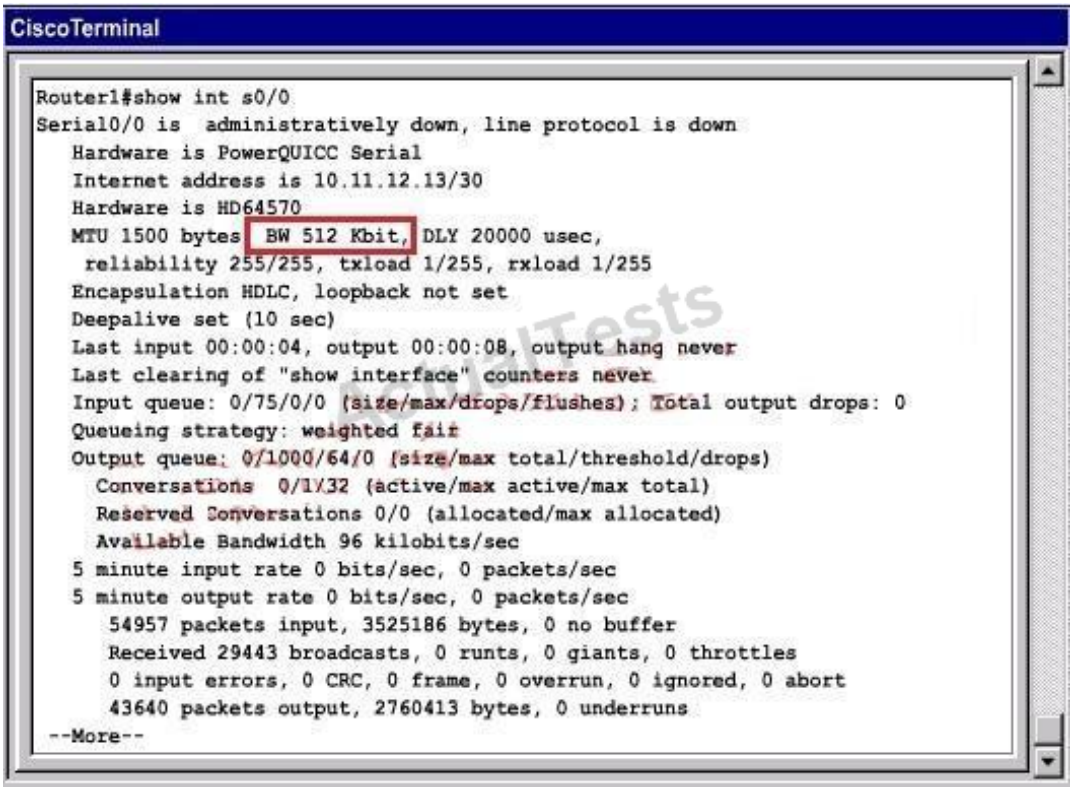
**Answer:**




**Explanation:**

512 Kbit/sec

Use the "show interfaces serial 0/0" command




C:\Documents and Settings\user-nwz\Desktop\1.JPG

**QUESTION NO: 200 HOTSPOT**

Click on the correct location or locations in the exhibit.

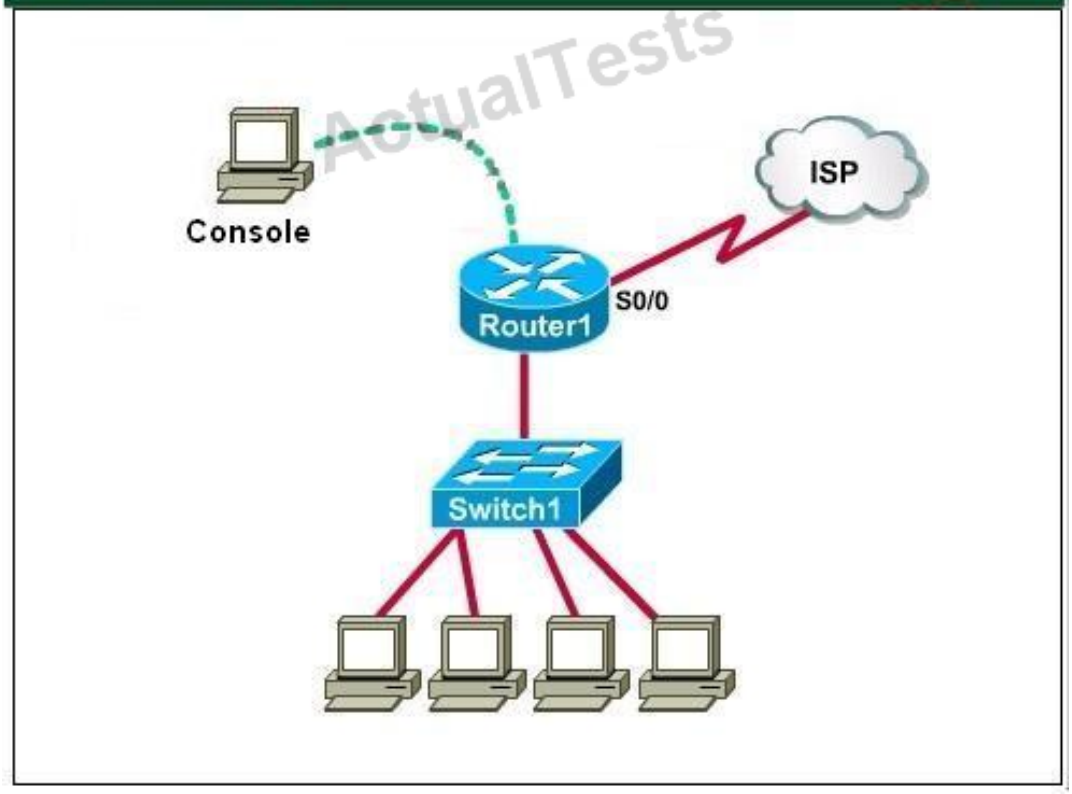
This task requires the use of various **show** commands from the CLI of Router1 to answer 5 multiple-choice questions. This does **not** require any configuration.

**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 5 multiple-choice questions with this task. Be sure to answer all 5 questions before leaving this item.

eSim Professional v1.0.1.9 00:00:58

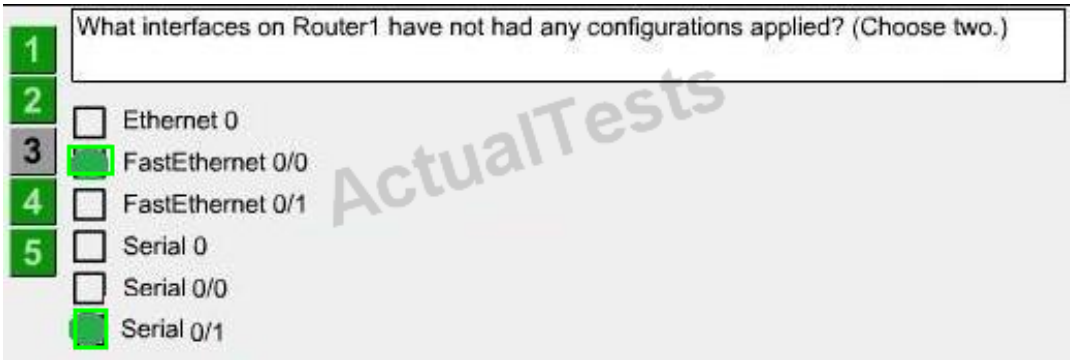



1 2 3 4 5

What interfaces on Router1 have not had any configurations applied? (Choose two.)

- [ ] Ethernet 0
- [x] FastEthernet 0/0
- [ ] FastEthernet 0/1
- [ ] Serial 0
- [ ] Serial 0/0
- [x] Serial 0/1

**Answer:**

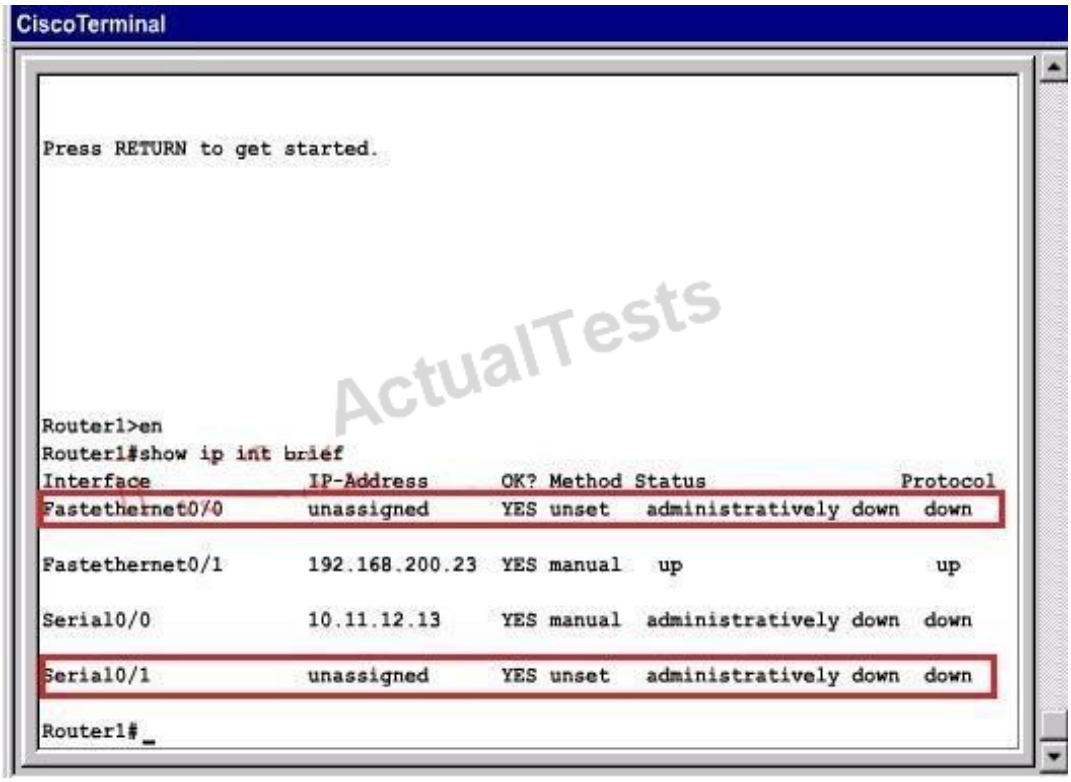



**Explanation:**

FastEthernet0/0 and Serial 0/1

User the "show ip interface brief" command

Notice that Router1 does not have Ethernet 0 and Serial 0 interfaces. FastEthernet 0/1 and Serial 0/0 were configured with their IP addresses therefore only FastEthernet 0/0 and Serial0/1 have not had any configurations applied.




C:\Documents and Settings\user-nwz\Desktop\1.JPG

**QUESTION NO: 201 HOTSPOT**

Click on the correct location or locations in the exhibit.

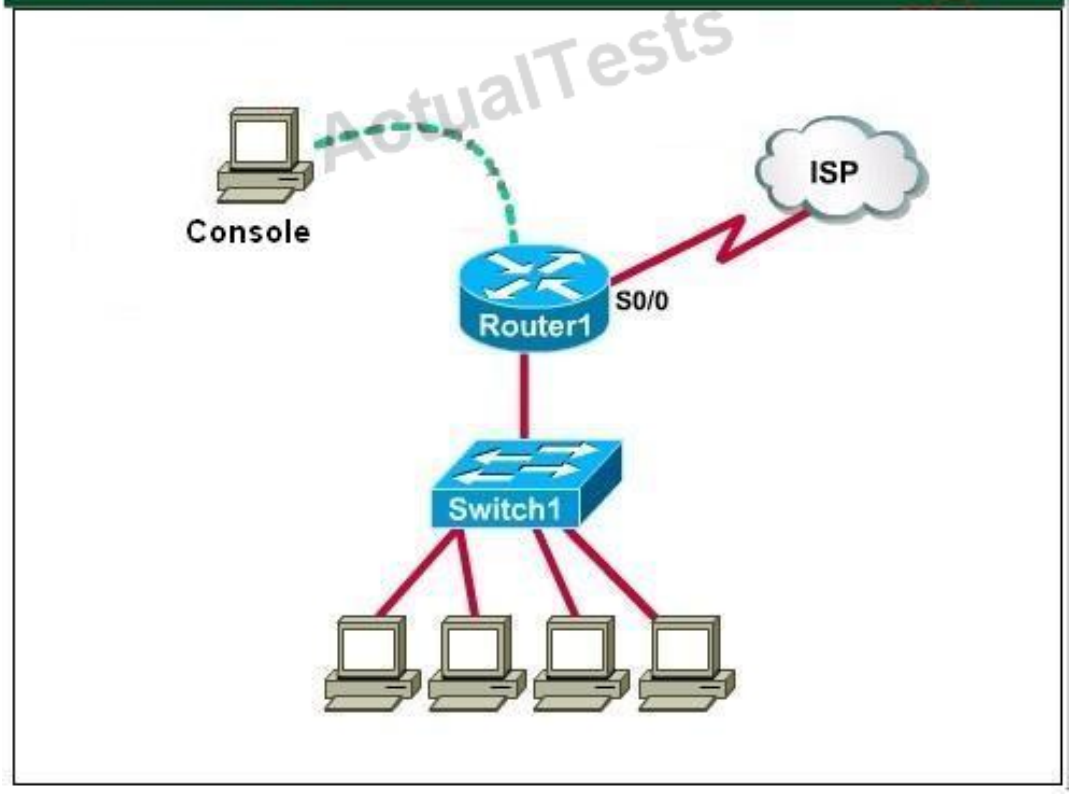
This task requires the use of various **show** commands from the CLI of Router1 to answer 5 multiple-choice questions. This does **not** require any configuration.

**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 5 multiple-choice questions with this task. Be sure to answer all 5 questions before leaving this item.

eSim Professional v1.0.1.9 00:00:58

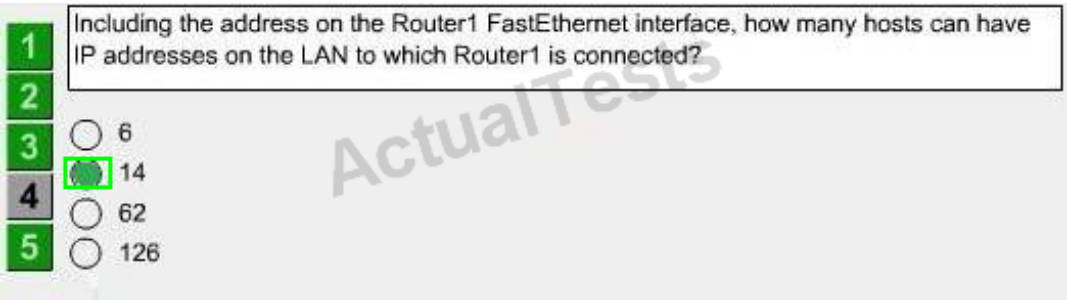



1 2 3 4 5

Including the address on the Router1 FastEthernet interface, how many hosts can have IP addresses on the LAN to which Router1 is connected?

- 6
- 14
- 62
- 126

**Answer:**




**Explanation:**

14

The mask address of interface Fa0/1 of Router1 is /28, which has four 0 bits (1111 1111.1111 1111.1111
1111.11110000). Therefore there are 24– 2 = 14 assignable IP addresses for hosts on the LAN.

**QUESTION NO: 202 HOTSPOT**

Click on the correct location or locations in the exhibit.

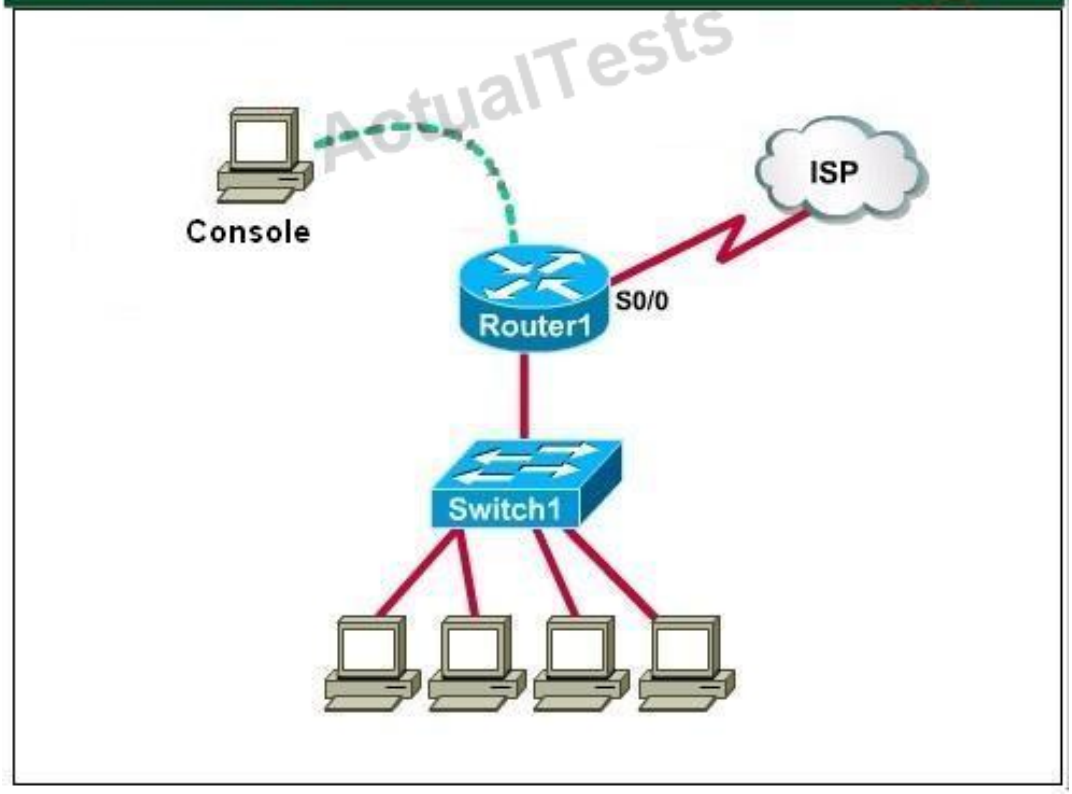
This task requires the use of various **show** commands from the CLI of Router1 to answer 5 multiple-choice questions. This does **not** require any configuration.

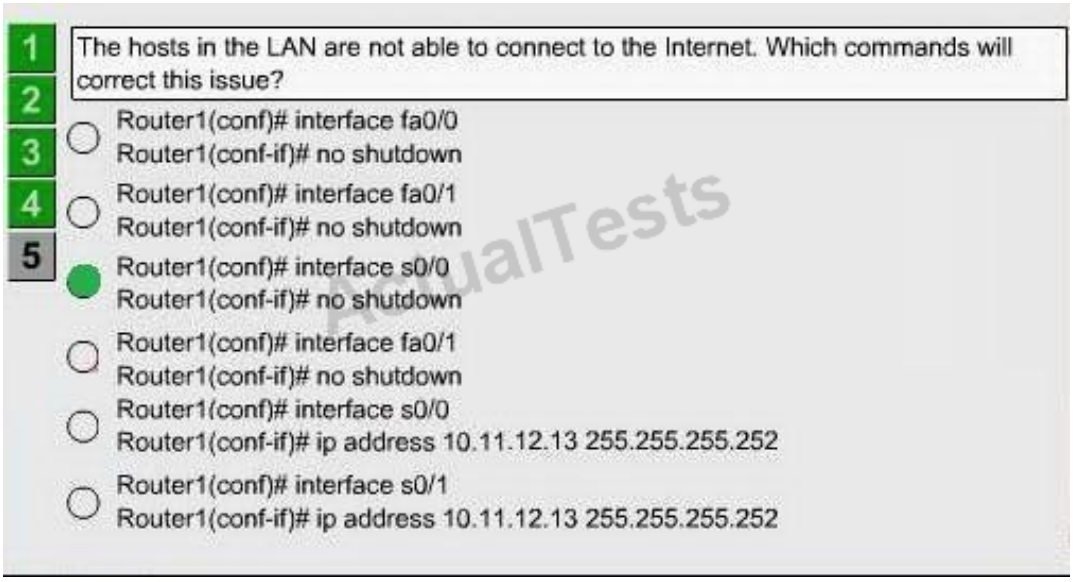
**NOTE: The show running-configuration and the show startup-configuration commands have been disabled in this simulation.**

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

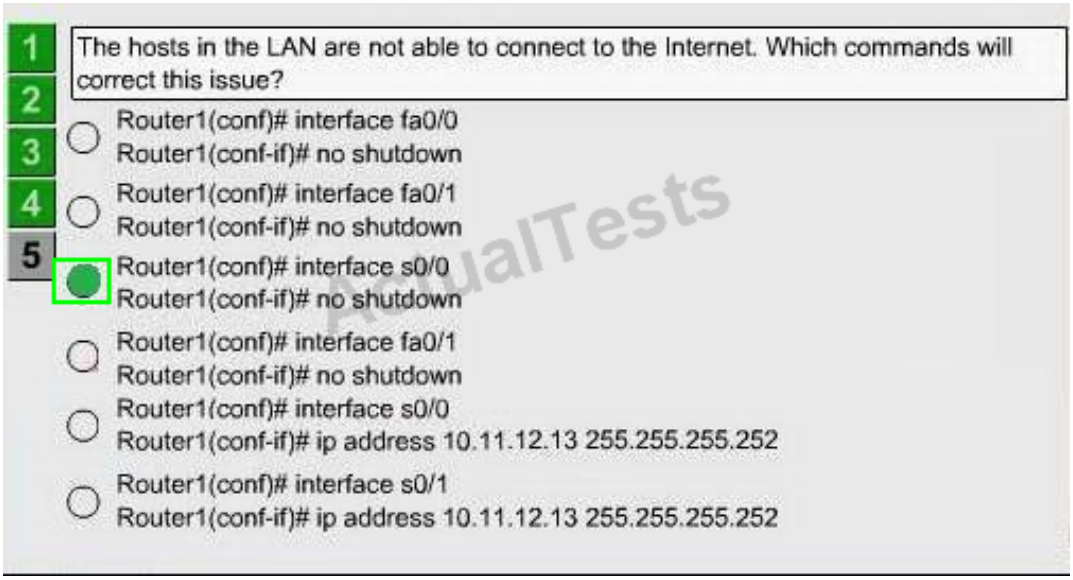
There are 5 multiple-choice questions with this task. Be sure to answer all 5 questions before leaving this item.

**eSim Professional v1.0.1.9** **00:00:58**



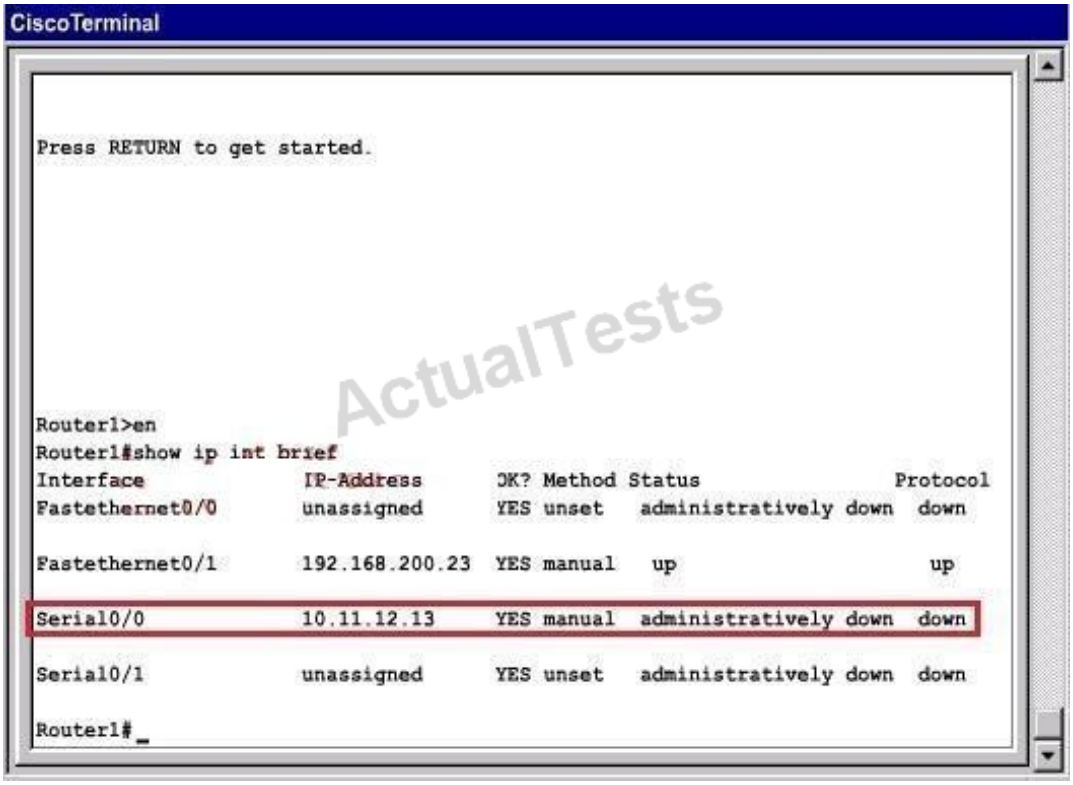



**Answer:**




**Explanation:** Router1(conf)# interface s0/0
Router1(conf-if)# no shutdown

User the "show ip interface brief" command




C:\Documents and Settings\user-nwz\Desktop\1.JPG

From the output, we learn that the status of Serial0/0 interface which connects to ISP router is currently "administratively down". This status indicates this interface is shutting down so we need to turn it on.

**QUESTION NO: 203 HOTSPOT**

Click on the correct location or locations in 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.



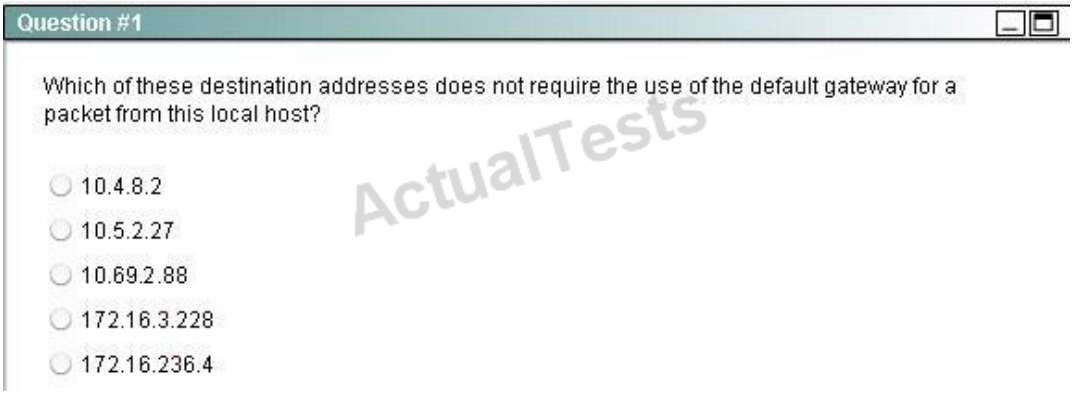
Scenario

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.

