

Cisco.Actualtests.200-120.v2013-12-09.by.Watson.314q

Number: 200-120