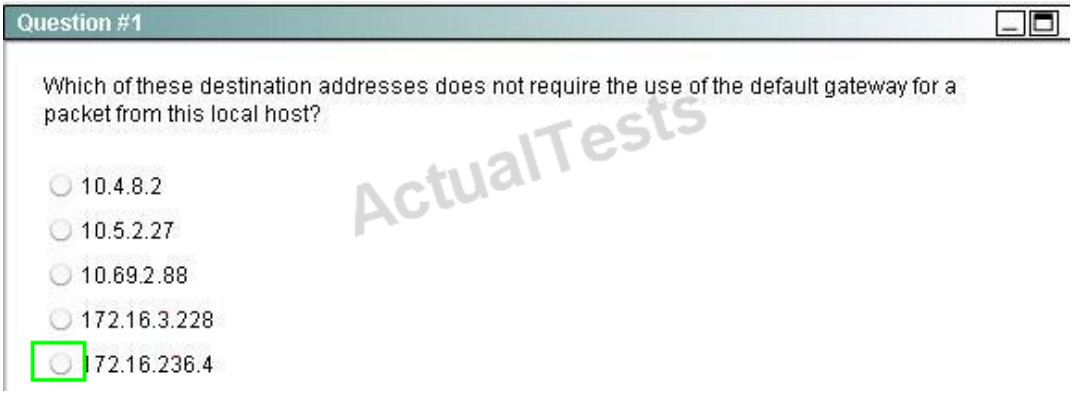
Exhibit

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 . . . . . . . . . . . : 172.16.3.2
        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 Expires . . . . . . . . . . : 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
```




**Answer:**




**Explanation:**

172.16.236.4

**QUESTION NO: 204 HOTSPOT**

Click on the correct location or locations in 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

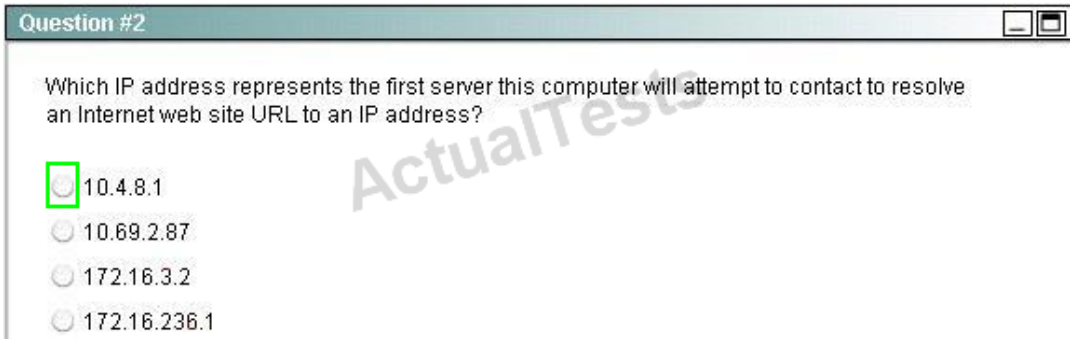
```
        Connection-specific DNS Suffix  . : cisco.com
        Description . . . . . . . . . . . : Intel(R) PRO/1000 MT Mobile

        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 . . . . . . . . . . . : 172.16.3.2
        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
```

**Question #2**

Which IP address represents the first server this computer will attempt to contact to resolve an Internet web site URL to an IP address?

- 10.4.8.1
- 10.69.2.87
- 172.16.3.2
- 172.16.236.1

**Answer:**

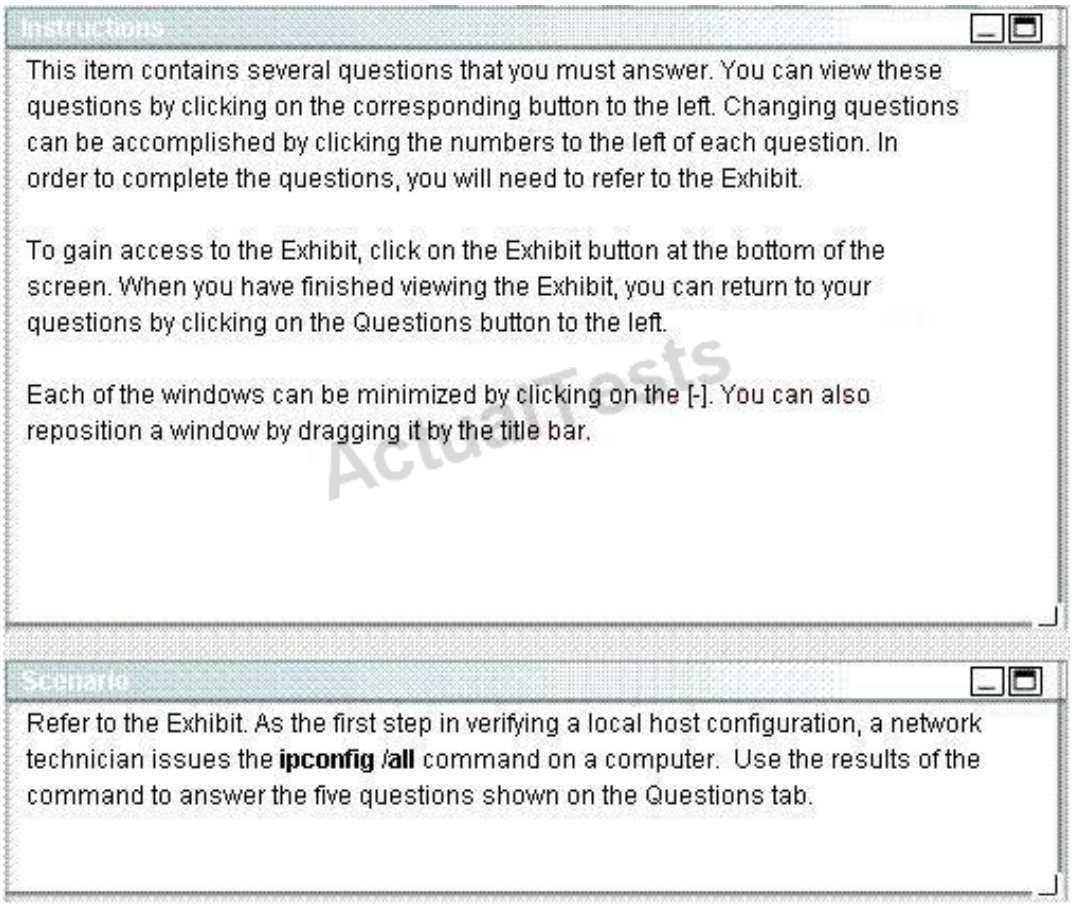


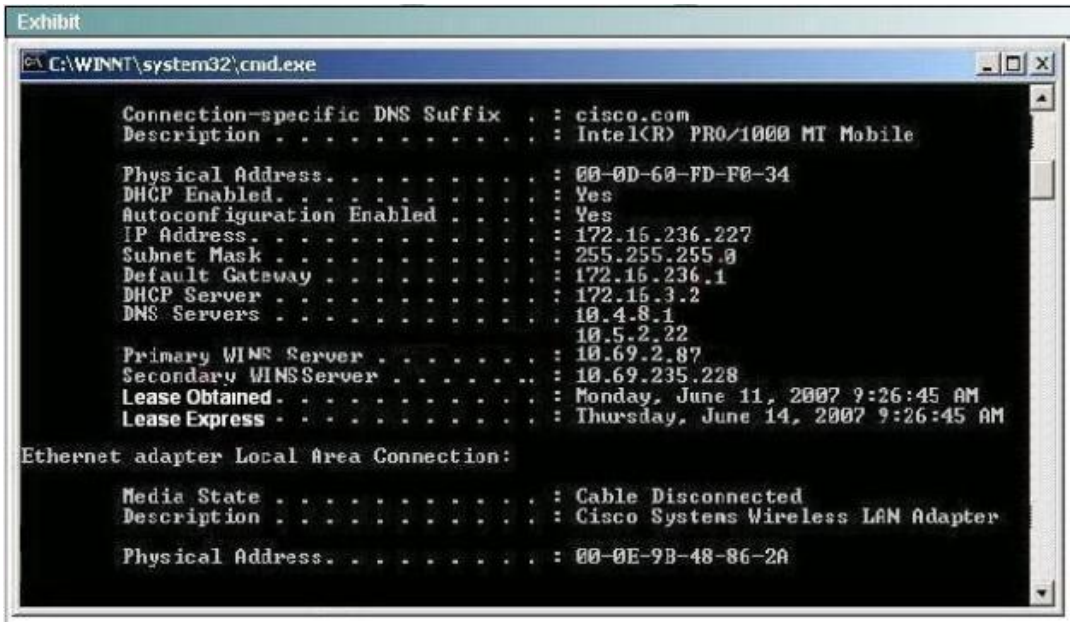

**Explanation:**

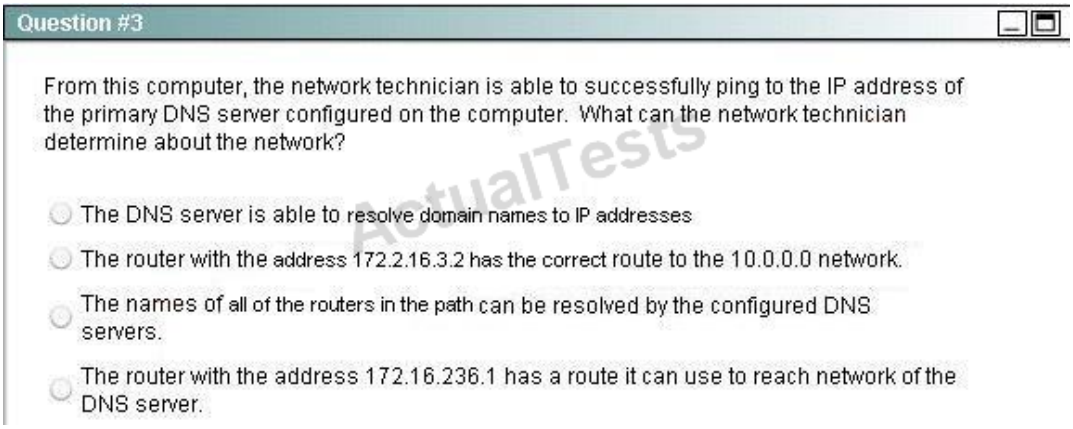
10.4.8.1

**QUESTION NO: 205 HOTSPOT**

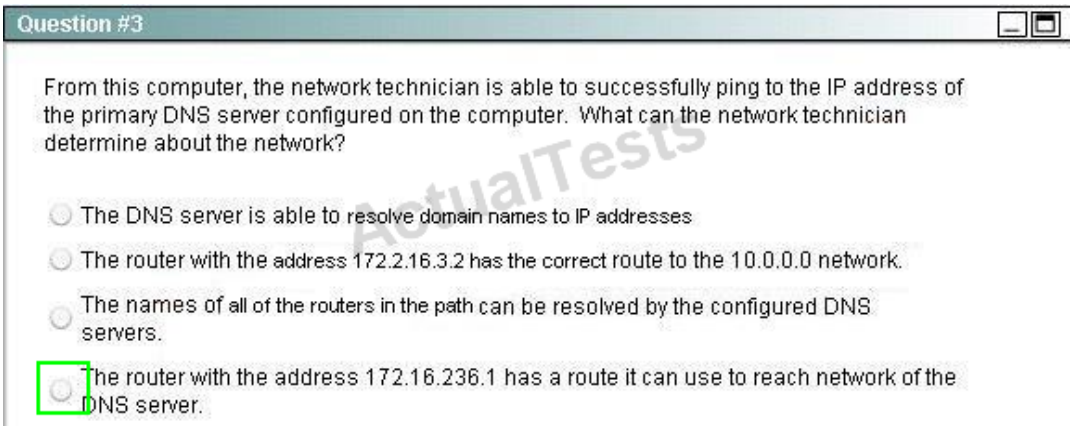
Click on the correct location or locations in the exhibit.






**Answer:**

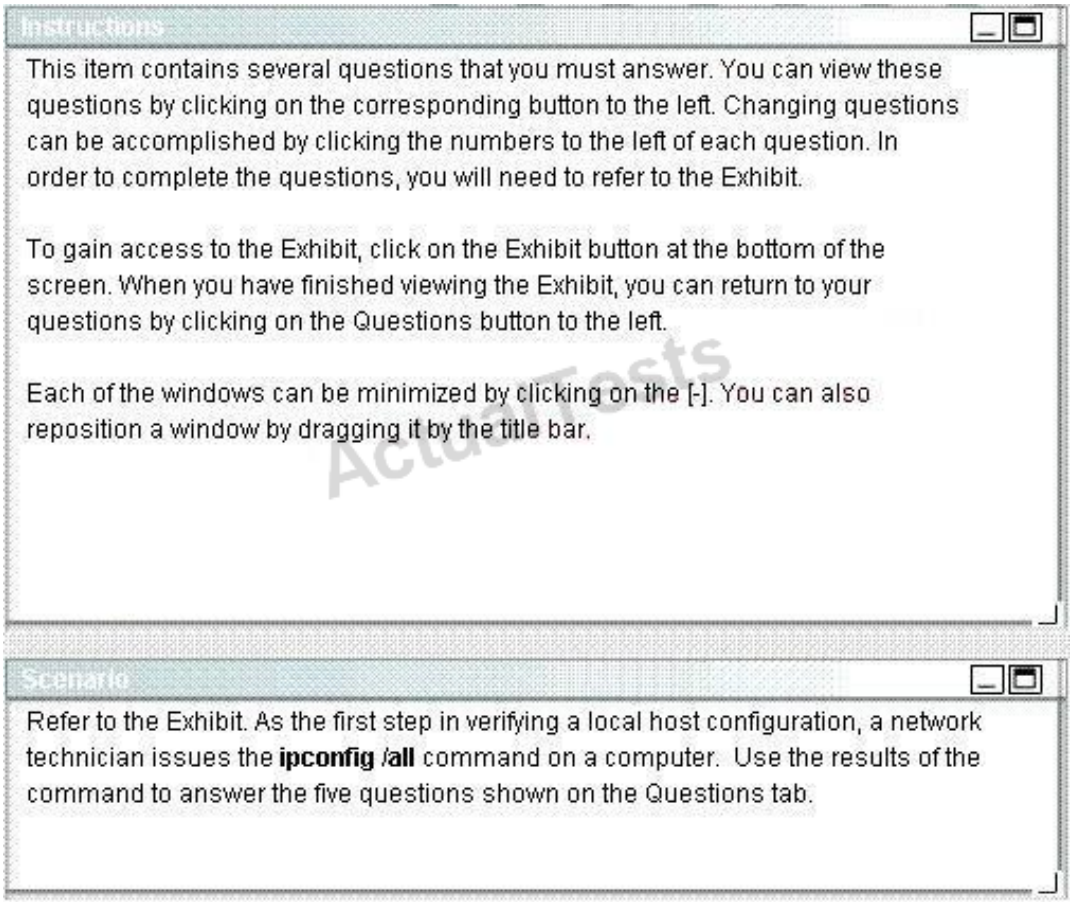


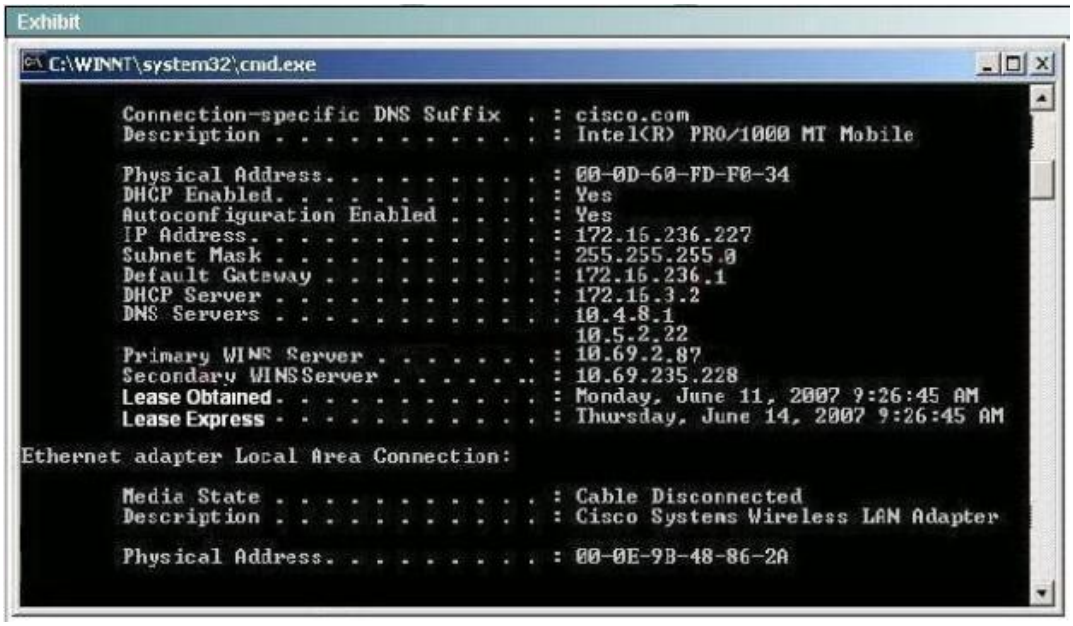

**Explanation:**

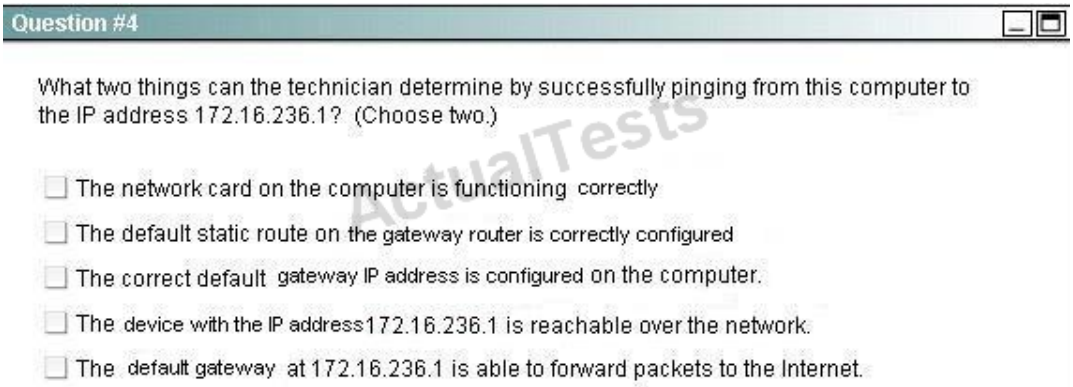
The router with the address 172.16.236.1 has a route it can use to reach network of the DNS server

**QUESTION NO: 206 HOTSPOT**

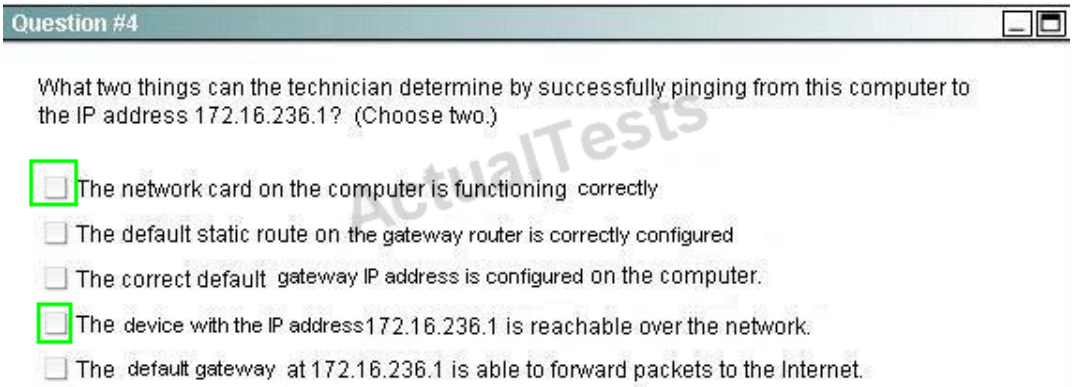
Click on the correct location or locations in the exhibit.






**Answer:**




**Explanation:** The network card on the computer is functioning correctly. The device with the IP address 172.16.236.1 is reachable over the network.

**QUESTION NO: 207 HOTSPOT**

Click on the correct location or locations in 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 . . . . . . . . . . . : 172.16.3.2
        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 Expires . . . . . . . . . . : 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
```

Question #5

Which statement is true about how the router with the IP address 172.16.236.1 will send a data packet to this computer?

- The router encapsulates the packet in a frame addressed to the MAC address FF-FF-FF-FF-FF-FF and sends it out the interface connected to the 172.16.236.0 network
- The router uses an ARP request to obtain the correct MAC address for the computer. It then encapsulates the packet in a frame addressed to the MAC address 00-0D-60-FD-F0-34.
- The routers encapsulates the packet in a frame addressed to the MAC address of the next hop router on the path to the computer.
- The router works at Layer 3 of the OSI model and does not use Layer 2 MAC addresses to send packets to the destination computer.

**Answer:**

Question #5

Which statement is true about how the router with the IP address 172.16.236.1 will send a data packet to this computer?

- The router encapsulates the packet in a frame addressed to the MAC address FF-FF-FF-FF-FF-FF and sends it out the interface connected to the 172.16.236.0 network
- The router uses an ARP request to obtain the correct MAC address for the computer. It then encapsulates the packet in a frame addressed to the MAC address 00-0D-60-FD-F0-34.
- The routers encapsulates the packet in a frame addressed to the MAC address of the next hop router on the path to the computer.
- The router works at Layer 3 of the OSI model and does not use Layer 2 MAC addresses to send packets to the destination computer.

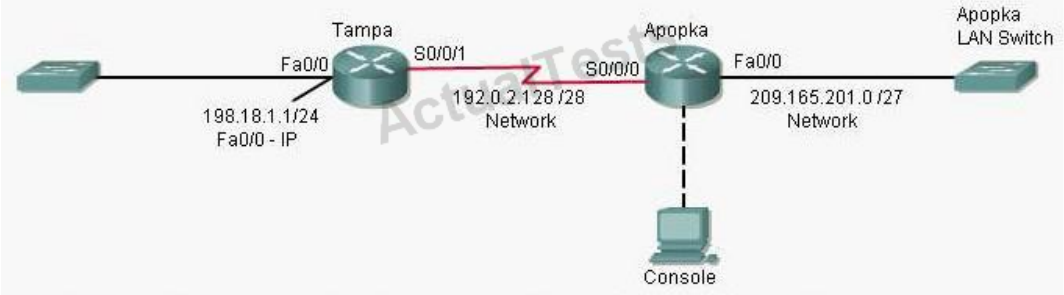
**Explanation:**

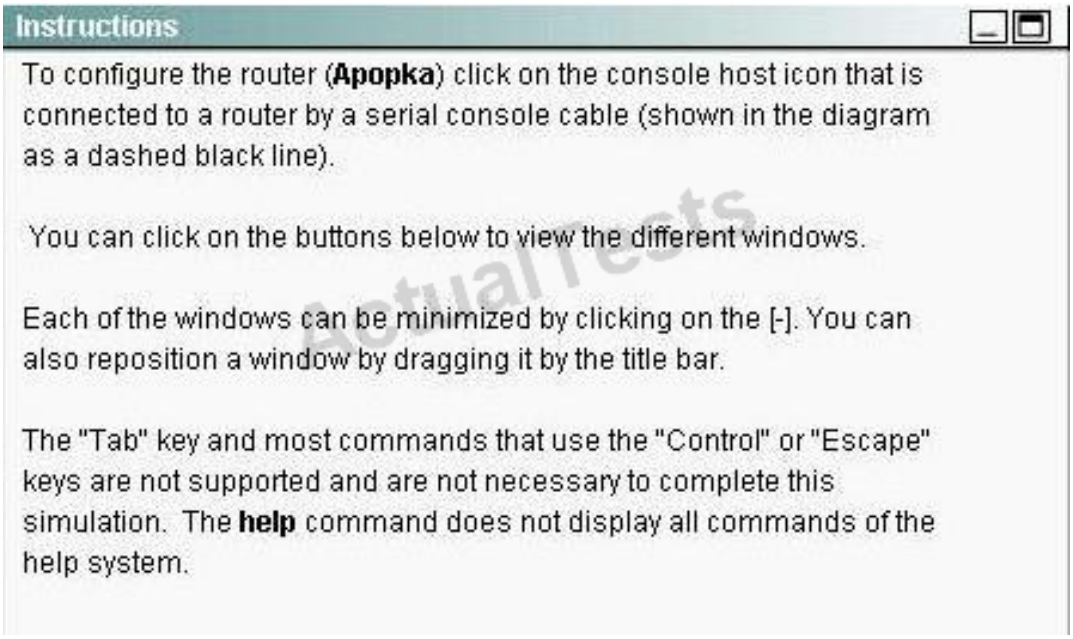
The router uses an ARP request to obtain the correct MAC address for the computer. It then encapsulates the packet in a frame addressed to the MAC address 00-0D-60-FD-F0-34.

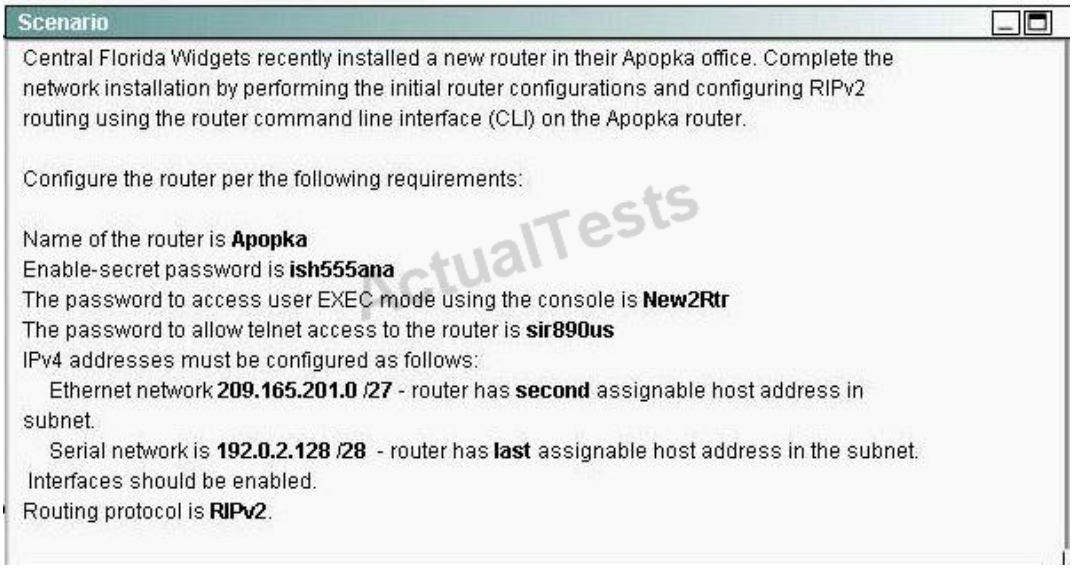
**Topic 6, Simulation/Lab Questions**

**QUESTION NO: 208 CORRECT TEXT**

Topology





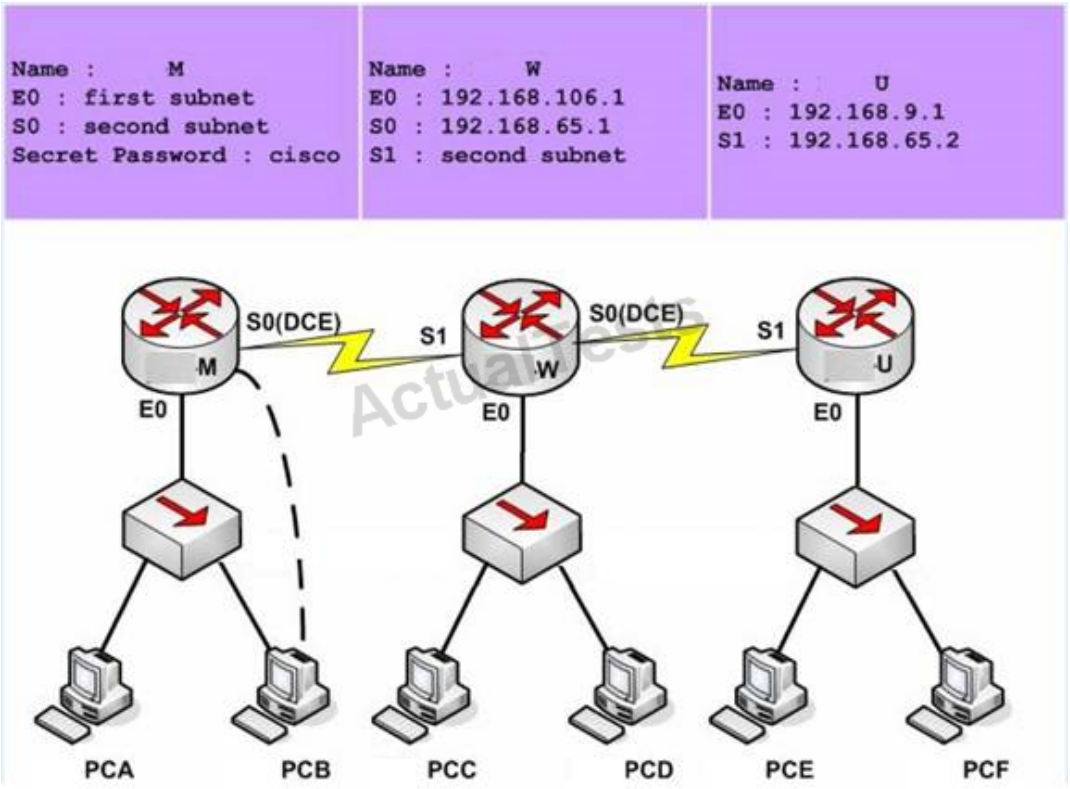




Answer: Router>enable
Router#config terminal
Router(config)#hostname Apopka
2) Enable-secret password (cisco10):
Apopka(config)#enable secret cisco10
3) Set the console password to RouterPass:
Apopka(config)#line console 0
Apopka(config-line)#password RouterPass
Apopka(config-line)#login
Apopka(config-line)#exit
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!

**QUESTION NO: 209 CORRECT TEXT**

There are three locations in a school district of a large city: ROUTER -M, ROUTER -W and ROUTER -U. The network connection between two of these locations has already functioned. Configure the ROUTER -M router IP addresses on the E0 and S0 interfaces so that the E0 receives the first usable subnet while the S0 receives the second usable subnet from the network 192.168.160.0/28. Both interfaces would receive the last available ip address on the proper subnet.




Answer: ROUTER-M> enable
Password: Cisco
ROUTER-M# config t
ROUTER-M(config)# interface e0
ROUTER-M(config-if)# ip address 192.168.160.14 255.255.255.240
ROUTER-M(config-if)# no shutdown
ROUTER -M(config-if)# exit
ROUTER -M(config)# interface s0
ROUTER-M(config-if)# ip address 192.168.160.30 255.255.255.240

ROUTER-M(config-if)# no shutdown
ROUTER-M(config-if)# end
ROUTER-M# copy run start

**QUESTION NO: 210 CORRECT TEXT**

This topology contains 3 routers and 1 switch. Complete the topology.

Drag the appropriate device icons to the labeled Device

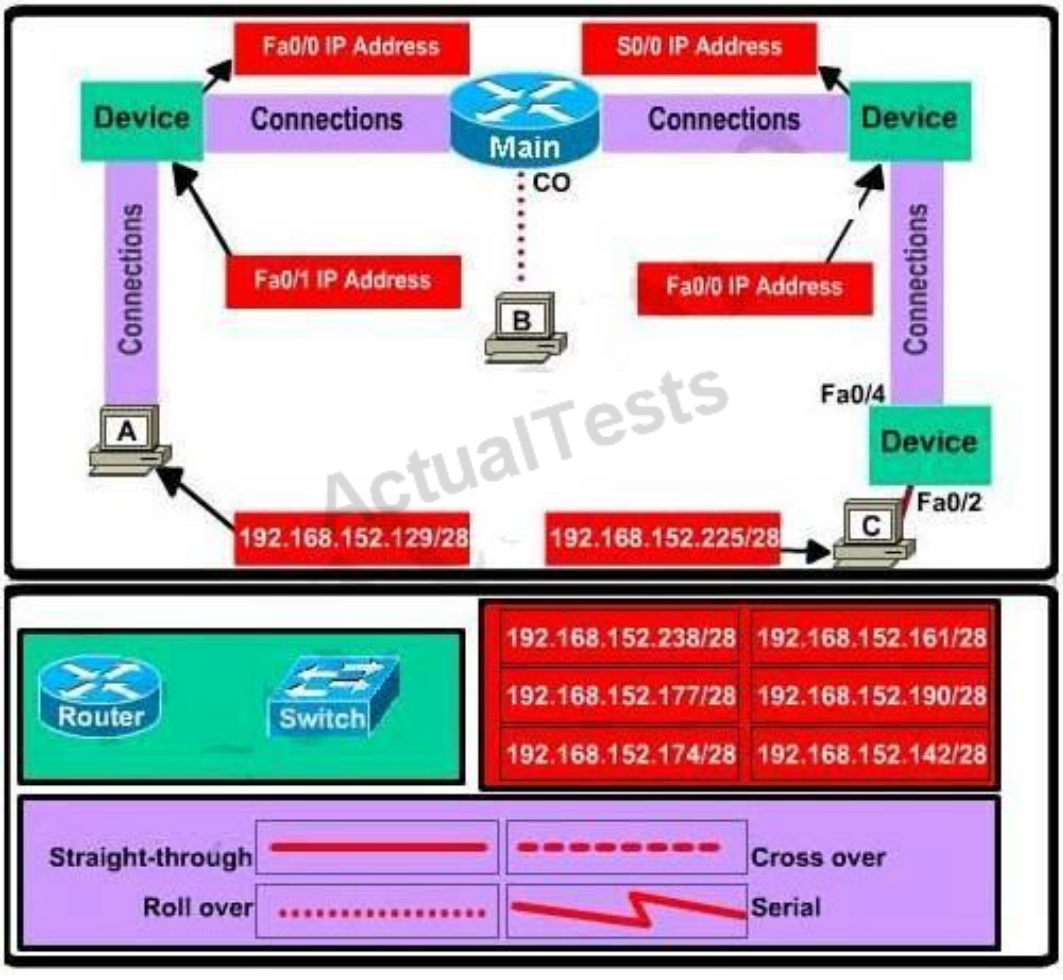
Drag the appropriate connections to the locations labeled Connections.

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

Note: 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.

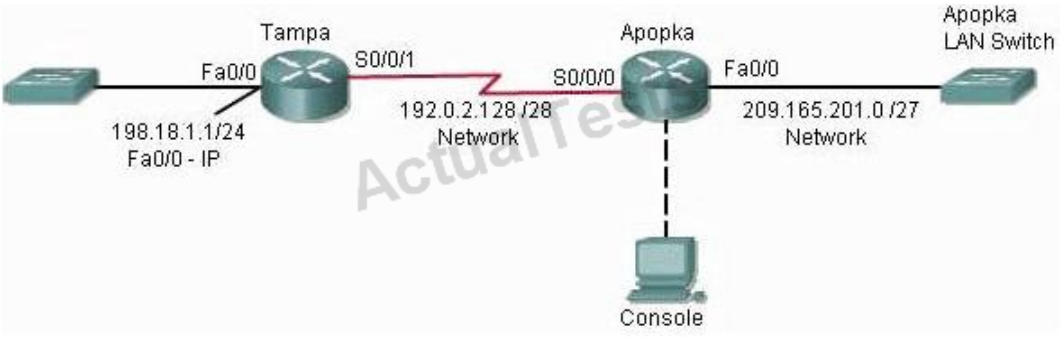
All hosts are PC’s

Answer: 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 1111.111**1** 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
and set console, telnet and privilege mode passwords for Router2 as we did for Router1, remember to save the configuration when you finished

**QUESTION NO: 211 CORRECT TEXT**




Central Florida Widgets recently installed a new router in their Apopka office. Complete the network installation by performing the initial router configurations and configuring RIPv2 routing

using the router command line interface (CLI) on the Apopka router.

Configure the router per the following requirements:

Name of the router is **Apopka**

Enable-secret password is cisco10

The password to access user EXEC mode using the console is RouterPass

The password to allow telnet access to the router is scan90

IPv4 addresses must be configured as follows:

Ethernet network 209.165.201.0/27 – router has second assignable host address in subnet.

Serial network is 192.0.2.128/28 – router has last assignable host address in the subnet. Interfaces should be enabled.

Routing protocol is RIPv2.

**Instruction:**

To configure the router (Apopka) click on the console host icon that is connected to a router by a serial console cable (shown in the diagram as a dashed black line).

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. The help command does not display all commands of the help system.

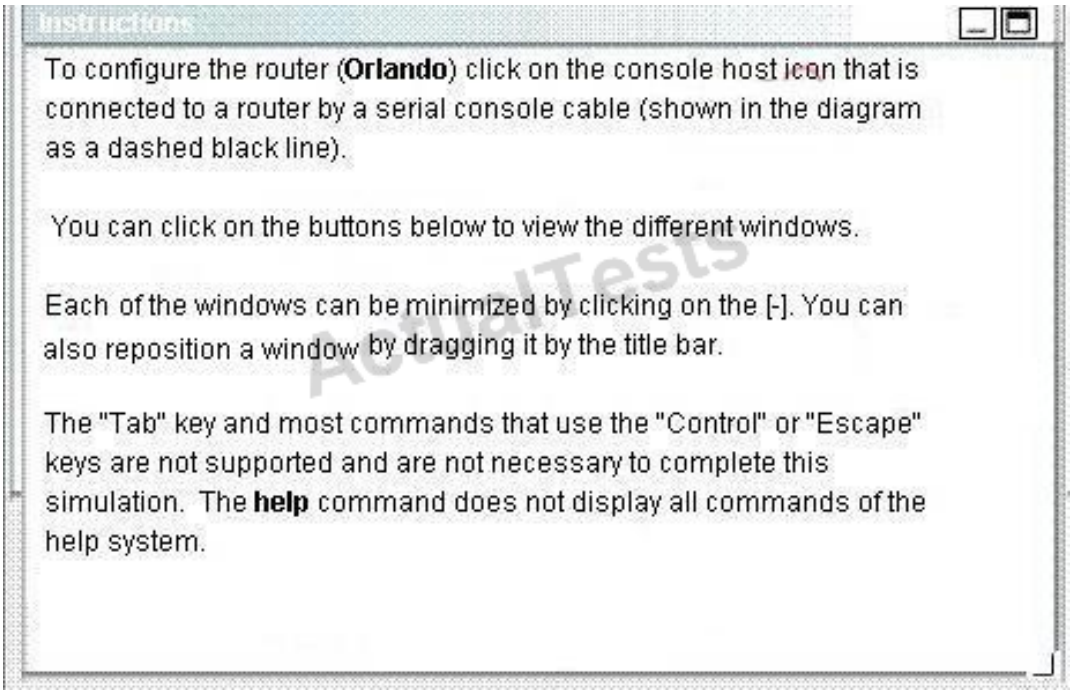
Answer: 1) Name the router:
Router>enable
Router#config terminal
Router(config)#hostname Apopka
2) Enable-secret password (cisco10):
Apopka(config)#enable secret cisco10
3) Set the console password to RouterPass:
Apopka(config)#line console 0
Apopka(config-line)#password RouterPass
Apopka(config-line)#login

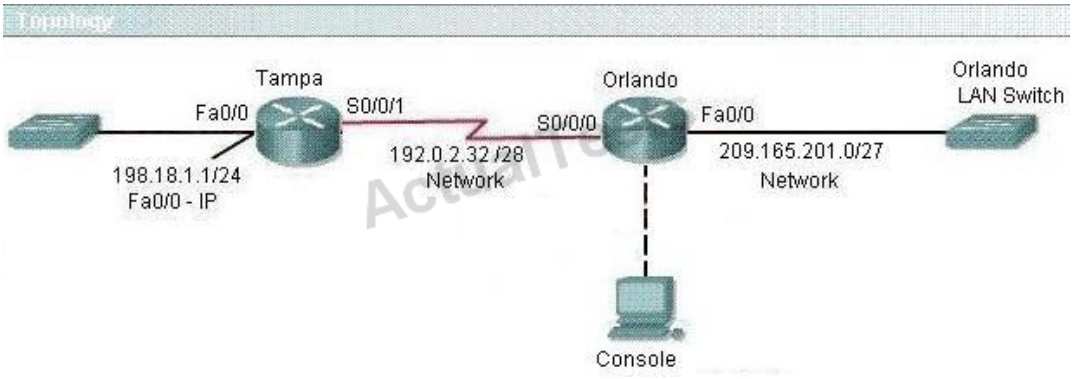
Apopka(config-line)#exit
4) Set the Telnet password to scan90:
Apopka(config)#line vty 0 4
Apopka(config-line)#password scan90
Apopka(config-line)#login
Apopka(config-line)#exit
5) Configure Ethernet interface (on the right) of router Apopka:
The subnet mask of the Ethernet network 209.165.201.0 is 27. 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!

**QUESTION NO: 212 CORRECT TEXT**

Lab SIM - RIP v2



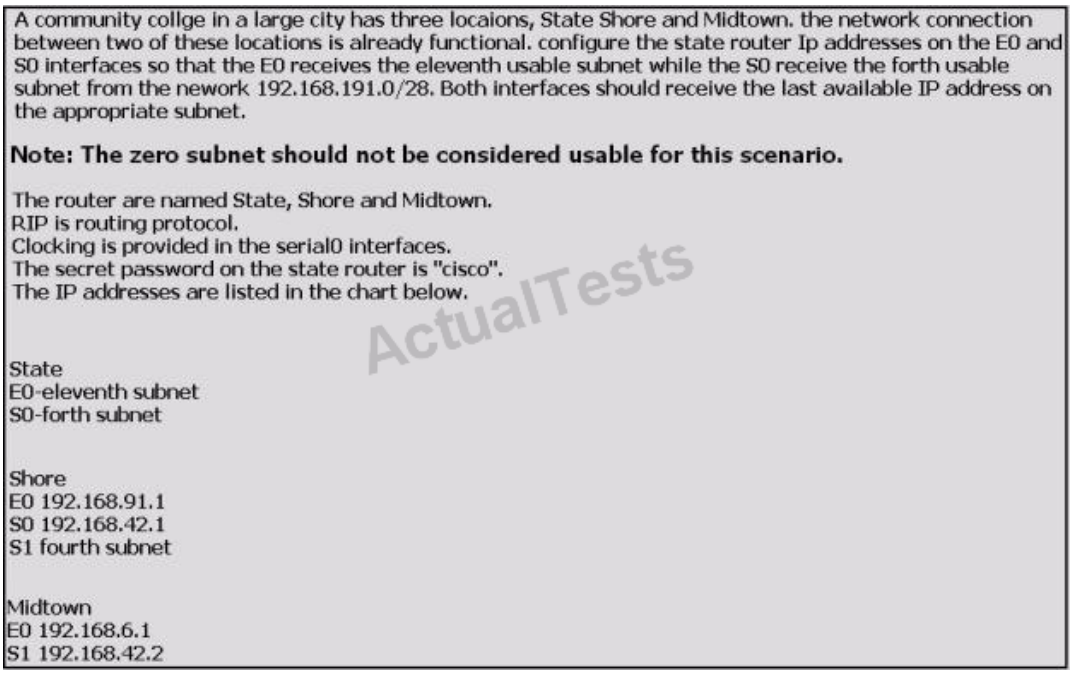

Answer: Here are the answer with solution
(1) Name the router:
Router>enable
Router#config terminal
Router(config)#hostname Orlando
(2) Enable-secret password (cisco10):

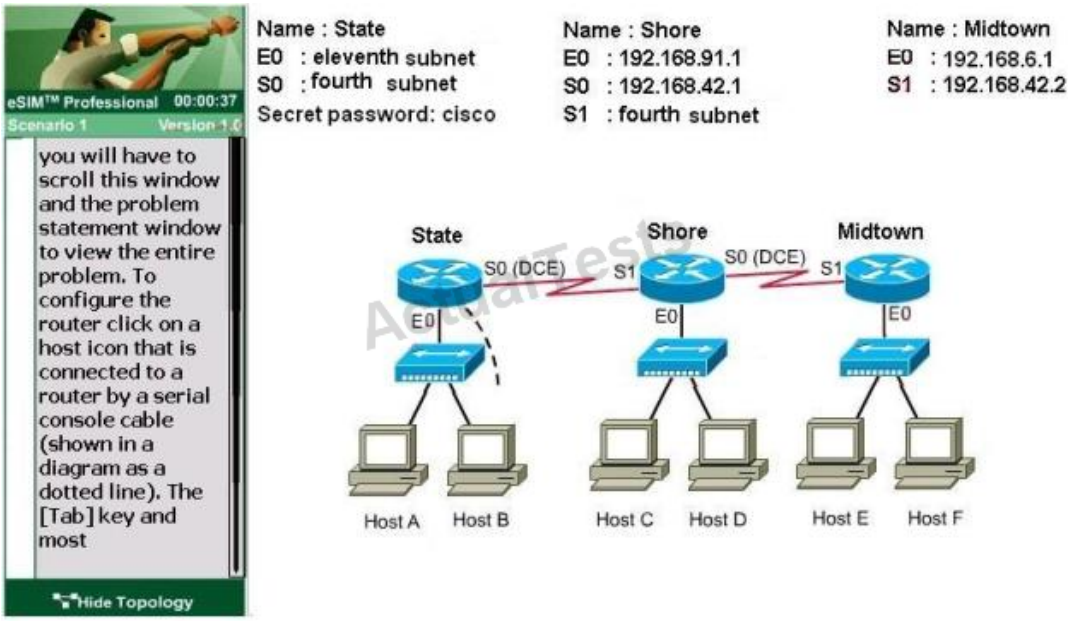
Orlando(config)#enable secret cisco10
(3) Set the console password toRouterPass:
Orlando(config)#line console 0
Orlando(config-line)#password RouterPass
Orlando(config-line)#login
Orlando(config-line)#exit
(4) Set the Telnet password toscan90:
Orlando(config)#line vty 0 4
Orlando(config-line)#password scan90
Orlando(config-line)#login
Orlando(config-line)#exit
(5) Configure Ethernet interface (on the right) of router Orlando:
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 is209.165.201.2/27
Assign the second assignable host address to Fa0/0 interface of Orlando router:
Orlando(config)#interface Fa0/0
Orlando(config-if)#ip address 209.165.201.2 255.255.255.224
Orlando(config-if)#no shutdown
Orlando(config-if)#exit
(6)Configure Serial interface (on the left) of router Orlando:
Using the same method to find out the increment of the Serial network:
Serial network192.0.2.128/28:
Increment:16 (/28 = 1111 1111.1111 1111.1111 1111.11110000)
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 is192.0.2.142/28.
Assign the last assignable host address to S0/0/0 interface of Orlando router:
Orlando(config)#interface S0/0/0(or use interface S0/0 if not successful)
Orlando(config-if)#ip address 192.0.2.142 255.255.255.240
Orlando(config-if)#no shutdown

Orlando(config-if)#exit
(7) Configure RIP v2 routing protocol:
Orlando(config)#router rip
Orlando(config-router)#version 2
Orlando(config-router)#network 209.165.201.0
Orlando(config-router)#network 192.0.2.128
Orlando(config-router)#end
(8)Save the configuration:
Orlando#copy running-config startup-config
Finally, you should use thepingcommand to verify all are working properly!

**QUESTION NO: 213 CORRECT TEXT**

Lab SIM – OSPF






Answer:

Answer:

Answer:

Answer:

Answer: Here the step by step solution

State> enable

Password: Cisco

State# config t

State(config)# interface e0

State(config-if)# ip address 192.168.191.14 255.255.255.240

State(config-if)# no shutdown

State(config-if)# exit

State(config)# interface s0

State(config-if)# ip address 192.168.191.30 255.255.255.240

State(config-if)# no shutdown

State(config-if)# end

State# copy run start

**Topic 7, Multiple Choice Questions Set E**

**QUESTION NO: 214**

Which router command can be used to determine the status of Serial 0/0?

**A.** show ip route

**B.** show interfaces

**C.** show s0/0 status
**D.** debug s0/0
**E.** show run
**F.** show version

**Answer: B**
**Explanation:**

**QUESTION NO: 215**

Which commands display information about the Cisco IOS software version currently running on a router? (Choose three.)

**A.** show running-config
**B.** show stacks
**C.** show version
**D.** show flash
**E.** show protocols
**F.** show IOS

**Answer: A,C,D**
**Explanation:**

**QUESTION NO: 216**

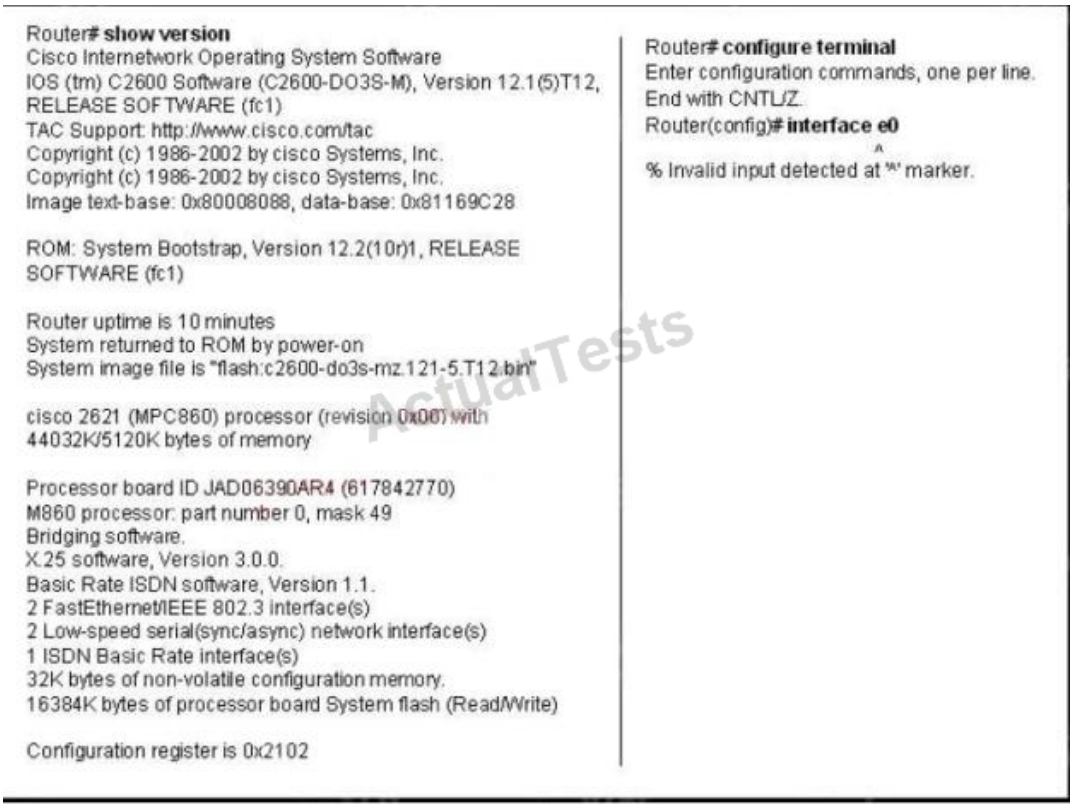
After the shutdown command has been issued on the serial 0/0 interface, what will be displayed when the show interface serial 0/0 command is issued by the administrator?

**A.** Serial0/0 is administratively down, line protocol is down
**B.** Serial0/0 is down, line protocol is down
**C.** Serial0/0 is up, line protocol is down
**D.** Serial0/0 is administratively down, line protocol is administratively down
**E.** Serial0/0 is up, line protocol is up
**F.** Serial0/0 is down, line protocol is up

**Answer: A**
**Explanation:**

**QUESTION NO: 217**

Refer to the output of the three router commands shown in the exhibit. A new technician has been told to add a new LAN to the company router. Why has the technician received the error message that is shown following the last command?




**A.** The interface was already configured.
**B.** The interface type does not exist on this router platform.
**C.** The IOS software loaded on the router is outdated.
**D.** The router does not support LAN interfaces that use Ethernet.
**E.** The command was entered from the wrong prompt.

**Answer: B**

**Explanation:**

**QUESTION NO: 218**

The system LED is amber on a Cisco Catalyst 2950 series switch. What does this indicate?

**A.** The system is malfunctioning.
**B.** The system is not powered up.
**C.** The system is powered up and operational.
**D.** The system is forwarding traffic.

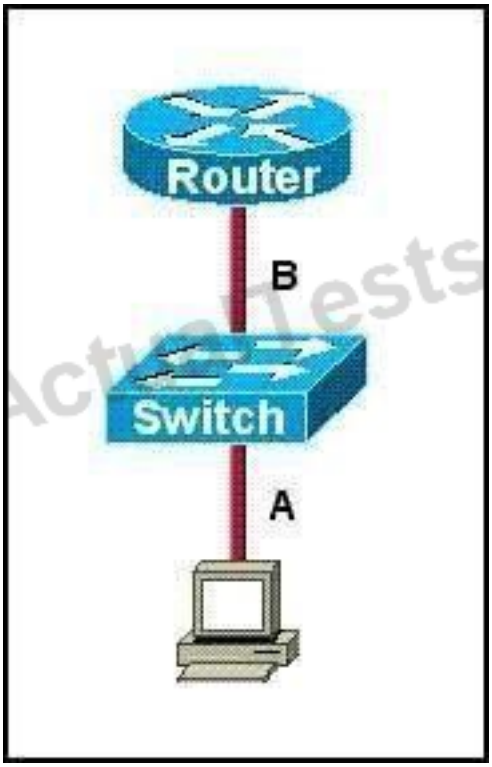
**E.** The system is sensing excessive collisions.

**Answer: A**

**Explanation:**

**QUESTION NO: 219**

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.)



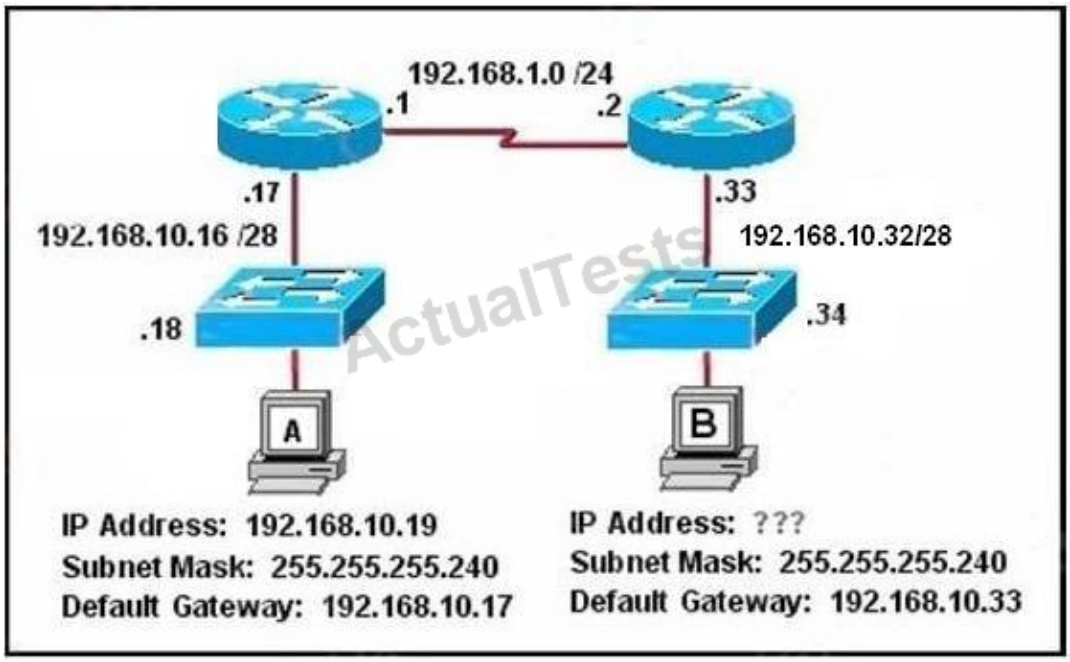

**A.** Ensure that the Ethernet encapsulations match on the interconnected router and switch ports.
**B.** Ensure that cables A and B are straight-through cables.
**C.** Ensure cable A is plugged into a trunk port.
**D.** Ensure the switch has power.
**E.** Reboot all of the devices.
**F.** Reseat all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

**Answer: B,D,F**

**Explanation:**

**QUESTION NO: 220**

Refer to the exhibit. Host B has just been added to the network and must acquire an IP address. Which two addresses are possible addresses that will allow host B to communicate with other devices in the network? (Choose two.)



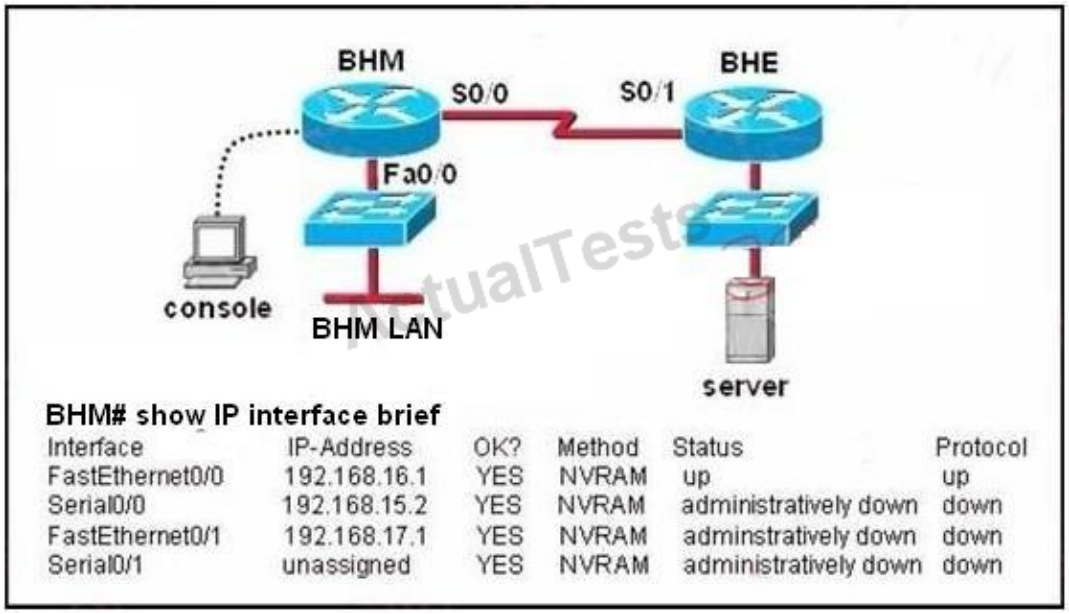

**A.** 192.168.10.32
**B.** 192.168.10.38
**C.** 192.168.10.46
**D.** 192.168.10.47
**E.** 192.168.10.49
**F.** 192.168.10.51

**Answer: B,C**

**Explanation:**

**QUESTION NO: 221**

Examine the network diagram and router output shown in the exhibit. Users on the BHM LAN are unable to access the server attached to the BHE router. What two things should be done to fix this problem? (Choose two.)



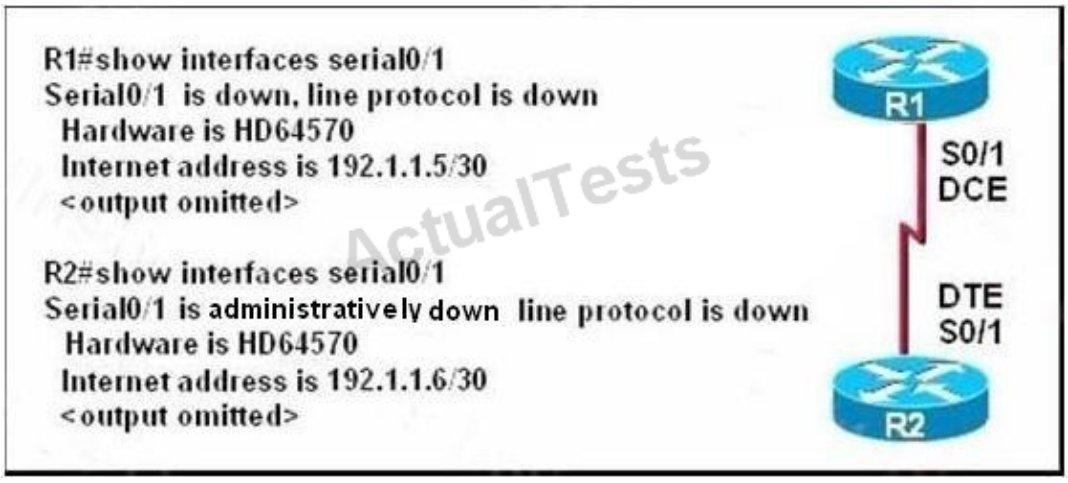

**A.** Enter the configuration mode for interface fastethernet0/0.
**B.** Enter the configuration mode for interface serial0/0.
**C.** Enter the configuration mode for interface serial0/1.
**D.** Issue the run command.
**E.** Issue the enable command.
**F.** Issue the no shutdown command.

**Answer: B,F**

**Explanation:**

**QUESTION NO: 222**

Refer to the exhibit. A network technician is unable to ping from R1 to R2. Using the output of the show interfaces serial0/1 command, what should the administrator do to correct the problem?

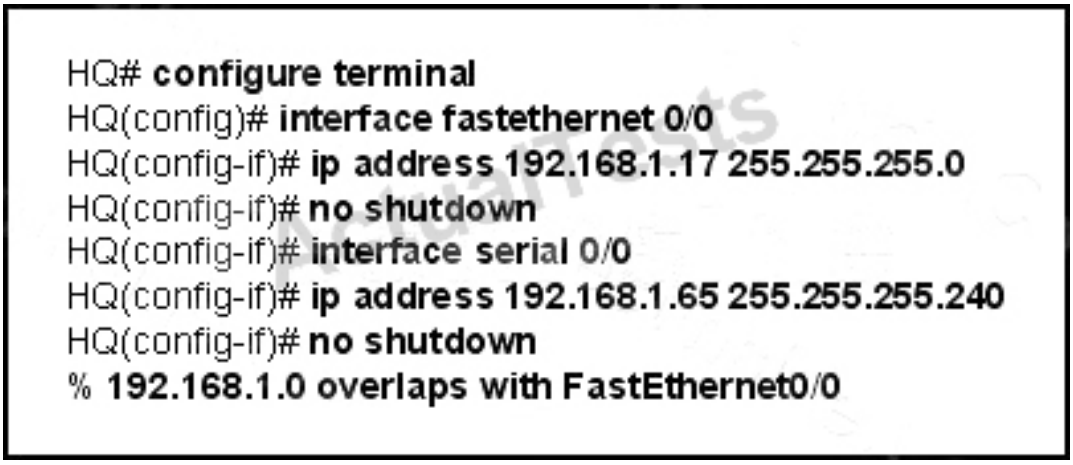


**A.** Replace the serial cable between R1 and R2.
**B.** Reseat the serial connectors on the R1 and R2 routers.
**C.** Configure the serial0/1 interface on R2 with the no shutdown command.
**D.** Configure the serial0/1 interface on R1 with the clock rate 56000 command.
**E.** Configure the serial0/1 interface on R1 with the ip address 192.1.1.7 255.255.255.252 command.

**Answer: C**
**Explanation:**

**QUESTION NO: 223**

Refer to the exhibit.




After configuring two interfaces on the HQ router, the network administrator notices an error message. What must be done to fix this error?

**A.** The serial interface must be configured first.
**B.** The serial interface must use the address 192.168.1.2.
**C.** The subnet mask of the serial interface should be changed to 255.255.255.0.
**D.** The subnet mask of the FastEthernet interface should be changed to 255.255.255.240.
**E.** The address of the FastEthernet interface should be changed to 192.168.1.66.

**Answer: D**
**Explanation:**

**QUESTION NO: 224**

From where does a small network get its IP network address?

**A.** Internet Assigned Numbers Authority (IANA)
**B.** Internet Architecture Board (IAB)
**C.** Internet Service Provider (ISP)
**D.** Internet Domain Name Registry (IDNR)

**Answer: C**
**Explanation:**

**QUESTION NO: 225**

A network administrator has subnetted the 172.16.0.0 network using a subnet mask of 255.255.255.192. A duplicate IP address of 172.16.2.120 has accidentally been configured on a workstation in the network. The technician must assign this workstation a new IP address within that same subnetwork. Which address should be assigned to the workstation?

**A.** 172.16.1.80
**B.** 172.16.2.80
**C.** 172.16.1.64
**D.** 172.16.2.64
**E.** 172.16.2.127
**F.** 172.16.2.128

**Answer: B**
**Explanation:**

**QUESTION NO: 226**

What does the "Inside Global" address represent in the configuration of NAT?

**A.** the summarized address for all of the internal subnetted addresses
**B.** the MAC address of the router used by inside hosts to connect to the Internet
**C.** a globally unique, private IP address assigned to a host on the inside network
**D.** a registered address that represents an inside host to an outside network

**Answer: D**
**Explanation:**

**QUESTION NO: 227**

Which form of NAT maps multiple private IP addresses to a single registered IP address by using different ports?

**A.** static NAT
**B.** dynamic NAT
**C.** overloading
**D.** overlapping
**E.** port loading

**Answer: C**
**Explanation:**

**QUESTION NO: 228**

Which command can be used to determine the type of cable attached to the Serial 0/0 interface on a router?

**A.** show interfaces serial 0/0
**B.** show running-config
**C.** show version
**D.** show controllers serial 0/0
**E.** show ip interface
**F.** show line serial 0/0

**Answer: D**
**Explanation:**

**QUESTION NO: 229**

What is the purpose of a default route?

**A.** It is a route to be used when the routing protocol fails.
**B.** It is a route configured by an ISP that sends traffic into a corporate network.
**C.** It is a route used when a packet is destined for a remote network that is not listed in the routing table.

**D.** It is a route manually configured for a specific remote network for which a routing protocol is not configured.
**E.** It is used to send traffic to a stub network.

**Answer: C**
**Explanation:**

**QUESTION NO: 230**

Which command is used on a Cisco router to reach the global configuration mode?

**A.** Router> enable
**B.** Router# router
**C.** Router# setup
**D.** Router# interface
**E.** Router# configure terminal

**Answer: E**
**Explanation:**

**QUESTION NO: 231**

By which prompt is the global configuration mode on a Cisco router identified?

**A.** Router>
**B.** Router#
**C.** Router(config)#
**D.** Router(config-if)#
**E.** Router(config-line)#
**F.** Router(config-router)#

**Answer: C**
**Explanation:**

**QUESTION NO: 232**

What is the result of adding this command to a router that is already configured for dynamic routing?

ip route 0.0.0.0 0.0.0.0 192.168.1.2

**A.** It configures the router as a firewall, blocking all packets from IP address 192.168.1.2.
**B.** It configures the router to block routing updates from being sent to IP address 192.168.1.2.
**C.** It configures the router to drop all packets for which the destination network is unknown.
**D.** It configures the router to send all packets to IP address 192.168.1.2.
**E.** It configures the router to send all packets to IP address 192.168.1.2 if the packets match no other entry in the routing table.

**Answer: E**
**Explanation:**

**QUESTION NO: 233**

Which of the following commands will configure a default route to any destination network not found in the routing table?

**A.** Router(config)# ip default-route 0.0.0.0 255.255.255.255 s0
**B.** Router(config)# ip route 0.0.0.0 255.255.255.255 s0
**C.** Router(config)# ip default-route 0.0.0.0 s0
**D.** Router(config)# ip route 0.0.0.0 0.0.0.0 s0
**E.** Router(config)# ip route any any e0

**Answer: D**
**Explanation:**

**QUESTION NO: 234**

Which Layer 4 protocol is used for a Telnet connection?

**A.** IP
**B.** TCP
**C.** UDP
**D.** ICMP
**E.** DNS

**Answer: B**
**Explanation:**

**QUESTION NO: 235**

Which two statements are correct regarding Cisco PAT implementation? (Choose two.)

**A.** primarily a security feature
**B.** implemented to conserve public IP addresses
**C.** requires at least two public addresses to operate
**D.** can only be used between a private network and the Internet
**E.** provides address connectivity between public and private addresses

**Answer: B,E**
**Explanation:**

**QUESTION NO: 236**

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:**

**QUESTION NO: 237**

Which of the following describe private IP addresses? (Choose two.)

**A.** addresses chosen by a company to communicate with the Internet
**B.** addresses that cannot be routed through the public Internet
**C.** addresses that can be routed through the public Internet
**D.** a scheme to conserve public addresses
**E.** addresses licensed to enterprises or ISPs by an Internet registry organization

**Answer: B,D**
**Explanation:**

**QUESTION NO: 238**

What are two effects on network performance of configuring a switch to store an entire frame before forwarding it to the destination? (Choose two.)

**A.** increase in switch operating speed
**B.** increased latency
**C.** filtering of all frame errors
**D.** filtering of collision fragments only
**E.** propagation of corrupted or damaged frames
**F.** decreased latency

**Answer: B,C**
**Explanation:**

**QUESTION NO: 239**

What are two characteristics of Telnet? (Choose two.)

**A.** It sends data in clear text format.
**B.** It is no longer supported on Cisco network devices.
**C.** It is more secure than SSH.
**D.** It requires an enterprise license in order to be implemented.
**E.** It requires that the destination device be configured to support Telnet connections.

**Answer: A,E**
**Explanation:**

**QUESTION NO: 240**

What is the purpose of flow control?

**A.** to ensure data is retransmitted if an acknowledgment 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:**

**QUESTION NO: 241**

Which of the following are types of flow control? (Choose three.)

**A.** buffering
**B.** cut-through
**C.** windowing
**D.** congestion avoidance
**E.** load balancing

**Answer: A,C,D**

**Explanation:**

**QUESTION NO: 242**

Which of the following is the signaling standard that is responsible for managing the connection and maintaining status between the router and the local Frame Relay switch?

**A.** BECN
**B.** CIR
**C.** DLCI
**D.** FECN
**E.** LMI
**F.** PVC

**Answer: E**

**Explanation:**

**QUESTION NO: 243**

Which of the following are characteristics of a Frame Relay point-to-point subinterface? (Choose two.)

**A.** requires use of Inverse ARP
**B.** resolves NBMA split horizon issues
**C.** requires the frame-relay map command

**D.** maps one IP subnet per DLCI
**E.** maps one IP subnet across multiple DLCIs

**Answer: B,D**

**Explanation:**

**QUESTION NO: 244**

What are two recommended ways of protecting network device configuration files from outside network security threats? (Choose two.)

**A.** Allow unrestricted access to the console or VTY ports.
**B.** Use a firewall to restrict access from the outside to the network devices.
**C.** Always use Telnet to access the device command line because its data is automatically encrypted.
**D.** Use SSH or another encrypted and authenticated transport to access device configurations.
**E.** Prevent the loss of passwords by disabling password encryption.

**Answer: B,D**

**Explanation:**

**QUESTION NO: 245**

What should be part of a comprehensive network security plan?

**A.** Allow users to develop their own approach to network security.
**B.** Physically secure network equipment from potential access by unauthorized individuals.
**C.** Encourage users to use personal information in their passwords to minimize the likelihood of passwords being forgotten.
**D.** Delay deployment of software patches and updates until their effect on end-user equipment is well known and widely reported.
**E.** Minimize network overhead by deactivating automatic antivirus client updates.

**Answer: B**

**Explanation:**

**QUESTION NO: 246**

Which two statements best describe the wireless security standard that is defined by WPA?

(Choose two.)

**A.** It specifies use of a static encryption key that must be changed frequently to enhance security.
**B.** It requires use of an open authentication method.
**C.** It specifies the use of dynamic encryption keys that change each time a client establishes a connection.
**D.** It requires that all access points and wireless devices use the same encryption key.
**E.** It includes authentication by PSK.

**Answer: C,E**
**Explanation:**

**QUESTION NO: 247**

What is one reason that WPA encryption is preferred over WEP?

**A.** A WPA key is longer and requires more special characters than the WEP key.
**B.** The access point and the client are manually configured with different WPA key values.
**C.** WPA key values remain the same until the client configuration is changed.
**D.** The values of WPA keys can change dynamically while the system is used.

**Answer: D**
**Explanation:**

**QUESTION NO: 248**

Which encryption type does WPA2 use?

**A.** AES-CCMP
**B.** PPK via IV
**C.** PSK
**D.** TKIP/MIC

**Answer: A**
**Explanation:**

**QUESTION NO: 249**

Which two practices help secure the configuration utilities on wireless access points from unauthorized access? (Choose two.)

**A.** assigning a private IP address to the AP
**B.** changing the default SSID value
**C.** configuring a new administrator password
**D.** changing the mixed mode setting to single mode
**E.** configuring traffic filtering

**Answer: B,C**
**Explanation:**

**QUESTION NO: 250**

Which command will set the default gateway to 192.168.12.1 on a Cisco switch?

**A.** Switch(config)# ip default-network 192.168.12.1
**B.** Switch(config)# ip route-default 192.168.12.1
**C.** Switch(config)# ip default-gateway 192.168.12.1
**D.** Switch(config)# ip route 192.168.12.1 0.0.0.0

**Answer: C**
**Explanation:**

**QUESTION NO: 251**

A network administrator is having difficulty in establishing a serial link between a Cisco router and a router from another vendor. Both routers are configured for HDLC encapsulation. Which statements are true regarding this configuration? (Choose two.)

**A.** The Cisco HDLC frame uses a proprietary "Type" field that may not be compatible with equipment of other vendors.
**B.** HDLC requires a clock rate to be configured on the routers at both ends of the serial link.
**C.** PPP encapsulation is recommended for serial links between equipment from multiple vendors.
**D.** Usernames must be configured at both ends of the HDLC serial link
**E.** The HDLC vendor type must be enabled on the Cisco router.
**F.** There is a mismatch in the HDLC authentication password configurations.

**Answer: A,C**
**Explanation:**

**QUESTION NO: 252**

Which of the following protocols uses both TCP and UDP ports?

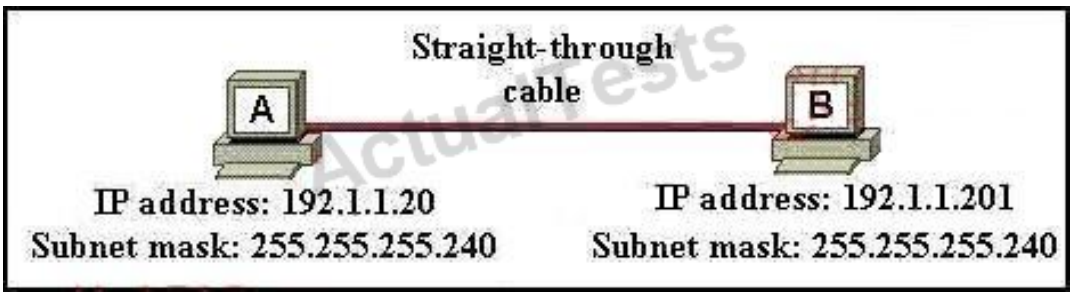
**A.** FTP
**B.** SMTP
**C.** Telnet
**D.** DNS

**Answer: D**

**Explanation:**

**QUESTION NO: 253**

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.

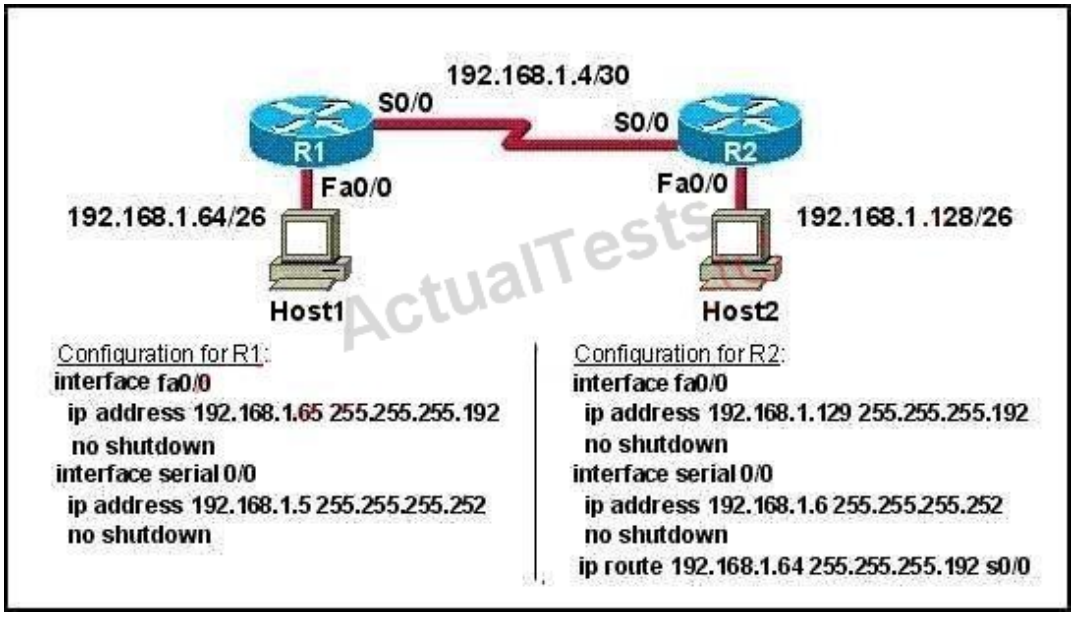
**Answer: A,F**

**Explanation:**

**QUESTION NO: 254**

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 Host2 fails, but the technician is able to ping the S0/0 interface of R2 from Host1. 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:**

**QUESTION NO: 255**

Refer to the exhibit. What is the effect of the configuration that is shown?

```
line vty 0 4
 password 7 030752180500
 login
 transport input ssh
```

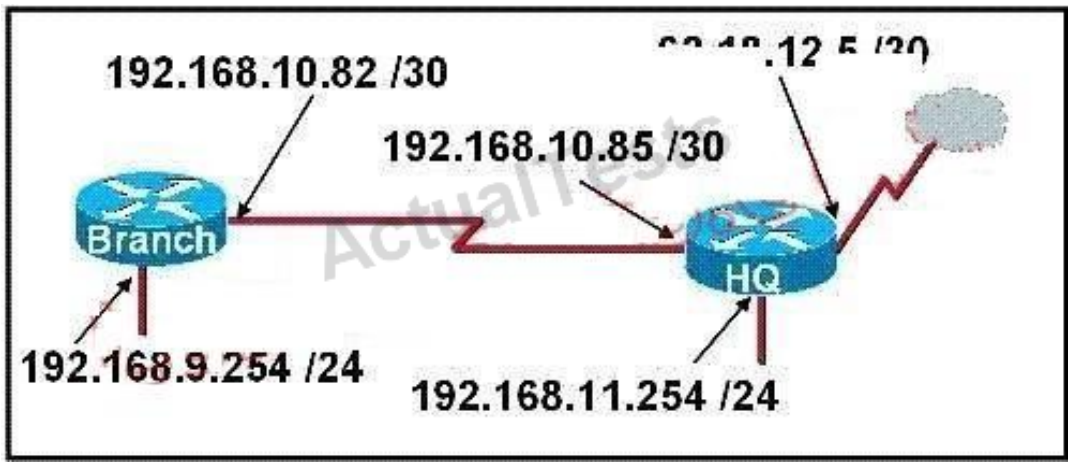
**A.** It configures SSH globally for all logins.
**B.** It tells the router or switch to try to establish an SSh connection first and if that fails to use Telnet.
**C.** It configures the virtual terminal lines with the password 030752180500.
**D.** It configures a Cisco network device to use the SSH protocol on incoming communications via the virtual terminal ports.
**E.** It allows seven failed login attempts before the VTY lines are temporarily shutdown.

**Answer: D**

**Explanation:**

**QUESTION NO: 256**

After the router interfaces shown in the diagram have been configured, it is discovered that hosts in the Branch LAN cannot access the Internet. Further testing reveals additional connectivity issues. What will fix this problem?




**A.** Change the address of the Branch router LAN interface.
**B.** Change the address of the Branch router WAN interface.
**C.** Change the subnet mask of the HQ router LAN interface.
**D.** Change the address of the HQ router LAN interface.
**E.** Change the address of the HQ router interface to the Internet.

**F.** Change the subnet mask of the HQ router interface to the Internet.

**Answer: B**

**Explanation:**

**QUESTION NO: 257**

Refer to the exhibit. Serial0/0 does not respond to a ping request from a host on the FastEthernet0/0 LAN. How can this problem be corrected?

BHM# **show ip interface brief**

| Interface | IP-Address | OK? | Method | Status | Protocol |
|---|---|---|---|---|---|
| FastEthernet0/0 | 192.168.16.1 | YES | NVRAM | up | up |
| Serial0/0 | 192.168.15.2 | YES | NVRAM | administratively down | down |
| FastEthernet0/1 | 192.168.17.1 | YES | NVRAM | up | up |
| Serial0/1 | unassigned | YES | NVRAM | administratively down | down |

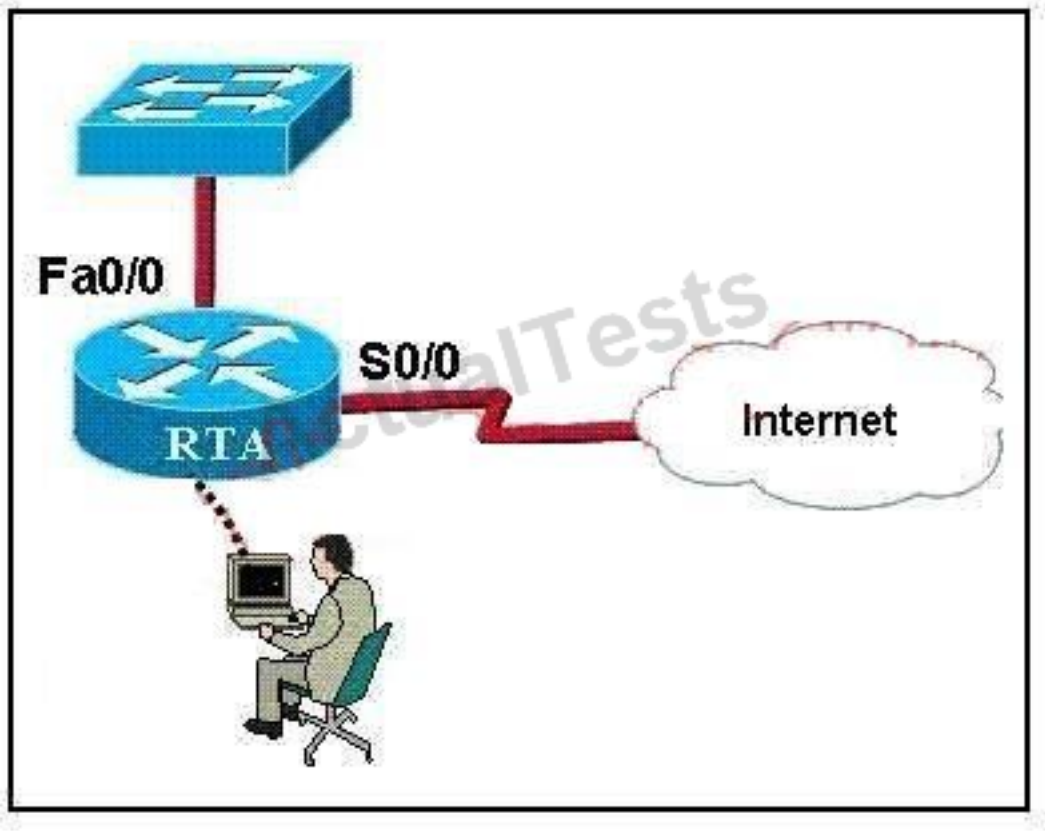
**A.** Enable the Serial 0/0 interface.
**B.** Correct the IP address for Serial 0/0.
**C.** Correct the IP address for FastEthernet 0/0.
**D.** Change the encapsulation type on Serial 0/0.
**E.** Enable autoconfiguration on the Serial 0/0 interface.

**Answer: A**

**Explanation:**

**QUESTION NO: 258**

Refer to the exhibit. The network administrator is configuring RTA to connect to a non-Cisco network. Which two commands would be applied to the S0/0 WAN interface, but not to the Fa0/0 LAN interface? (Choose two.)



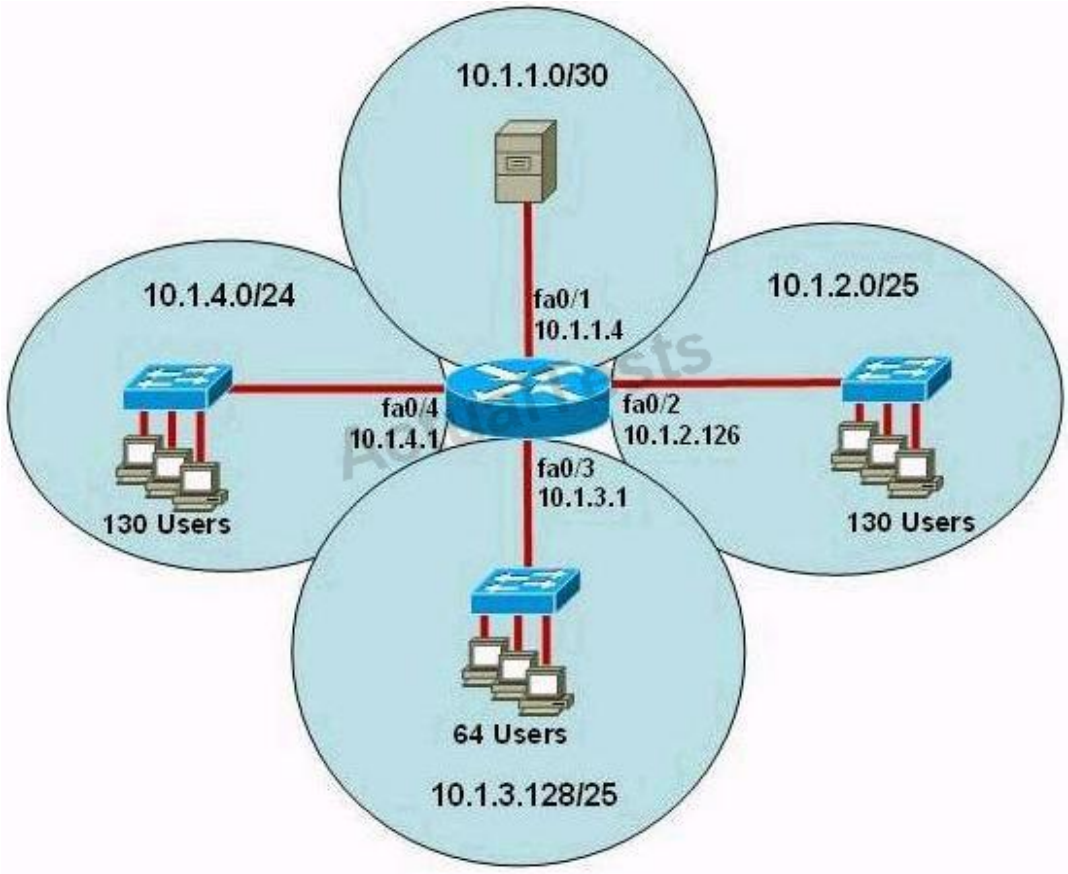

**A.** speed
**B.** no shutdown
**C.** ip address
**D.** authentication pap
**E.** encapsulation ppp

**Answer: D,E**

**Explanation:**

**QUESTION NO: 259**

Refer to the exhibit. The goal of this network design is to provide the most efficient use of IP address space in a network expansion. Each circle defines a network segment and the number of users required on that segment. An IP subnetwork number and default gateway address are shown for each segment. What are three problems with the network design as shown? (Choose three.)



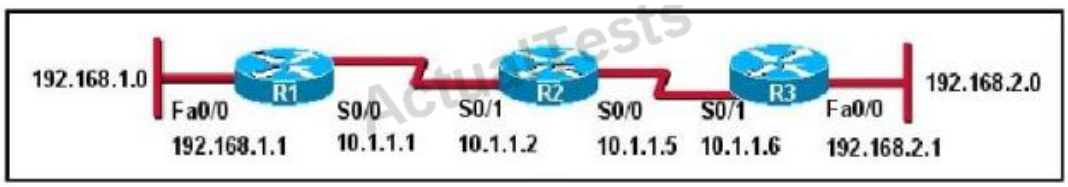

**A.** Interface fa0/3 has an IP address that overlaps with network 10.1.1.0/30.
**B.** Interface fa0/1 has an invalid IP address for the subnet on which it resides.
**C.** Interface fa0/2 has an invalid IP address for the subnet on which it resides.
**D.** Network 10.1.2.0/25 requires more user address space.
**E.** Network 10.1.3.128/25 requires more user address space.
**F.** The IP subnet 10.1.1.0/30 is invalid for a segment with a single server.

**Answer: A,B,D**

**Explanation:**

**QUESTION NO: 260**

Refer to the exhibit. The network shown in the exhibit is running the RIPv2 routing protocol. The network has converged, and the routers in this network are functioning properly. The FastEthernet0/0 interface on R1 goes down. In which two ways will the routers in this network respond to this change? (Choose two.)

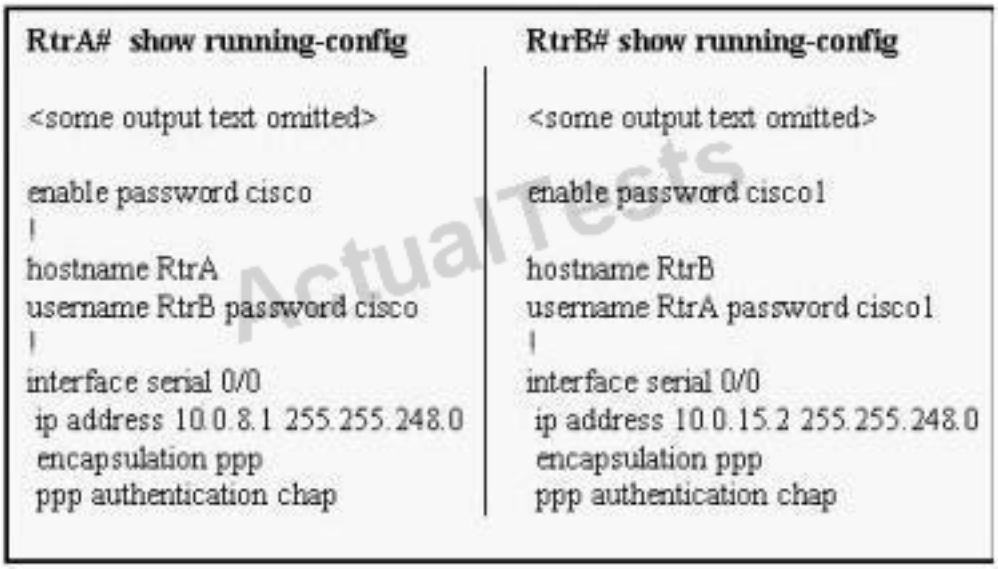


**A.** All routers will reference their topology database to determine if any backup routes to the 192.168.1.0 network are known.
**B.** Routers R2 and R3 mark the route as inaccessible and will not accept any further routing updates from R1 until their hold-down timers expire.
**C.** Because of the split-horizon rule, router R2 will be prevented from sending erroneous information to R1 about connectivity to the 192.168.1.0 network.
**D.** When router R2 learns from R1 that the link to the 192.168.1.0 network has been lost, R2 will respond by sending a route back to R1 with an infinite metric to the 192.168.1.0 network.
**E.** R1 will send LSAs to R2 and R3 informing them of this change, and then all routers will send periodic updates at an increased rate until the network again converges.

**Answer: C,D**
**Explanation:**

**QUESTION NO: 261**

The administrator is unable to establish connectivity between two Cisco routers. Upon reviewing the command output of both routers, what is the most likely cause of the problem?



| RtrA# show running-config | RtrB# show running-config |
|---|---|
| <some output text omitted> | <some output text omitted> |
| enable password cisco | enable password cisco1 |
| ! | |
| hostname RtrA | hostname RtrB |
| username RtrB password cisco | username RtrA password cisco1 |
| ! | ! |
| interface serial 0/0 | interface serial 0/0 |
| ip address 10.0.8.1 255.255.248.0 | ip address 10.0.15.2 255.255.248.0 |
| encapsulation ppp | encapsulation ppp |
| ppp authentication chap | ppp authentication chap |

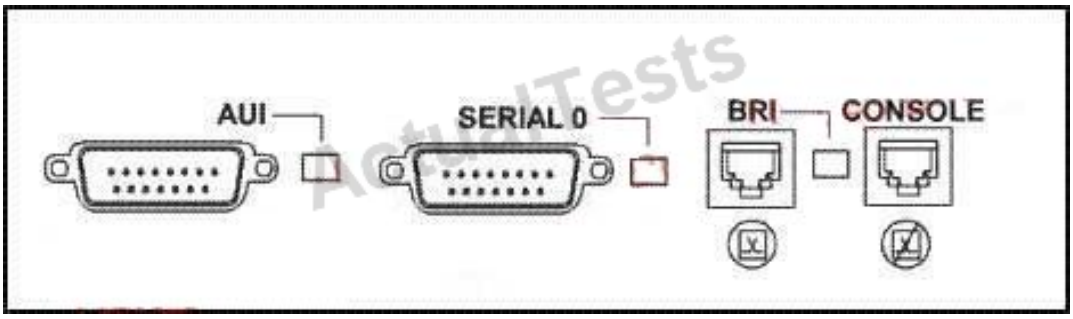


**A.** Authentication needs to be changed to PAP for both routers.
**B.** Serial ip addresses of routers are not on the same subnet.
**C.** Username/password is incorrectly configured.
**D.** Router names are incorrectly configured.

**Answer: C**
**Explanation:**

**QUESTION NO: 262**

This graphic shows some common router ports. Which port can be used for a WAN T1 connection?



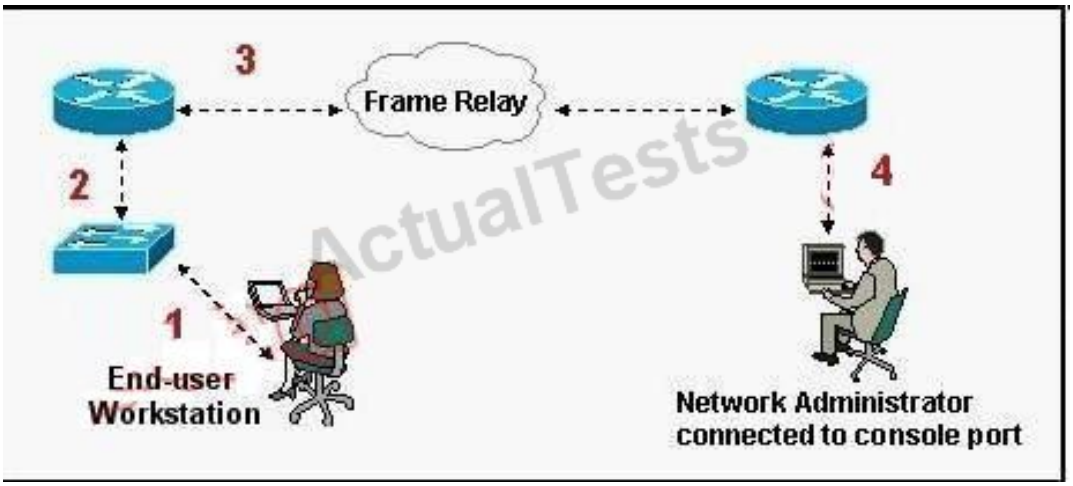

**A.** AUI
**B.** BRI
**C.** Console
**D.** Serial 0

**Answer: D**

**Explanation:**

**QUESTION NO: 263**

Refer to the exhibit. What kind of cable should be used to make each connection that is identified by the numbers shown?



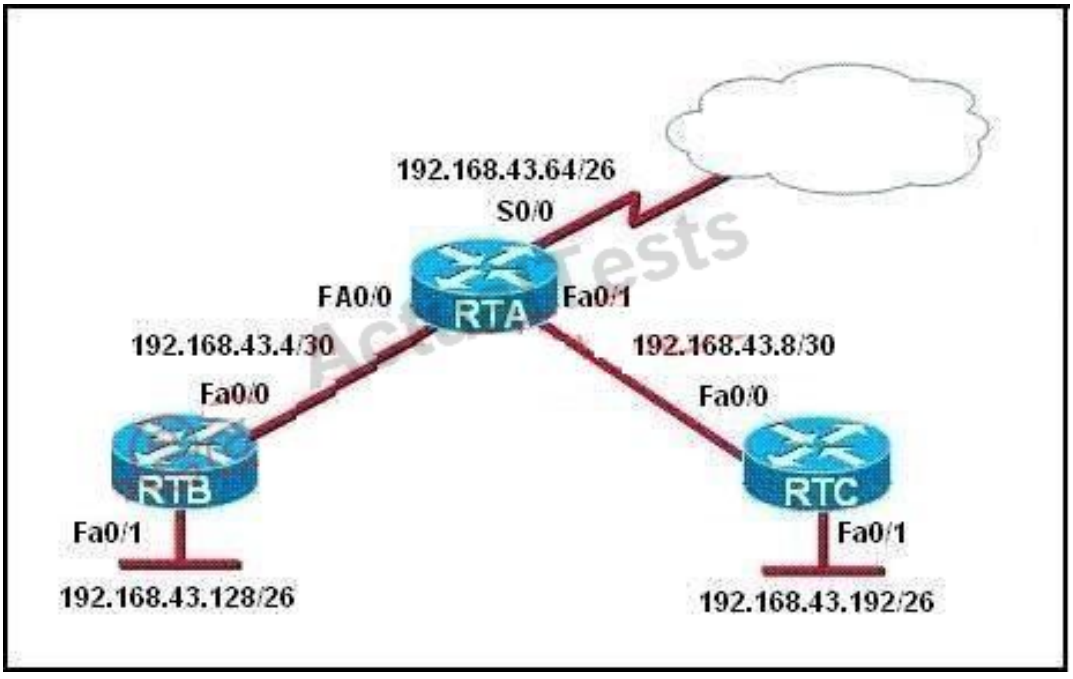

**A.** 1 - Ethernet crossover cable
2 - Ethernet straight-through cable
3 - fiber optic cable

4 - rollover cable
**B.** 1 - Ethernet straight-through cable
2 - Ethernet straight-through cable
3 - serial cable
4 - rollover cable
**C.** 1 - Ethernet rollover cable
2 - Ethernet crossover cable
3 - serial cable
4 - null modem cable
**D.** 1 - Ethernet straight-through cable
2 - Ethernet crossover cable
3 - serial cable
4 - rollover cable
**E.** 1 - Ethernet straight-through cable
2 - Ethernet crossover cable
3 - serial cable
4 - Ethernet straight-through cable

**Answer: B**
**Explanation:**

**QUESTION NO: 264**

Refer to the exhibit.




For security reasons, information about RTA, including platform and IP addresses, should not be accessible from the Internet. This information should, however, be accessible to devices on the

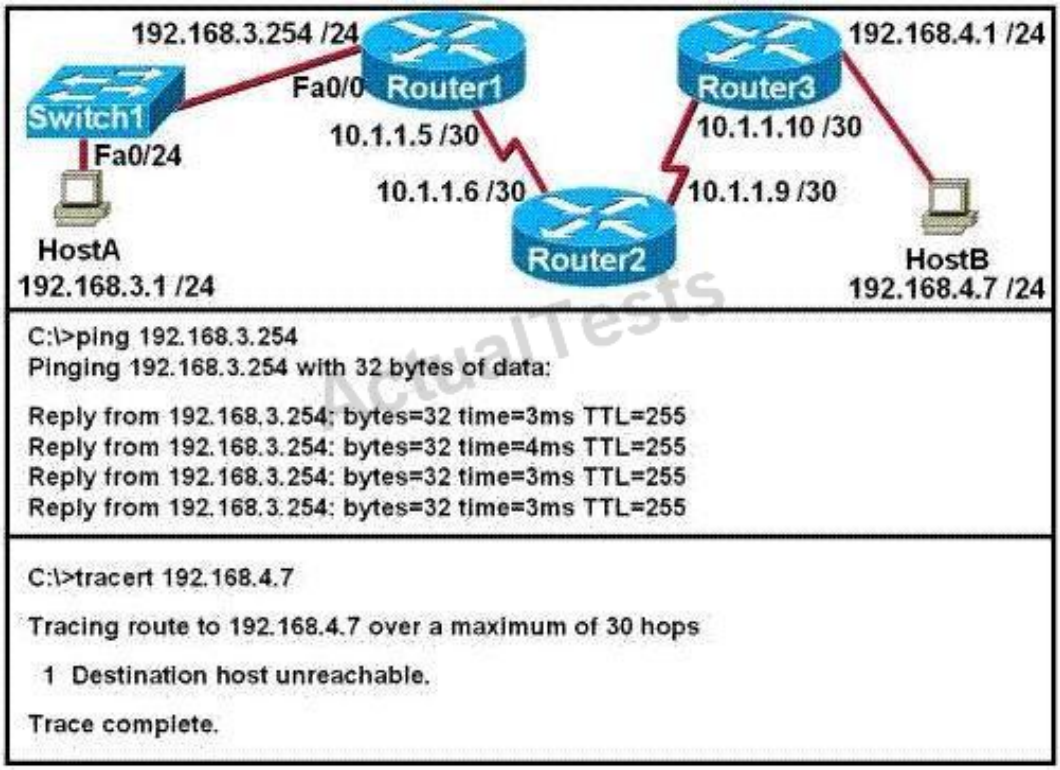
internal networks of RTA. Which command or series of commands will accomplish these objectives?

**A.** RTA(config)#no cdp run
**B.** RTA(config)#no cdp enable
**C.** RTA(config)#interface s0/0
RTA(config-if)#no cdp run
**D.** RTA(config)#interface s0/0
RTA(config-if)#no cdp enable

**Answer: D**
**Explanation:**

**QUESTION NO: 265**

Refer to the exhibit. A technician is testing connection problems in the internetwork. What is the problem indicated by the output from HostA?




**A.** The routing on Router2 is not functioning properly.
**B.** An access list is applied to an interface of Router3.
**C.** The Fa0/24 interface of Switch1 is down.
**D.** The gateway address of HostA is incorrect or not configured.

**Answer: D**

**Explanation:**

**QUESTION NO: 266**

The Hub and Spoke routers are directly connected through their serial interfaces for purposes of testing. Based on the output shown in the exhibit, what must be done to make the serial line operational?

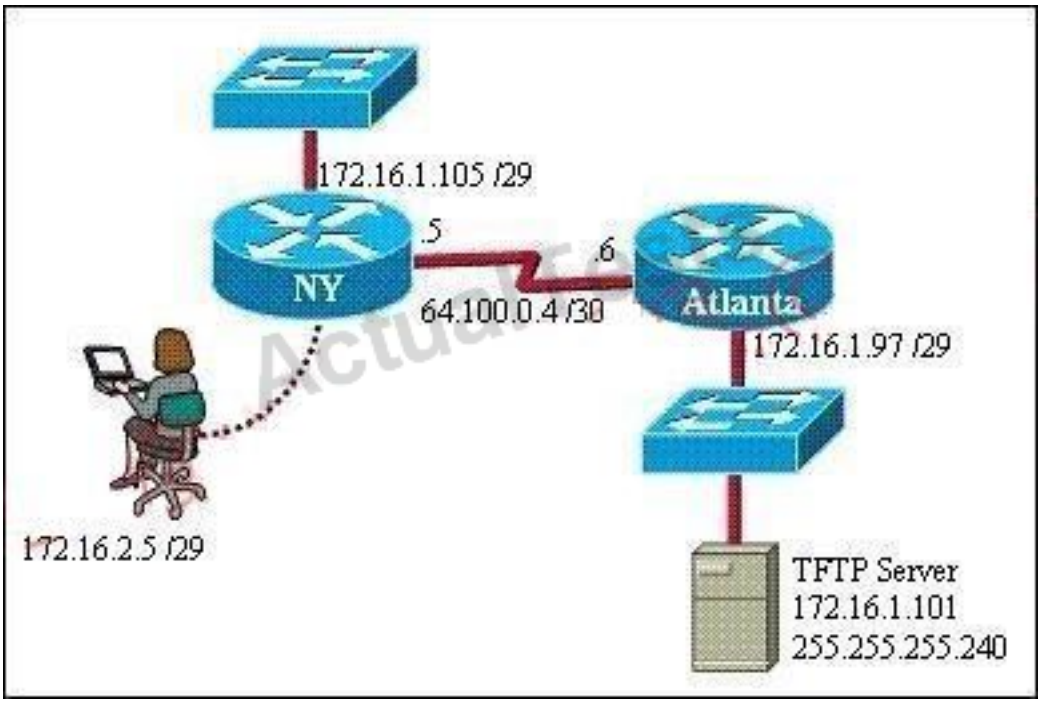

**A.** Start the clock on the Hub router.
**B.** Change the IP address on the Spoke router.
**C.** Configure the serial 0/0 interface on the Spoke router with a clockrate.
**D.** Replace the broken cable between the two devices.
**E.** Use the no shutdown command on the Hub router.

**Answer: C**

**Explanation:**

**QUESTION NO: 267**

Refer to the exhibit. A network administrator has recently installed a new router in the NY office and has established a console connection with the new router. The administrator is unable to backup the configuration file and IOS to a TFTP server that is located in the Atlanta office. What is the cause of this problem?



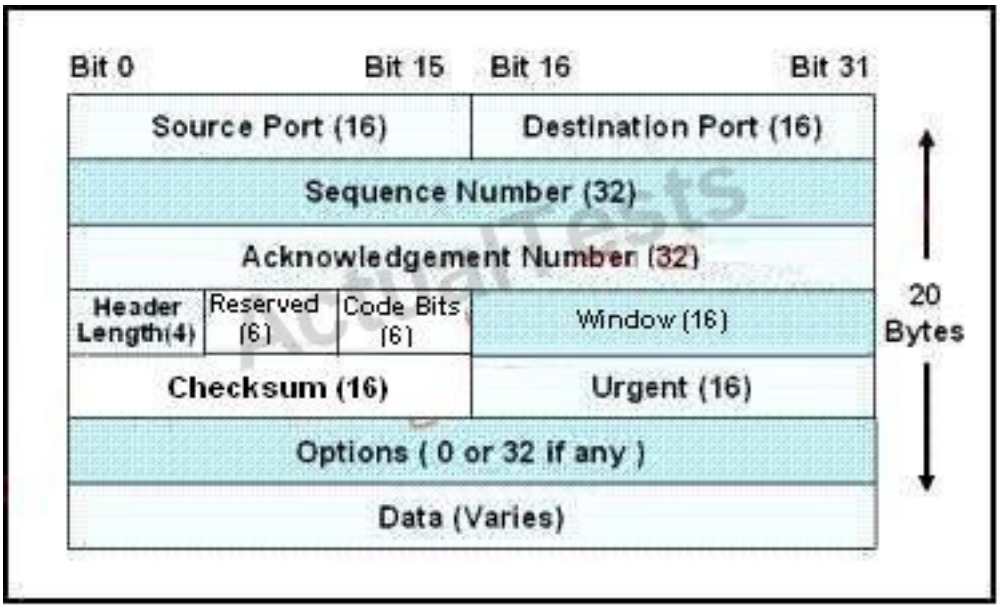

**A.** The NY router has an incorrect subnet mask.
**B.** The TFTP server has an incorrect IP address.
**C.** The TFTP server has an incorrect subnet mask.
**D.** The network administrator computer has an incorrect IP address.
**E.** The Ethernet port on the NY router has an incorrect IP address.
**F.** The Ethernet port on the Atlanta router has an incorrect IP address.

**Answer: C**

**Explanation:**

**QUESTION NO: 268**

What data structure is described in the graphic?



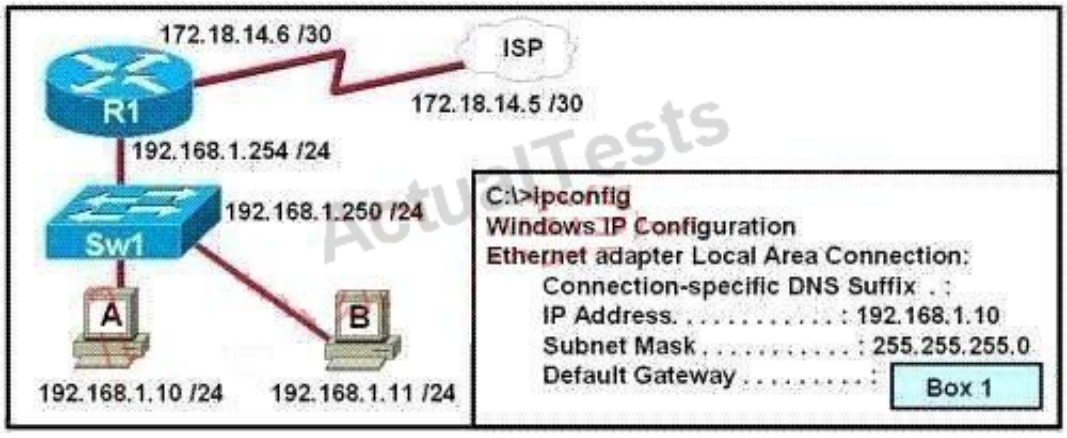

**A.** FDDI frame
**B.** Token Ring frame
**C.** Ethernet frame
**D.** IP datagram
**E.** TCP segment
**F.** UDP datagram

**Answer: E**

**Explanation:**

**QUESTION NO: 269**

Refer to the exhibit. What value should be displayed in Box 1 of the ipconfig output of host A?




**A.** 172.18.14.5

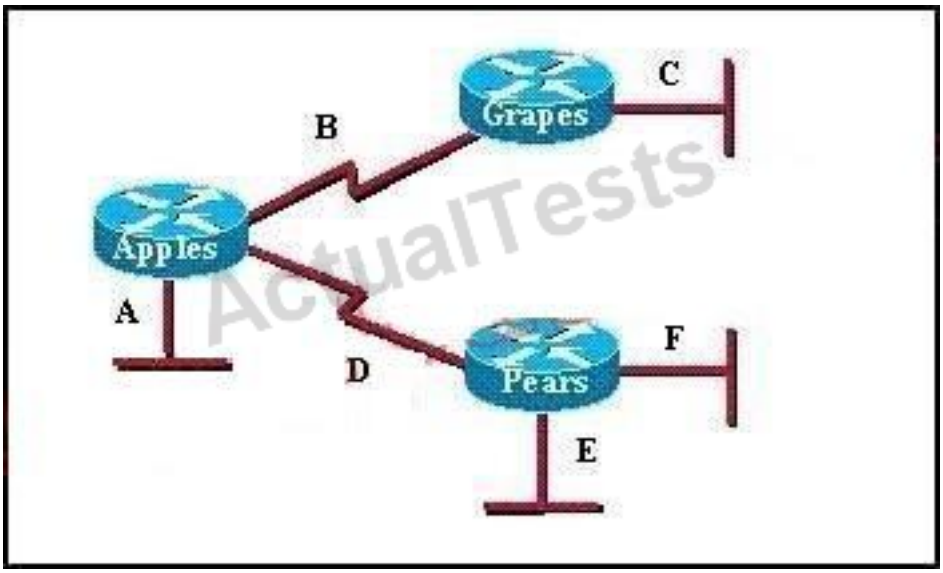
**B.** 172.18.14.6
**C.** 192.168.1.10
**D.** 192.168.1.11
**E.** 192.168.1.250
**F.** 192.168.1.254

**Answer: F**
**Explanation:**

**QUESTION NO: 270**

The RIP network shown in the graphic has been fully operational for two days. Each routing table is complete.

Which networks will be included in the next routing update from the Apples router to the Pears router?

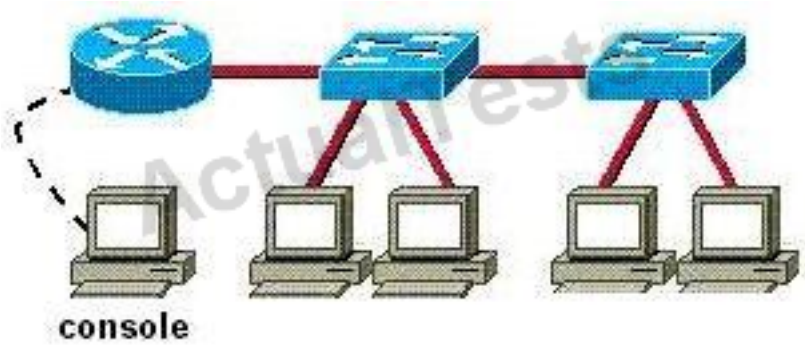



**A.** A, B, C, D, E, F
**B.** A, C
**C.** A, B, C, D
**D.** B, D
**E.** D, E, F
**F.** A, B, C

**Answer: F**
**Explanation:**

**QUESTION NO: 271**

Which types of cables are required to interconnect the devices shown in the graphic? (Choose three.)



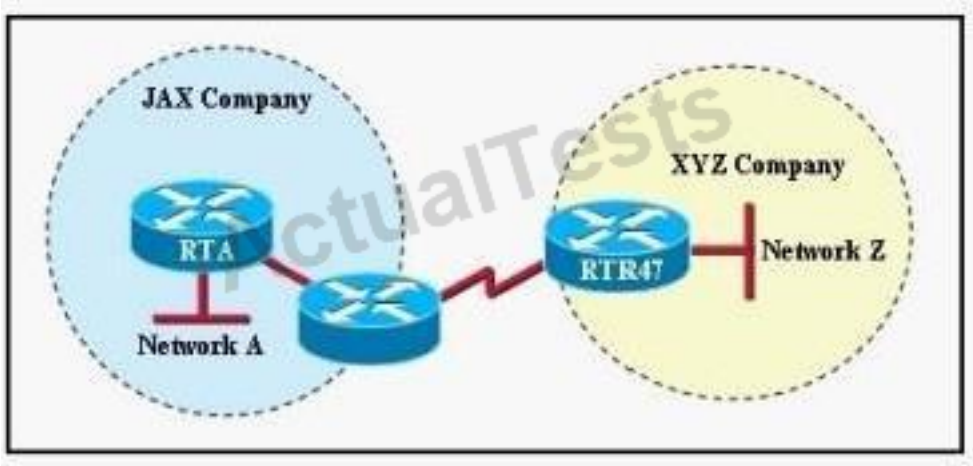

**A.** V.35 cable
**B.** crossover cable
**C.** USB cable
**D.** RJ-11 cable
**E.** rollover cable
**F.** straight-through cable

**Answer: B,E,F**

**Explanation:**

**QUESTION NO: 272**

Refer to the exhibit. A person is trying to send a file from a host on Network A of the JAX Company to a server on Network Z of the XYZ Company. The file transfer fails. The host on Network A can communicate with other hosts on Network A. Which command, issued from router RTA, would be the most useful for troubleshooting this problem?

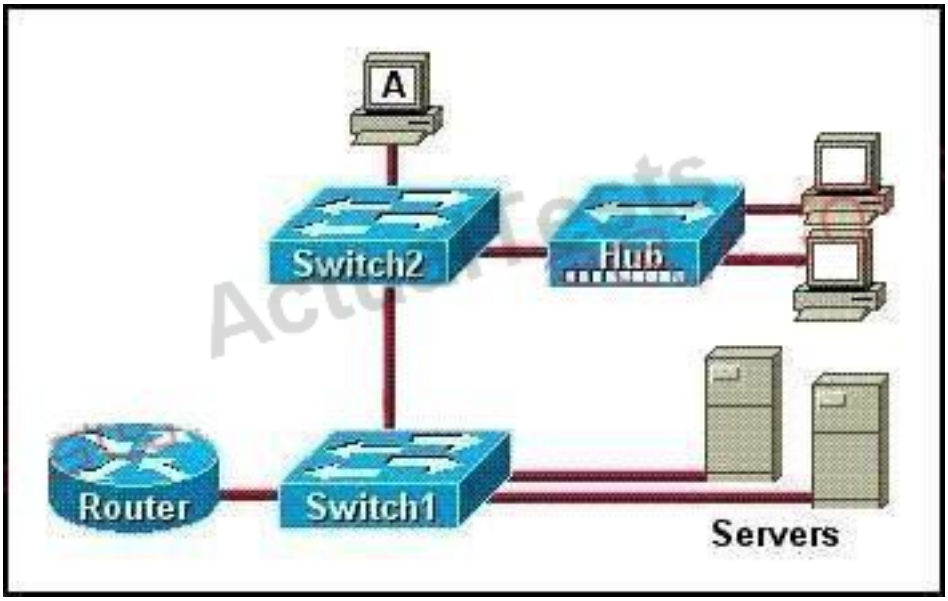


**A.** show flash:
**B.** show history
**C.** show version
**D.** show interfaces
**E.** show controllers serial

**Answer: D**
**Explanation:**

**QUESTION NO: 273**

Refer to the exhibit. Host A has been added to the network. Which type of cable should be used between Switch2 and host A?

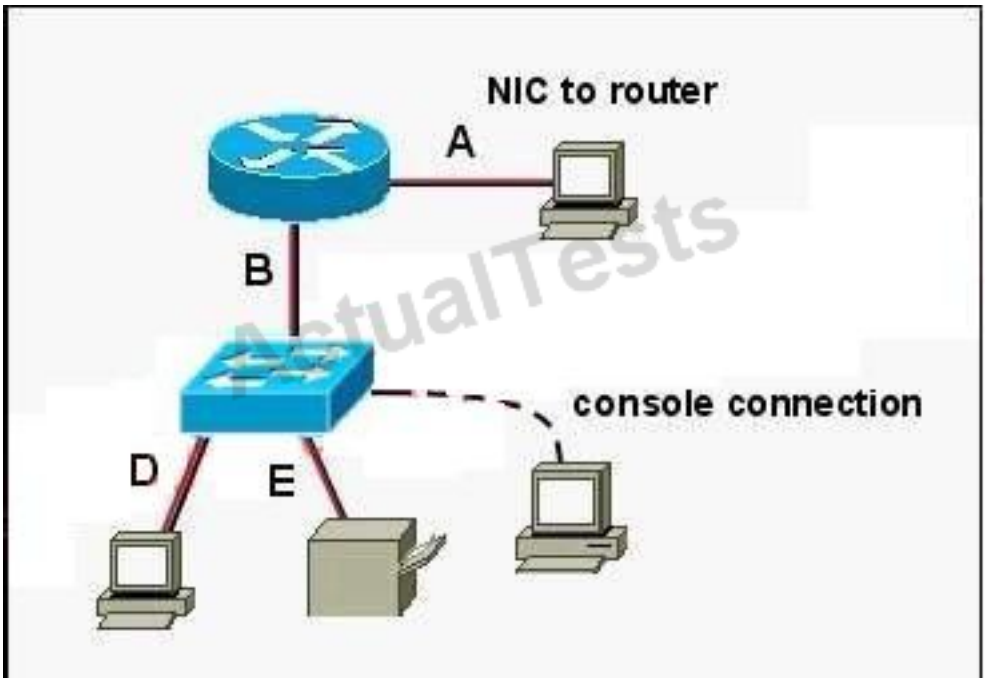



**A.** console cable
**B.** rollover cable
**C.** straight-through cable
**D.** crossover cable

**Answer: C**
**Explanation:**

**QUESTION NO: 274**

Refer to the exhibit. What types of cables are recommended to make the connections that are shown?



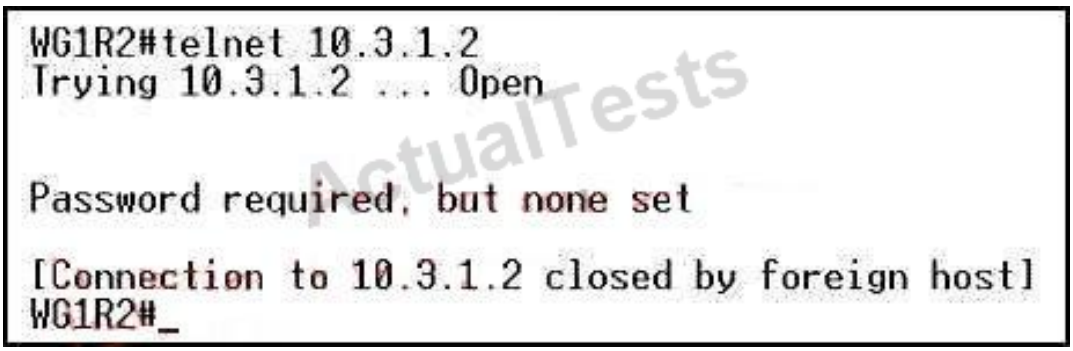

**A.** A-straight-through
B-straight-through
C-rollover
D-straight-through E-straight-through
**B.** A-rollover
B-straight-through
C-straight-through
D-rollover
E-crossover
**C.** A-crossover
B-straight-through
C-rollover
D-straight-through E-straight-through
**D.** A-crossover
B-straight-through
C-crossover
D-straight-through
E-crossover
**E.** A-straight-through
B-crossover
C-rollover
D-straight-through E-straight-through

**Answer: C**

**Explanation:**

**QUESTION NO: 275**

Refer to the exhibit. Why was this message received?



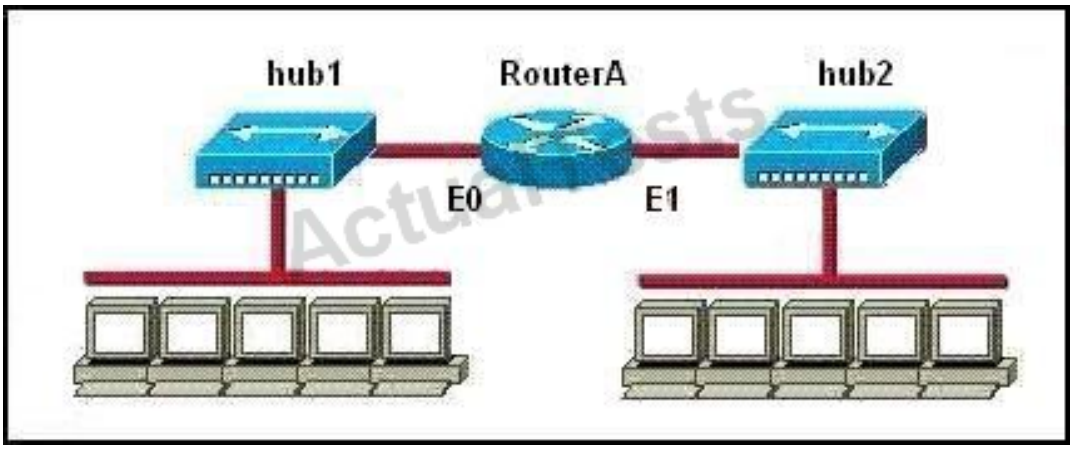

**A.** No VTY password has been set.
**B.** No enable password has been set.
**C.** No console password has been set.
**D.** No enable secret password has been set.
**E.** The login command has not been set on CON 0.
**F.** The login command has not been set on the VTY ports.

**Answer: A**

**Explanation:**

**QUESTION NO: 276**

Refer to the graphic. How many collision domains are shown?



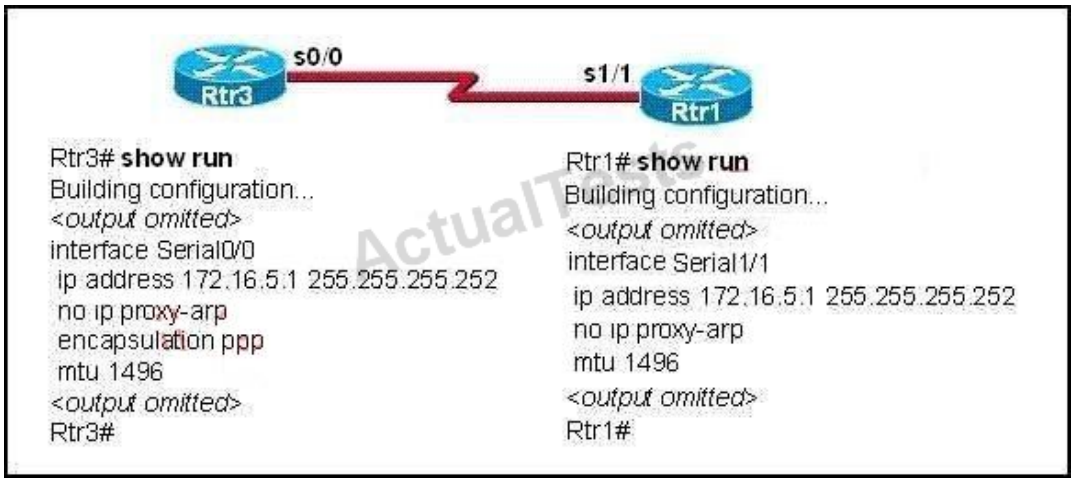

**A.** one
**B.** two
**C.** three

**D.** four
**E.** six
**F.** fourteen

**Answer: B**
**Explanation:**

**QUESTION NO: 277**

Refer to the exhibit. A network administrator is troubleshooting a connectivity problem on the serial interfaces.



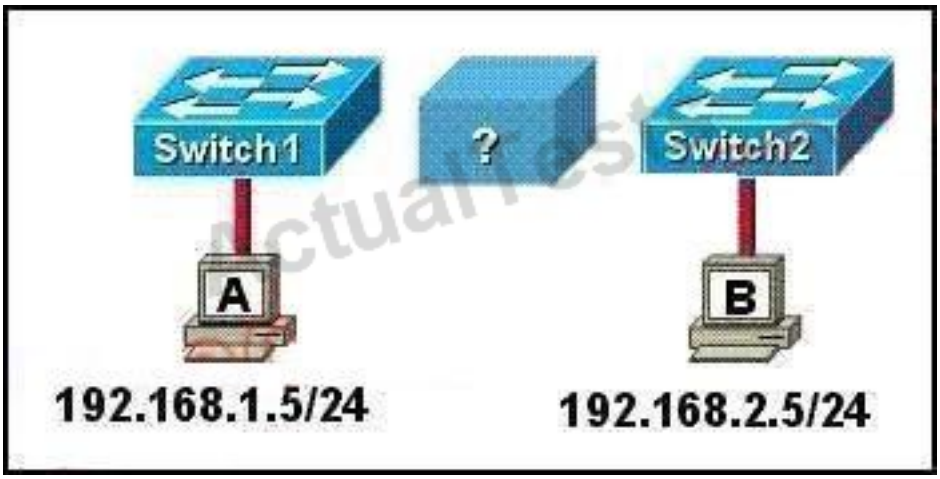

The output from the show interfaces command on both routers shows that the serial interface is up, line protocol is down. Given the partial output for the show running-config in the exhibit, what is the most likely cause of this problem?

**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:**

**QUESTION NO: 278**

Refer to the exhibit. What is needed to allow host A to ping host B?

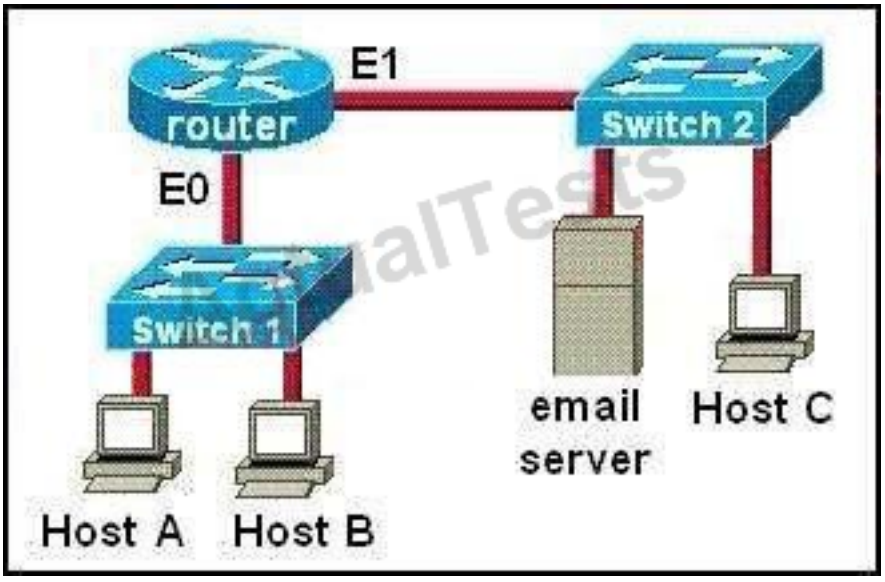



**A.** a straight-through cable connecting the switches
**B.** a crossover cable connecting the switches
**C.** a router connected to the switches with straight-through cables
**D.** a CSU/DSU connected to the switches with straight-through cables
**E.** a backbone switch connecting the switches with either fiber optic or straight-through cables

**Answer: C**
**Explanation:**

**QUESTION NO: 279**

Host A needs to communicate with the email server shown in the graphic. What address will be placed in the destination address field of the frame when it leaves Host A?




**A.** the MAC address of Host A

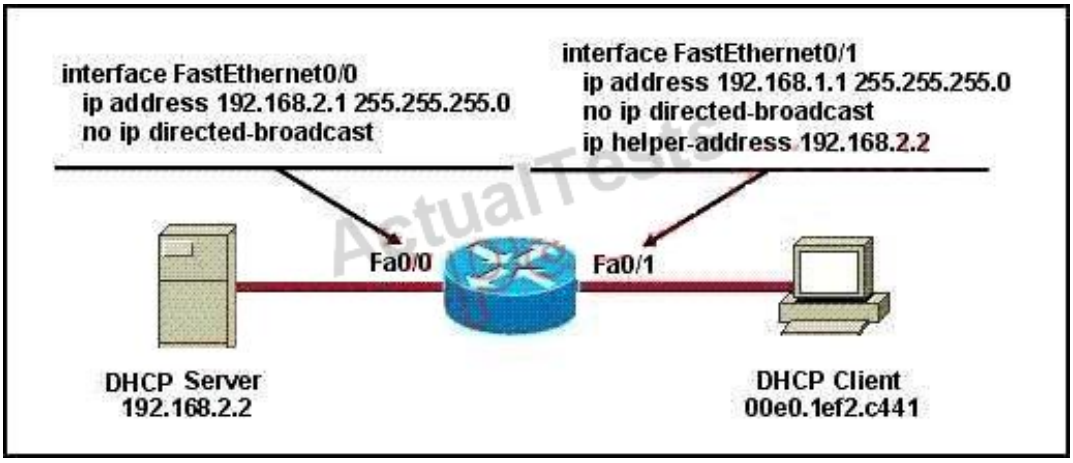
**B.** the MAC address of Switch 1
**C.** the MAC address of E0 of the router
**D.** the MAC address of E1 of the router
**E.** the MAC address of Switch 2
**F.** the MAC address of the email server

**Answer: C**

**Explanation:**

**QUESTION NO: 280**

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?



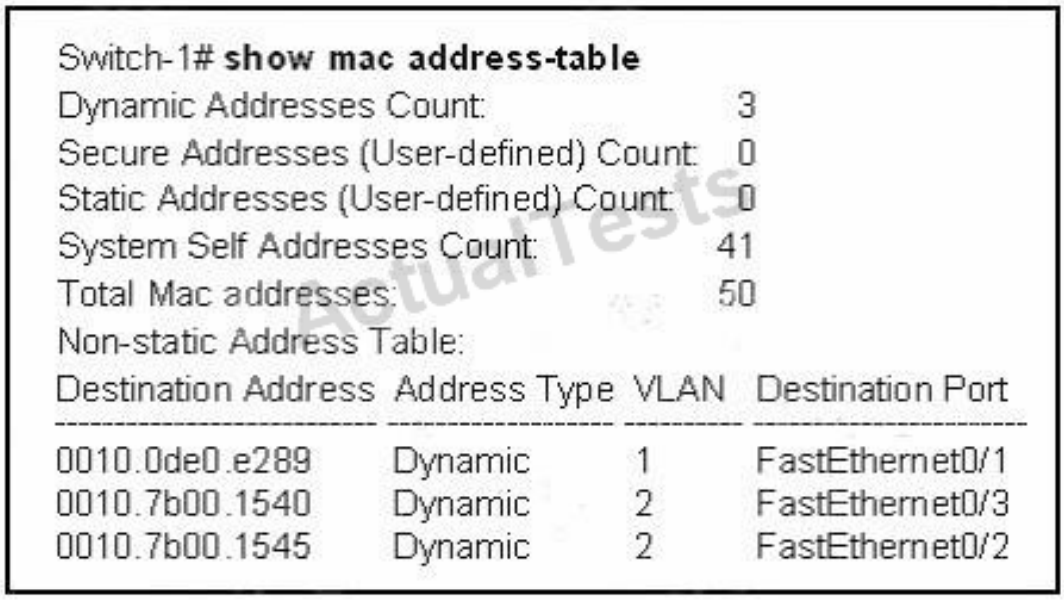

**A.** Verify that the DNS server address is correct in the DHCP pool.
**B.** Ping the default gateway to populate the ARP cache.
**C.** Use the tracert command on the DHCP client to first determine where the problem is located.
**D.** Clear all DHCP leases on the router to prevent address conflicts.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

**Answer: E**

**Explanation:**

**QUESTION NO: 281**

Refer to the exhibit. Switch-1 needs to send data to a host with a MAC address of 00b0.d056.efa4. What will Switch-1 do with this data?



```
Switch-1# show mac address-table
Dynamic Addresses Count:                   3
Secure Addresses (User-defined) Count:     0
Static Addresses (User-defined) Count:     0
System Self Addresses Count:               41
Total Mac addresses:                       50
Non-static Address Table:
Destination Address  Address Type  VLAN  Destination Port
-------------------  ------------  ----  --------------------
0010.0de0.e289       Dynamic       1     FastEthernet0/1
0010.7b00.1540       Dynamic       2     FastEthernet0/3
0010.7b00.1545       Dynamic       2     FastEthernet0/2
```

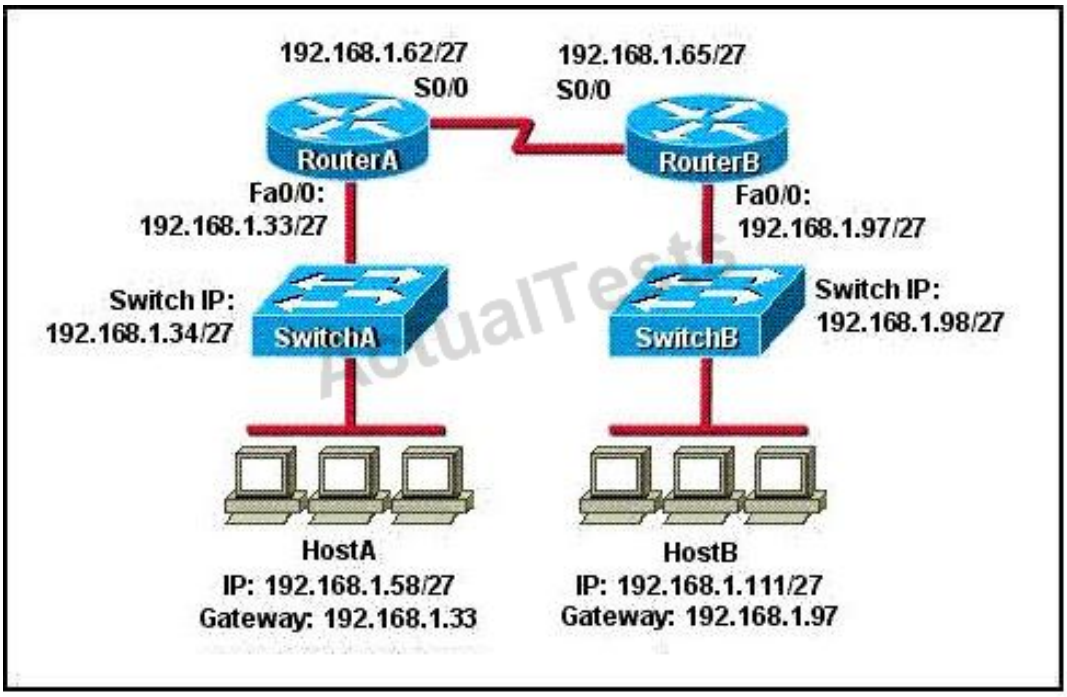
**A.** Switch-1 will drop the data because it does not have an entry for that MAC address.
**B.** Switch-1 will flood the data out all of its ports except the port from which the data originated.
**C.** Switch-1 will send an ARP request out all its ports except the port from which the data originated.
**D.** Switch-1 will forward the data to its default gateway.

**Answer: B**

**Explanation:**

**QUESTION NO: 282**

Refer to the exhibit. HostA cannot ping HostB. Assuming routing is properly configured, what could be the cause of this problem?



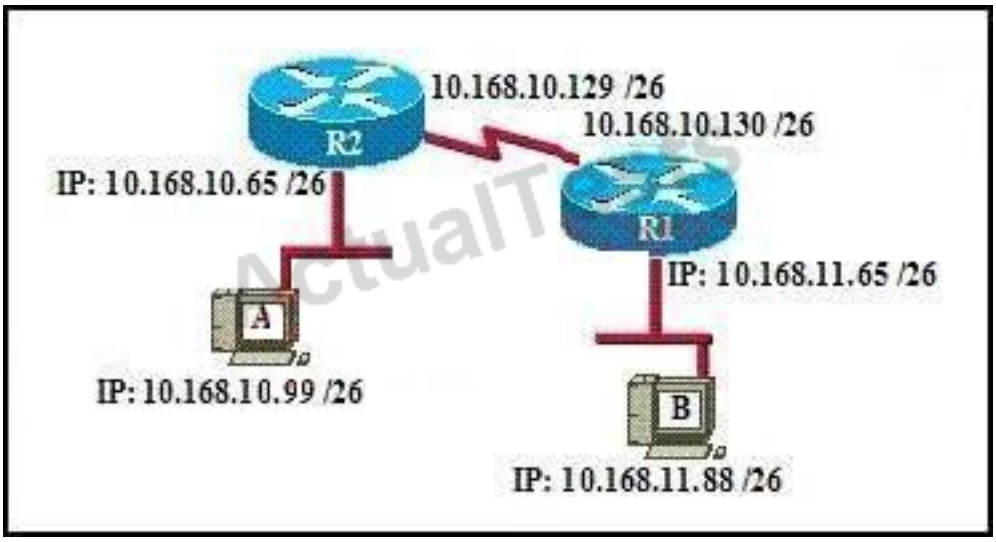

**A.** HostA is not on the same subnet as its default gateway.
**B.** The address of SwitchA is a subnet address.
**C.** The Fa0/0 interface on RouterA is on a subnet that can't be used.
**D.** The serial interfaces of the routers are not on the same subnet.
**E.** The Fa0/0 interface on RouterB is using a broadcast address.

**Answer: D**

**Explanation:**

**QUESTION NO: 283**

Refer to the exhibit. Host A has established a communication session with host B for the first time. What enabled R1 to forward this traffic in the appropriate direction to reach the nework to which host B is attached?




**A.** DNS
**B.** DHCP
**C.** TCP/IP
**D.** a Layer 4 protocol
**E.** a routing protocol
**F.** a default gateway

**Answer: E**

**Explanation:**

**QUESTION NO: 284**

Refer to the exhibit. Which statement describes the operational state of the FastEthernet 0/0 interface?

```
Internal-router# show Interfaces FastEthernet 0/0
FastEthernet0/0 is up, line protocol is up
Hardware is PQUICC_FEC, address is 000d.bd64.98f1 (bia 000d.bd64.98f1)
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec, reliability 253/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set  Keepalive set (10 sec)
  Half-duplex, 100Mb/s, 100BaseTX/FX  Internet address is 192.168.88.254/25
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/40, 1105 drops; input queue 27/75, 10274 drops
  5 minute input rate 1530000 bits/sec, 201 packets/sec
  5 minute output rate 673000 bits/sec, 173 packets/sec
    404737363 packets input, 2387517953 bytes, 11 no buffer
    Received 12083011 broadcasts, 0 runts, 0 giants
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 input packets with dribble condition detected
    401877661 packets output, 2769220540 bytes, 0 underruns
    0 output errors, 5768297 collisions, 0 interface resets
    0 babbles, 0 late collision, 2174742 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
```

**A.** The interface is generating protocol errors.
**B.** The interface has failed because of a media error.
**C.** The interface is operational and currently handling traffic.
**D.** The interface requires a no shutdown command to be issued.

**Answer: C**

**Explanation:**

**QUESTION NO: 285**

Two routers named Atlanta and Brevard are connected by their serial interfaces as shown in the exhibit, but there is no data connectivity between them. The Atlanta router is known to have a correct configuration. Given the partial configurations shown in the exhibit, what is the problem on the Brevard router that is causing the lack of connectivity?


```
Atlanta# show interfaces s0
Serial0 is up, line protocol is up
  Hardware is HD64570
  Internet address is 192.168.10.1/24
  MTU 1500 bytes, BW 1544 Kbit,
    reliability 255/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
```

```
Brevard# show interfaces s1
Serial1 is up, line protocol is up
  Hardware is HD64570
  Internet address is 192.168.11.2/24
  MTU 1500 bytes, BW 56000 Kbit,
    reliability 255/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
```

**A.** A loopback is not set.
**B.** The IP address is incorrect.
**C.** The subnet mask is incorrect.
**D.** The serial line encapsulations are incompatible.
**E.** The maximum transmission unit (MTU) size is too large.
**F.** The bandwidth setting is incompatible with the connected interface.

**Answer: B**

**Explanation:**

**QUESTION NO: 286**

The router console screen is rapidly displaying line after line of output similar to what is shown in the exhibit. The help desk has called to say that users are reporting a slowdown in the network. What will solve this problem while not interrupting network operation?

```
00:34:43: RIP: recevied v1 update from 192.168.11.2 on Serial0/0
00:34:43:      192.168.12.0 in 1 hops
00:34:43: RIP: update contains 1 routers
00:34:50: Serial0/0: HDLC myseq 179, mineseen 179*, yourseen 180, line up
00:35:00: Serial0/0: HDLC myseq 180, mineseen 180*, yourseen 181, line up
00:35:00: IP: s= 192.168.11.1 (local), d= 192.168.11.2 (Serial0/0), len 40, rcvd 3
00:35:00: IP: s= 192.168.11.2 (Serial0/0), d= 192.168.11.1 (Serial0/0), len 40, rcvd 3
00:35:00: tcp2: I ESTAB 192.168.11.2: 11] 03 192.168.11.1: 23 seq 4063973782
      ACK 4061200175 WIN 4049
```

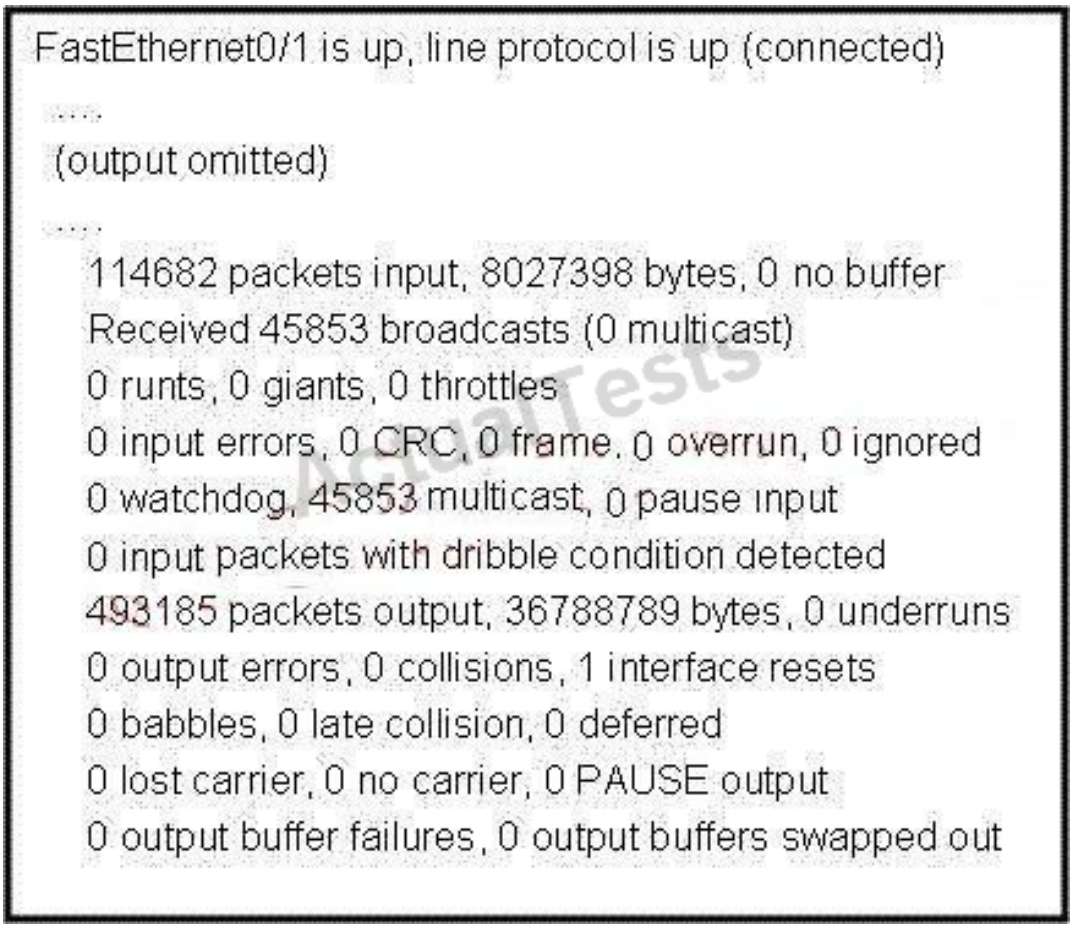
**A.** Save the configuration and reboot the router.
**B.** Press the CTRL+C keys.
**C.** Enter the no debug all command.
**D.** Use the show processes command.
**E.** Enter the terminal monitor command.

**Answer: C**

**Explanation:**

**QUESTION NO: 287**

Refer to the exhibit. Which two of the output fields could help you determine if a broadcast storm has occurred? (Choose two.)



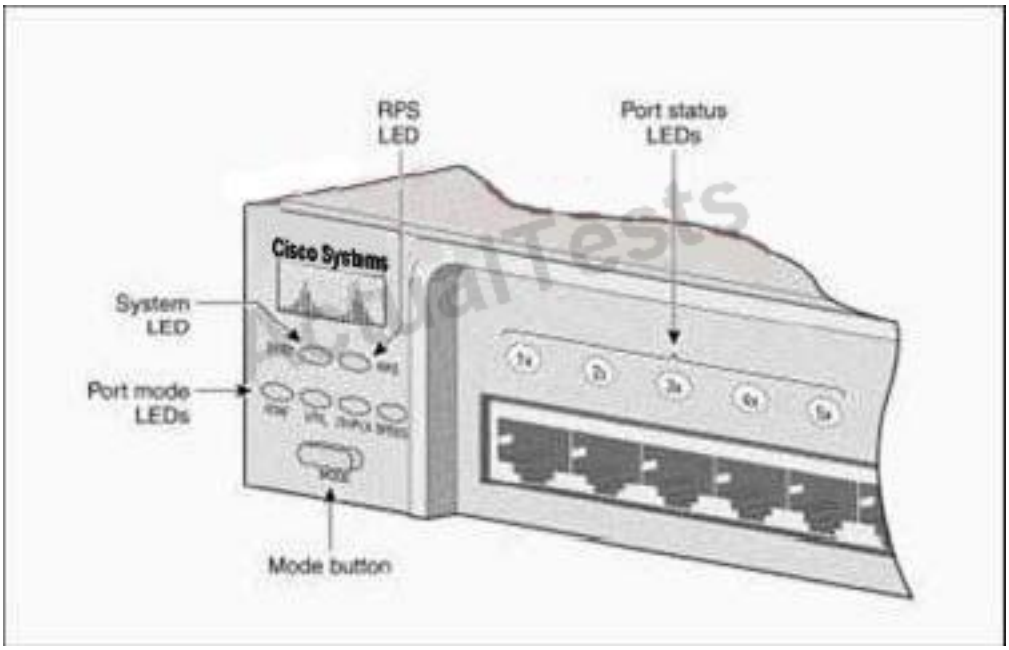

**A.** giants
**B.** no buffer
**C.** collisions
**D.** ignored
**E.** dribble condition

**Answer: B,D**

**Explanation:**

**QUESTION NO: 288**

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 of the switch 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:**

**QUESTION NO: 289**

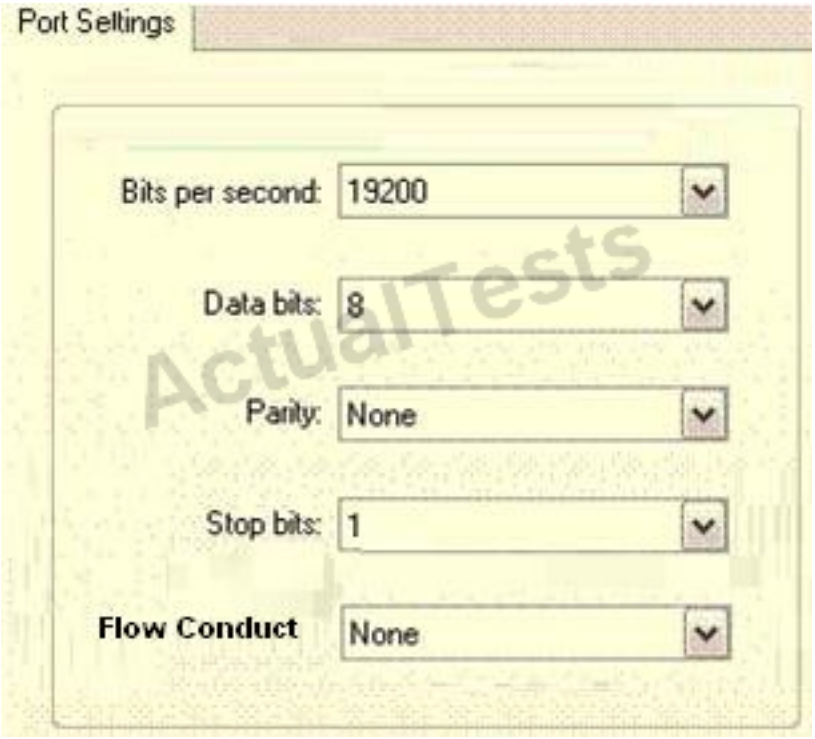
Refer to the exhibit. A network technician has added host A to the network. Host A cannot communicate on the network. A ping that is issued on the host to address 127.0.0.1 fails. What is the problem?


**A.** The router is not forwarding the ping packets to network 127.0.0.0.
**B.** The remote host at 127.0.0.1 is unreachable.
**C.** The default gateway is incorrect.
**D.** The IP address of host A is incorrect.
**E.** The TCP/IP protocols are not loaded.

**Answer: E**
**Explanation:**

**QUESTION NO: 290**

Refer to the exhibit. A network technician is attempting to use HyperTerminal to configure a new router using the settings shown. What is the reason the technician is unable to connect to the router?




**A.** The bits per second should be set to 9600.
**B.** The data bits should be set to 6.
**C.** Parity should be set to mark.
**D.** The stop bits should be set to 2.
**E.** Flow control should be set to hardware.

**Answer: A**
**Explanation:**

**QUESTION NO: 291**

Refer to the exhibit. What could be possible causes for the "Serial0/0 is down" interface status? (Choose two.)


**A.** A Layer 1 problem exists.

**B.** The bandwidth is set too low.
**C.** A protocol mismatch exists.
**D.** An incorrect cable is being used.
**E.** There is an incorrect IP address on the Serial 0/0 interface.

**Answer: A,D**
**Explanation:**

**QUESTION NO: 292**

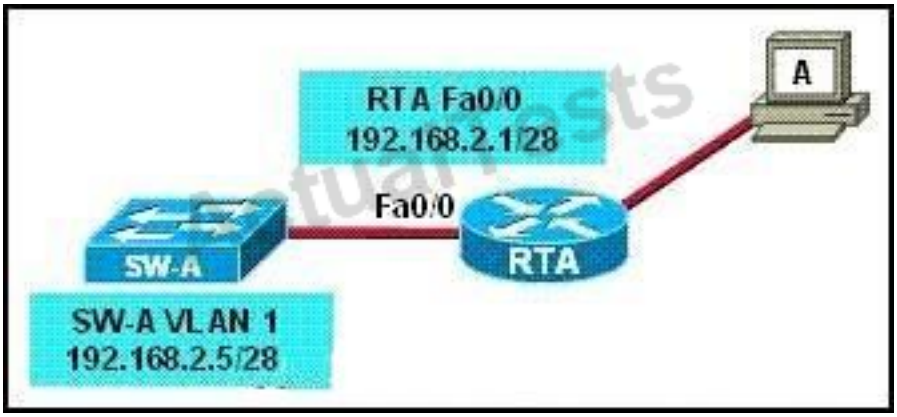
Which line from the output of the show ip interface command indicates that there is a Layer 1 problem?

**A.** Serial0/1 is up, line protocol is up
**B.** Serial0/1 is up, line protocol is down
**C.** Serial0/1 is down, line protocol is down
**D.** Serial0/1 is administratively down, line protocol is down

**Answer: C**
**Explanation:**

**QUESTION NO: 293**

Refer to the exhibit. Workstation A must be able to telnet to switch SW-A through router RTA for management purposes. What must be configured for this connection to be successful?




**A.** VLAN 1 on RTA
**B.** default gateway on SW-A
**C.** IP routing on SW-A

**D.** cross-over cable connecting SW-A and RTA

**Answer: B**

**Explanation:**

**QUESTION NO: 294**

Refer to the exhibit. Two buildings on the San Jose campus of a small company must be connected to use Ethernet with a bandwidth of at least 100 Mbps. The company is concerned about possible problems from voltage potential differences between the two buildings. Which media type should be used for the connection?

**A.** UTP cable
**B.** STP cable
**C.** coaxial cable
**D.** fiber optic cable

**Answer: D**

**Explanation:**

**QUESTION NO: 295**

What are two advantages of Layer 2 Ethernet switches over hubs? (Choose two.)

**A.** decreasing the number of collision domains
**B.** filtering frames based on MAC addresses
**C.** allowing simultaneous frame transmissions
**D.** increasing the size of broadcast domains
**E.** increasing the maximum length of UTP cabling between devices

**Answer: B,C**

**Explanation:**

**QUESTION NO: 296**

A PC is attached to the console port of a new Cisco router. The router is powered on. If the PC has been configured correctly for a console connection, what will the router display after it powers up?

**A.** Router>
**B.** an option to execute the show running-config command
**C.** a series of prompts to run various POST tests
**D.** the option to enter initial system configuration information

**Answer: D**
**Explanation:**

**QUESTION NO: 297**

A Cisco router has received a frame on an interface that is connected to a local network segment. The router has de-encapsulated the frame. What step is next in processing the packet?

**A.** The router uses ARP to determine the MAC address of the next-hop router.
**B.** The router encapsulates the packet into a frame appropriate for the outbound interface.
**C.** The router searches the routing table to determine where to forward the packet.
**D.** The router adds a frame to the packet with the next hop destination MAC address.

**Answer: C**
**Explanation:**

**QUESTION NO: 298**

What two actions must a router take in order to route incoming packets? (Choose two.)

**A.** Identify the destination network address of each packet.
**B.** Identify the source network address of each packet.
**C.** Validate sources of routing information.
**D.** Inspect the routing table to select the best path to the destination network address.
**E.** Verify the receipt of routed packets by the next hop router.
**F.** Inspect the ARP table to verify a legitimate source MAC address for each packet.

**Answer: A,D**
**Explanation:**

**QUESTION NO: 299**

A company wants to provide streaming video services to its customers and sales prospects. Which two characteristics of the network are the most critical to achieving this goal? (Choose two.)

**A.** addressing
**B.** authentication
**C.** bandwidth
**D.** latency
**E.** security
**F.** windowing

**Answer: C,D**
**Explanation:**

**QUESTION NO: 300**

The performance of the network at a medium-sized business has slowed to the point that users are complaining. In order to address the problem, the network administrator needs to determine what the users might be doing to cause the slowdown. Which two types of network services or applications are the most likely cause of the slowdown? (Choose two.)

**A.** online auction sites
**B.** instant messaging and chat room services
**C.** social networking web sites
**D.** blogs and other online browsing
**E.** PC-based VoIP services
**F.** online video sites

**Answer: E,F**
**Explanation:**

**QUESTION NO: 301**

What service do DNS servers provide?

**A.** Given an IP address, DNS servers determine the name of the host that is sought.
**B.** They resolve domain names to IP addresses.
**C.** They run a spell check on host names to ensure accurate routing.
**D.** They map individual hosts to their specific IP addresses.
**E.** They provide names for network resources such as printers and servers.

**Answer: B**
**Explanation:**

**QUESTION NO: 302**

Three access points have been installed and configured to cover a small office. What term defines the wireless topology?

**A.** BSS
**B.** IBSS
**C.** ESS
**D.** SSID

**Answer: C**
**Explanation:**

**QUESTION NO: 303**

A single 802.11g access point has been configured and installed in the center of a square office. A few wireless users are experiencing slow performance and drops while most users are operating at peak efficiency. What are three likely causes of this problem? (Choose three.)

**A.** mismatched TKIP encryption
**B.** null SSID
**C.** cordless phones
**D.** mismatched SSID
**E.** metal file cabinets
**F.** antenna type or direction

**Answer: C,E,F**
**Explanation:**

**QUESTION NO: 304**

Which method of connecting a small office/home office to an ISP uses existing telephone lines?

**A.** DSL
**B.** cable
**C.** serial
**D.** CSU/DSU

**Answer: A**
**Explanation:**

**QUESTION NO: 305**

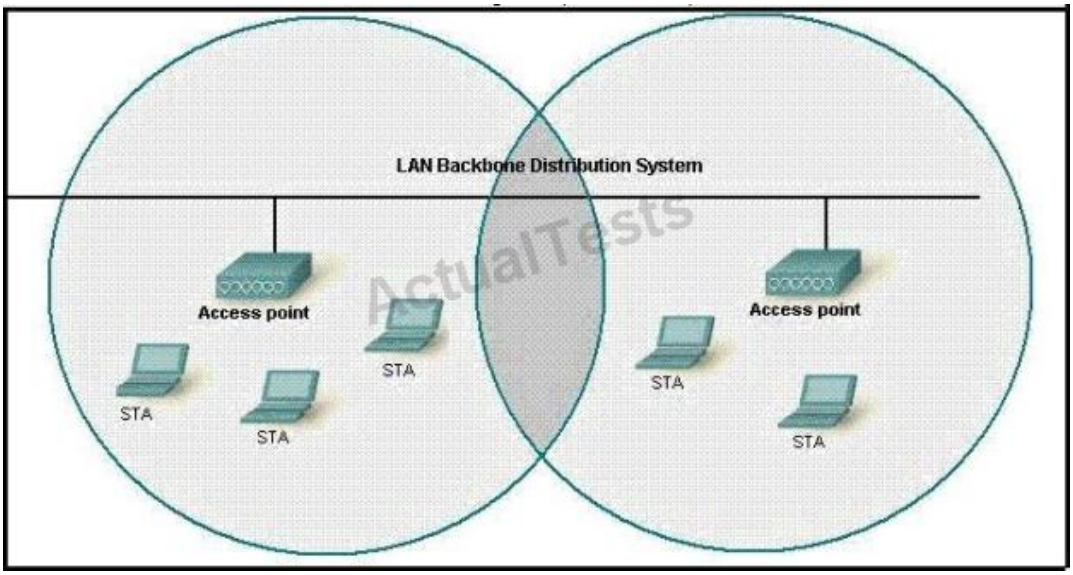
When the Wi-Fi logo appears on a wireless access point or client adapter, it signifies which two of these? (Choose two.)

**A.** The Wi-Fi Alliance has tested this device and determined that it meets IEEE WLAN standards.
**B.** The IEEE certifies that the device is in compliance with its wireless fidelity requirements.
**C.** The access point or client adapter has been manufactured by the Wireless Fidelity company.
**D.** The Wi-Fi Alliance has verified that the device can interoperate with other devices using the same standards.
**E.** The manufacturer of the equipment has paid the Wi-Fi Alliance to market its products.

**Answer: A,D**
**Explanation:**

**QUESTION NO: 306**

Refer to the exhibit. What two facts can be determined from the WLAN diagram? (Choose two.)




**A.** The area of overlap of the two cells represents a basic service set (BSS).
**B.** The network diagram represents an extended service set (ESS).
**C.** Access points in each cell must be configured to use channel 1.
**D.** The area of overlap must be less than 10% of the area to ensure connectivity.
**E.** The two APs should be configured to operate on different channels.

**Answer: B,E**

**Explanation:**

**QUESTION NO: 307**

Which two devices can interfere with the operation of a wireless network because they operate on similar frequencies? (Choose two.)

**A.** copier
**B.** microwave oven
**C.** toaster
**D.** cordless phone
**E.** IP phone
**F.** AM radio

**Answer: B,D**

**Explanation:**

**QUESTION NO: 308**

Which wireless LAN design ensures that a mobile wireless client will not lose connectivity when moving from one access point to another?

**A.** using adapters and access points manufactured by the same company
**B.** recommended overlap in cell coverage is 15 to 20%
**C.** configuring all access points to use the same channel
**D.** utilizing MAC address filtering to allow the client MAC address to authenticate with the surrounding APs

**Answer: B**

**Explanation:**

**QUESTION NO: 309**

Which type of attack is characterized by a flood of packets that are requesting a TCP connection to a server?

**A.** denial of service

**B.** brute force
**C.** reconnaissance
**D.** Trojan horse

**Answer: A**
**Explanation:**

**QUESTION NO: 310**

A host computer has the IP address 192.168.43.139 and netmask 255.255.255.240. On which logical IP network does this host reside?

**A.** 192.168.0.0/26
**B.** 192.168.0.0/28
**C.** 192.168.43.0/28
**D.** 192.168.43.64/28
**E.** 192.168.43.112/28
**F.** 192.168.43.128/28

**Answer: F**
**Explanation:**

**QUESTION NO: 311**

What source and destination information can be found in the data link layer?

**A.** URL
**B.** IP address
**C.** port number
**D.** MAC address

**Answer: D**
**Explanation:**

**QUESTION NO: 312**

Which transport layer protocol is best suited for the transport of VoIP data?

**A.** RIP
**B.** UDP
**C.** TCP
**D.** OSPF
**E.** HTTP

**Answer: B**

**Explanation:**

**QUESTION NO: 313**

When troubleshooting a LAN interface operating in full duplex mode, which error condition can be immediately ruled out?

**A.** giants
**B.** no buffers
**C.** collisions
**D.** ignored
**E.** dribble condition

**Answer: C**

**Explanation:**

**QUESTION NO: 314**

Refer to the exhibit. Which statement is correct regarding the results shown for the show interface s0/0/0 command?

```
RouterA# show interface s0/0/0
Serial0/0/0 is administratively down, line protocol is down
  Hardware is GT96K Serial
  Internet address is 10.12.12.1/28
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
  Last input never, output 00:00:14, output hang never
  Last clearing of "show interface" counters 5d15h
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 81071
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     0 packets input, 0 bytes, 0 no buffer
     Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     145 packets output, 5084 bytes, 0 underruns
     0 output errors, 0 collisions, 4 interface resets
     0 output buffer failures, 0 output buffers swapped out
     0 carrier transitions
     DCD=down  DSR=up  DTR=down  RTS=down  CTS=down
```

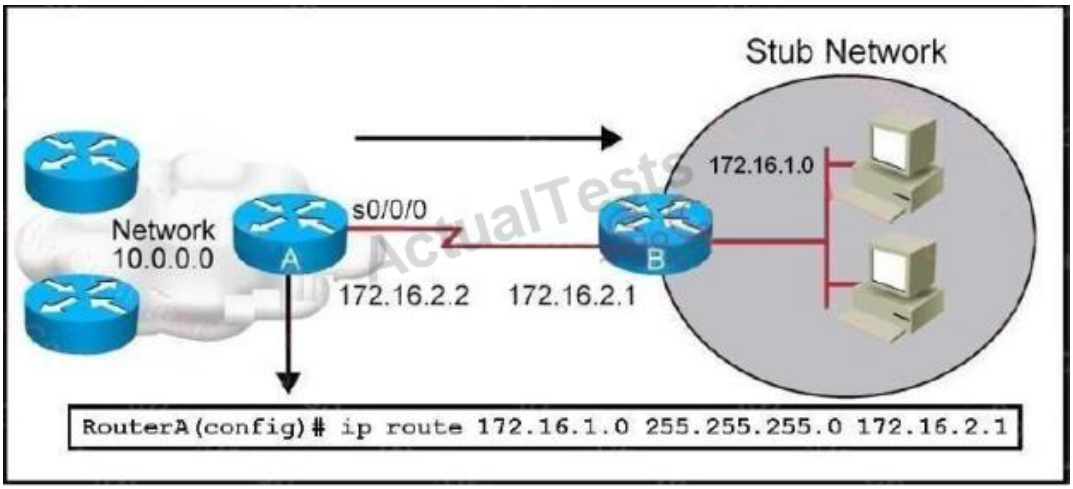
**A.** The subnet mask for this interface is 255.255.255.248.
**B.** The subnet mask for this interface is 255.255.255.252.
**C.** The IP address that is configured on s0/0/0 is a public address.
**D.** This interface can be enabled by issuing a no shutdown command.
**E.** The default encapsulation protocol for a Cisco serial interface is PPP.

**Answer: D**

**Explanation:**

**QUESTION NO: 315**

Refer to the exhibit. Which statement is correct regarding the configuration shown?




**A.** This will not work as the subnet mask on serial interfaces must be /30.

**B.** What is shown as being configured would be considered a default route.
**C.** This configuration creates a bidirectional path between RouterA and RouterB.
**D.** The command ip route 172.16.1.0 255.255.255.0 s0/0/0 would provide similar routing functionality.

**Answer: D**
**Explanation:**

**QUESTION NO: 316**

An administrator previously changed the encapsulation on a synchronous serial line and saved the configuration. Now the administrator wants to restore the encapsulation back to the default. What action can the administrator do to return the interface back to its default encapsulation?

**A.** Change the encapsulation to ARPA.
**B.** Configure the interface for HDLC encapsulation.
**C.** Reboot the router and allow it to reload the configuration.
**D.** Issue the shutdown then no shutdown commands to reset the encapsulation on the interface.
**E.** Remove the cable and plug it back in to allow the router to autonegotiate encapsulation settings.

**Answer: B**
**Explanation:**

**QUESTION NO: 317**

Assuming a subnet mask of 255.255.248.0, three of the following addresses are valid host addresses. Which are these addresses? (Choose three.)

**A.** 172.16.9.0
**B.** 172.16.8.0
**C.** 172.16.31.0
**D.** 172.16.20.0

**Answer: A,C,D**
**Explanation:**

**QUESTION NO: 318**

In a lab environment you are connecting two routers using their Fast Ethernet ports. What type of cable will allow normal connectivity between the two routers?

**A.** rollover
**B.** crossover
**C.** null modem
**D.** straight-through

**Answer: B**

**Explanation:**

**QUESTION NO: 319**

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

**A.** serial port
**B.** console port
**C.** Ethernet port
**D.** fiber optic port

**Answer: A**

**Explanation:**

**QUESTION NO: 320**

Refer to the exhibit.

```
RouterA# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

     172.16.0.0/24 is subnetted, 1 subnets
C       172.16.1.0 is directly connected, Ethernet0/1
     10.0.0.0/30 is subnetted, 1 subnets
C       10.255.255.200 is directly connected, Serial0/0
S*   0.0.0.0/0 is directly connected, Serial0/0
RouterA#
```

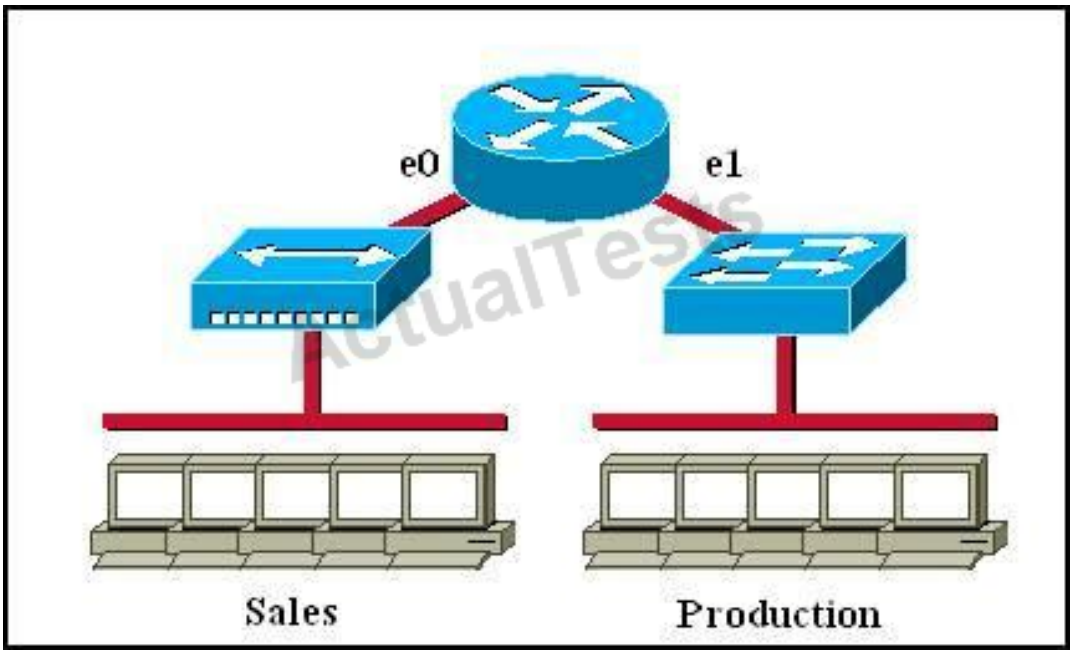
The output is from a router in a large enterprise. From the output, determine the role of the router.

**A.** A Core router
**B.** The HQ Internet gateway router
**C.** The WAN router at the central site
**D.** Remote stub router at a remote site

**Answer: D**
**Explanation:**

**QUESTION NO: 321**

Which of the following statements describe the network shown in the graphic? (Choose two.)

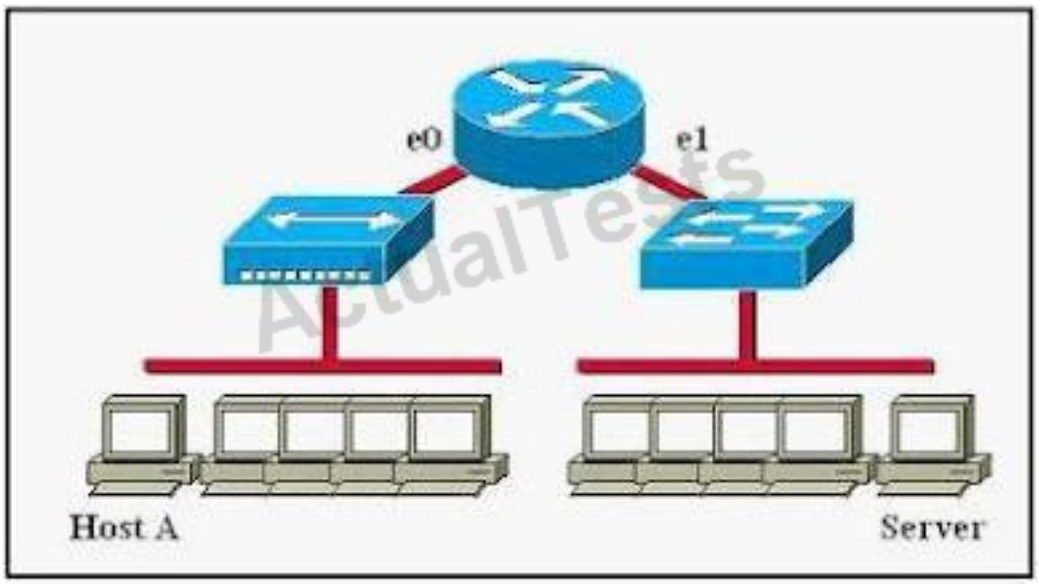



**A.** There are two broadcast domains in the network.
**B.** There are four broadcast domains in the network.
**C.** There are six broadcast domains in the network.
**D.** There are four collision domains in the network.
**E.** There are five collision domains in the network.
**F.** There are seven collision domains in the network.

**Answer: A,F**
**Explanation:**

**QUESTION NO: 322**

Refer to the graphic. Host A is communicating with the server. What will be the source MAC address of the frames received by Host A from the server?




**A.** the MAC address of router interface e0
**B.** the MAC address of router interface e1
**C.** the MAC address of the server network interface
**D.** the MAC address of host A

**Answer: A**
**Explanation:**

**QUESTION NO: 323**

How many simultaneous Telnet sessions does a Cisco router support by default?

**A.** 1
**B.** 2
**C.** 3
**D.** 4
**E.** 5
**F.** 6

**Answer: E**
**Explanation:**

**QUESTION NO: 324**

Which Layer 1 devices can be used to enlarge the area covered by a single LAN segment? (Choose two.)

**A.** switch
**B.** router
**C.** NIC
**D.** hub
**E.** repeater
**F.** RJ-45 transceiver

**Answer: D,E**

**Explanation:**

**QUESTION NO: 325**

WAN data link encapsulation types include which of the following? (Choose two.)

**A.** T1
**B.** Frame Relay
**C.** DSL
**D.** PPP
**E.** ISDN

**Answer: B,D**

**Explanation:**

**QUESTION NO: 326**

Which of the following commands enables a network administrator to verify the application layer connectivity between source and destination?

**A.** ping
**B.** telnet
**C.** traceroute
**D.** verify
**E.** trace

**Answer: B**

**Explanation:**

**QUESTION NO: 327**

Which protocol provides best-effort delivery of user data in a network?

**A.** TCP
**B.** MAC
**C.** IP
**D.** ARP
**E.** SMTP

**Answer: C**
**Explanation:**

**QUESTION NO: 328**

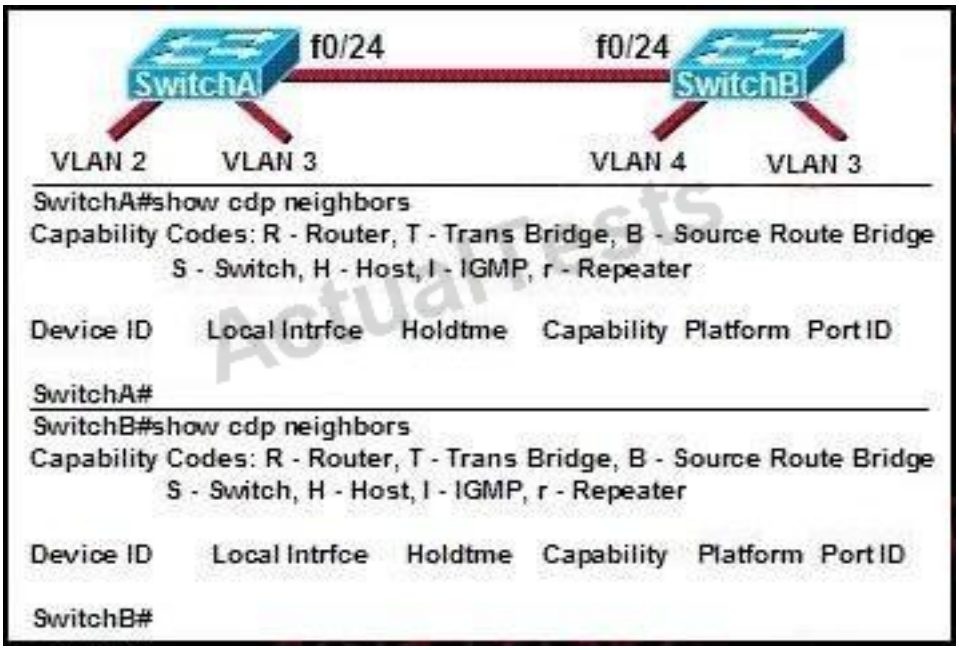
Which of the following are found in a TCP header, but not in a UDP header? (Choose three.)

**A.** sequence number
**B.** acknowledgment number
**C.** source port
**D.** destination port
**E.** window size
**F.** checksum

**Answer: A,B,E**
**Explanation:**

**QUESTION NO: 329**

Refer to the exhibit. Two 2950 switches connect through ports fa0/24 using a straight-through cable. Based on the output that is shown in the exhibit and the information that is given, what can be concluded about this network?




**A.** STP can not be configured on a FastEthernet ports.
**B.** An IP address and default gateway must be configured on each switch.
**C.** The switches do not share the same VTP domain.
**D.** Port fa0/24 must be configured as a trunk in order for the switches to share neighbor information.
**E.** The switches are cabled incorrectly.

**Answer: E**

**Explanation:**

**QUESTION NO: 330**

Refer to the exhibit. Which two statements are true of the interface configuration? (Choose two.)

```
Router# show interface s0
Serial0 is up, line protocol is up
  Hardware is HD64570
  Internet address is 10.140.1.2/24
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec, rely 255/255, load 1/255
  Encapsulation PPP, loopback not set, keepalive set (10 sec)
  LCP Open
  Open: IPCP, CDPCP
  Last input 00:00:05, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/40, 0 drops; input queue 0/75, 0 drops
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
     38021 packets input, 5656110 bytes, 0 no buffer
     Received 23488 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
     38097 packets output, 2135697 bytes, 0 underruns
     0 output errors, 0 collisions, 6045 interface resets
     0 output buffer failures, 0 output buffers swapped out
     482 carrier transitions
     DCD=up  DSR=up  DTR=up  RTS=up  CTS=up
```

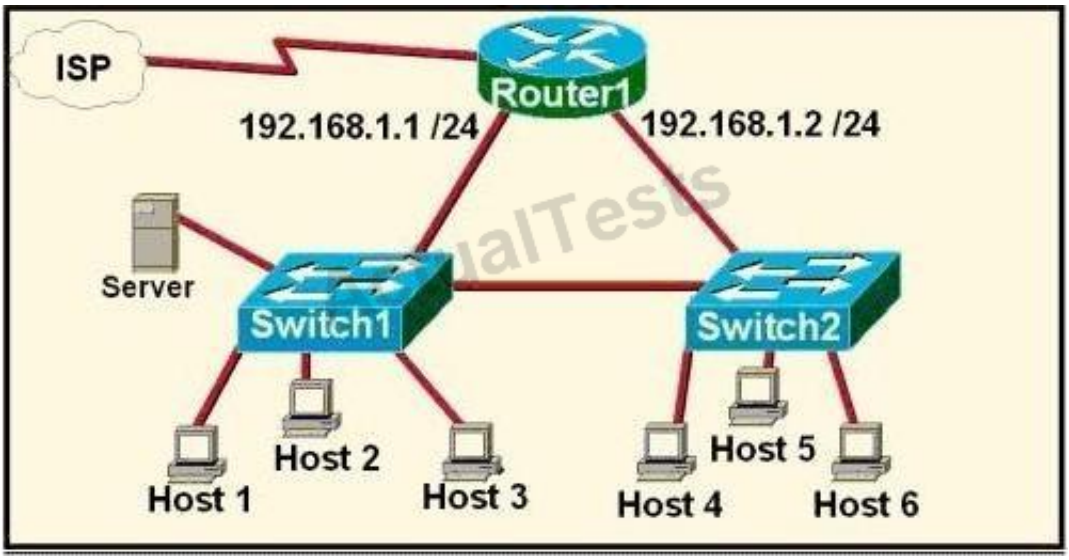
**A.** The encapsulation in use on this interface is PPP.
**B.** The default serial line encapsulation is in use on this interface.
**C.** The address mask of this interface is 255.255.255.0.
**D.** This interface is connected to a LAN.
**E.** The interface is not ready to forward packets.

**Answer: A,C**

**Explanation:**

**QUESTION NO: 331**

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?

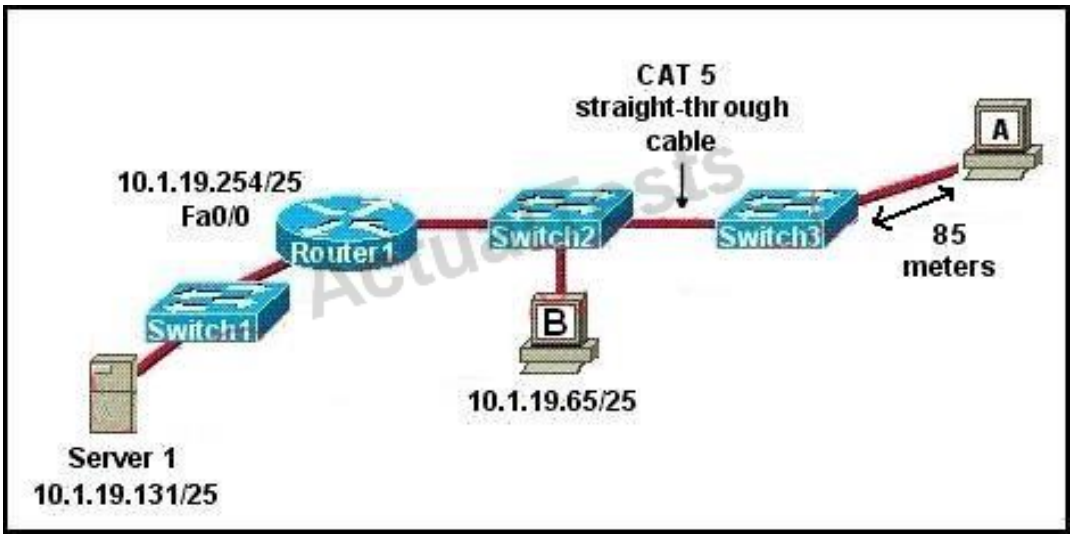



**A.** This design will function as intended.
**B.** Spanning-tree will need to be used.
**C.** The router will not accept the addressing scheme.
**D.** The connection between switches should be a trunk.
**E.** The router interfaces must be encapsulated with the 802.1Q protocol.

**Answer: C**
**Explanation:**

**QUESTION NO: 332**

The internetwork shown in the diagram is experiencing network connectivity problems. What is the cause of the problem?



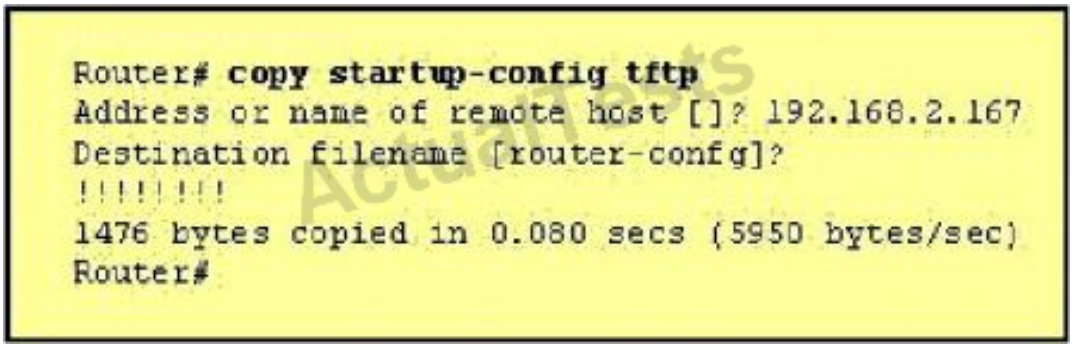
**A.** The cabling connecting host A to Switch3 is too long.
**B.** The address of host B is a broadcast address.
**C.** The IP address of interface Fa0/0 of Router1 is not a usable address.
**D.** The cable connecting Switch2 and Switch3 should be a crossover.
**E.** The IP address of Server 1 is in the wrong subnet.

**Answer: D**

**Explanation:**

**QUESTION NO: 333**

Refer to the exhibit. What does the address 192.168.2.167 represent?



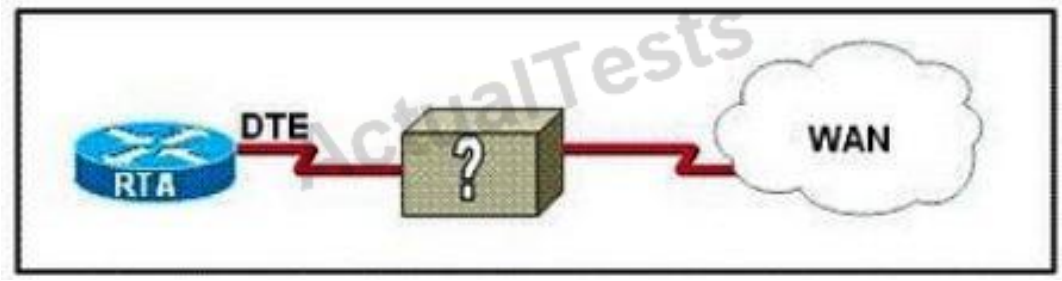

**A.** the TFTP server from which the file startup-config is being transferred
**B.** the router from which the file startup-config is being transferred
**C.** the TFTP server from which the file router-confg is being transferred
**D.** the TFTP server to which the file router-confg is being transferred
**E.** the router to which the file router-confg is being transferred
**F.** the router to which the file startup-config is being transferred

**Answer: A**

**Explanation:**

**QUESTION NO: 334**

Refer to the exhibit. The network administrator must complete the connection between the RTA of the XYZ Company and the service provider. To accomplish this task, which two devices could be installed at the customer site to provide a connection through the local loop to the central office of the provider? (Choose two.)

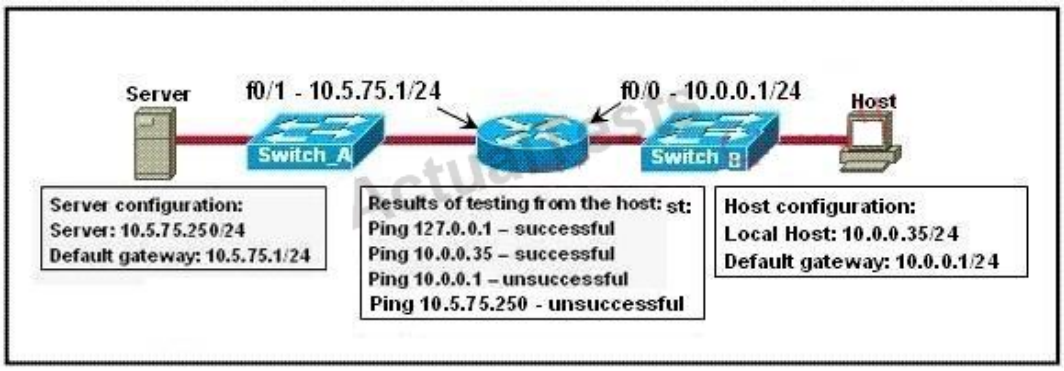



**A.** WAN switch
**B.** PVC
**C.** ATM switch
**D.** multiplexer
**E.** CSU/DSU
**F.** modem

**Answer: E,F**
**Explanation:**

**QUESTION NO: 335**

Refer to the exhibit. A technician is troubleshooting a host connectivity problem. The host is unable to ping a server connected to Switch_A. Based on the results of the testing, what could be the problem?

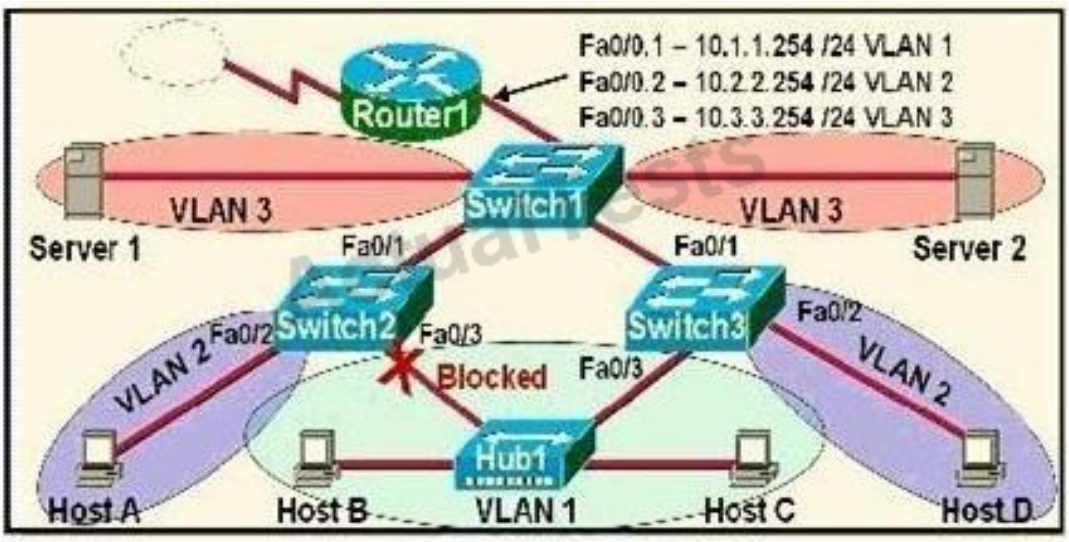



**A.** A remote physical layer problem exists.
**B.** The host NIC is not functioning.
**C.** TCP/IP has not been correctly installed on the host.
**D.** A local physical layer problem exists.

**Answer: D**
**Explanation:**

**QUESTION NO: 336**

Which statement is correct about the internetwork shown in the diagram?

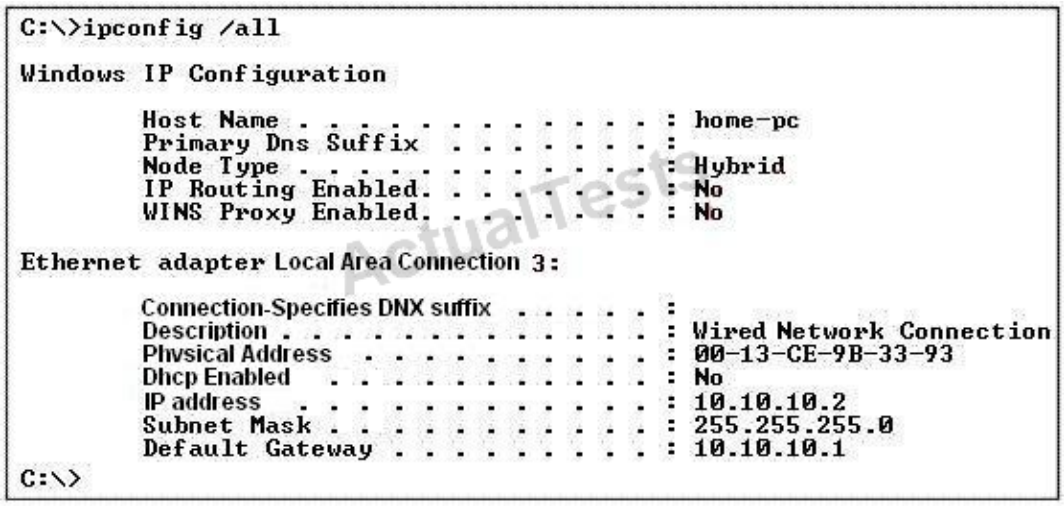



**A.** Switch 2 is the root bridge.
**B.** Spanning Tree is not running.
**C.** Host D and Server 1 are in the same network.
**D.** No collisions can occur in traffic between Host B and Host C.
**E.** If Fa0/0 is down on Router 1, Host A cannot access Server 1.
**F.** If Fa0/1 is down on Switch 3, Host C cannot access Server 2.

**Answer: E**
**Explanation:**

**QUESTION NO: 337**

Refer to the exhibit. A user cannot reach any web sites on the Internet, but others in the department are not having a problem. What is the most likely cause of the problem?




**A.** IP routing is not enabled.
**B.** The default gateway is not in the same subnet.
**C.** A DNS server address is not reachable by the PC.
**D.** A DHCP server address is not reachable by the PC.
**E.** NAT has not been configured on the router that connects to the Internet.

**Answer: C**
**Explanation:**

**QUESTION NO: 338**

What is the default configuration register setting on most Cisco routers?

**A.** 0x2210
**B.** 0x2104
**C.** 0x2102
**D.** 0x2012
**E.** 0x2142

**Answer: C**
**Explanation:**

**QUESTION NO: 339**

When you power up a Cisco router; in what memory is the start-up configuration normally stored in?

**A.** RAM
**B.** ROM
**C.** FLASH
**D.** NVRAM

**Answer: D**
**Explanation:**

**QUESTION NO: 340**

If NVRAM lacks boot system commands, where does the router look for the Cisco IOS by default?

**A.** ROM
**B.** RAM
**C.** Flash
**D.** bootstrap
**E.** startup-config

**Answer: C**
**Explanation:**

**QUESTION NO: 341**

Some of routers have been configured with default routes. What are some of the advantages of using default routes? (Choose two)

**A.** They establish routes that will never go down.
**B.** The keep routing tables small.
**C.** They require a great deal of CPU power.
**D.** The allow connectivity to remote networks that are not in the routing table.
**E.** They direct traffic from the Internet into corporate networks.

**Answer: B,D**
**Explanation:**

**QUESTION NO: 342**

In which situation would the use of a static route be appropriate?

**A.** To configure a route to the first Layer 3 device on the network segment.
**B.** To configure a route from an ISP router into a corporate network.
**C.** To configure a route when the administrative distance of the current routing protocol is too low.
**D.** To reach a network is more than 15 hops away.
**E.** To provide access to the Internet for enterprise hosts.

**Answer: B**
**Explanation:**

**QUESTION NO: 343**

When you use the ping command to send ICMP messages across a network, what's the most common request/reply pair you'll see? (Select one answer choice)

**A.** Echo request and Echo reply
**B.** ICMP hold and ICMP send
**C.** ICMP request and ICMP reply
**D.** Echo off and Echo on

**Answer: A**
**Explanation:**

**QUESTION NO: 344**

An administrator issues the show ip interface s0/0 command and the output displays that interface Serial0/0 is up, line protocol is up What does "line protocol is up" specifically indicate about the interface?

**A.** The cable is attached properly.
**B.** CDP has discovered the connected device.
**C.** Keepalives are being received on the interface.
**D.** A carrier detect signal has been received from the connected device.
**E.** IP is correctly configured on the interface.

**Answer: C**
**Explanation:**

**QUESTION NO: 345**

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 than RIP version 1
**E.** It has the same maximum hop count as version 1
**F.** It does not send the subnet mask un updates

**Answer: B,C,E**
**Explanation:**

**QUESTION NO: 346**

How can an administrator determine if a router has been configured when it is first powered up?

**A.** A configured router prompts for a password.
**B.** A configured router goes to the privileged mode prompt.
**C.** An unconfigured router goes into the setup dialog.
**D.** An unconfigured router goes to the enable mode prompt.

**Answer: C**
**Explanation:**

**QUESTION NO: 347**

Regarding the extended ping command; which of the statements below are true? (Choose three)

**A.** The extended ping command is supported from user EXEC mode.
**B.** The extended ping command is available from privileged EXEC mode.
**C.** With the extended ping command you can specify the TCP and UDP port to be pinged.
**D.** With the extended ping command you can specify the timeout value.
**E.** With the extended ping command you can specify the datagram size.

**Answer: B,D,E**
**Explanation:**

**QUESTION NO: 348**

Which sequence of actions will allow telneting from a user's PC to a router using TCP/IP?

**A.** Connect the PC's COM port to the router's console port using a straight-through cable.
**B.** Connect the PC's COM port to the router's console port using a crossover cable.
**C.** Connect the PC's COM port to the router's Ethernet port using a straight-through cable.
**D.** Connect the PC's Ethernet port to the router's Ethernet port using a crossover cable.
**E.** Connect the PC's Ethernet port to the router's Ethernet port using a rollover cable.
**F.** Connect the PC's Ethernet port to the router's Ethernet port using a straight-through cable.

**Answer: D**

**Explanation:**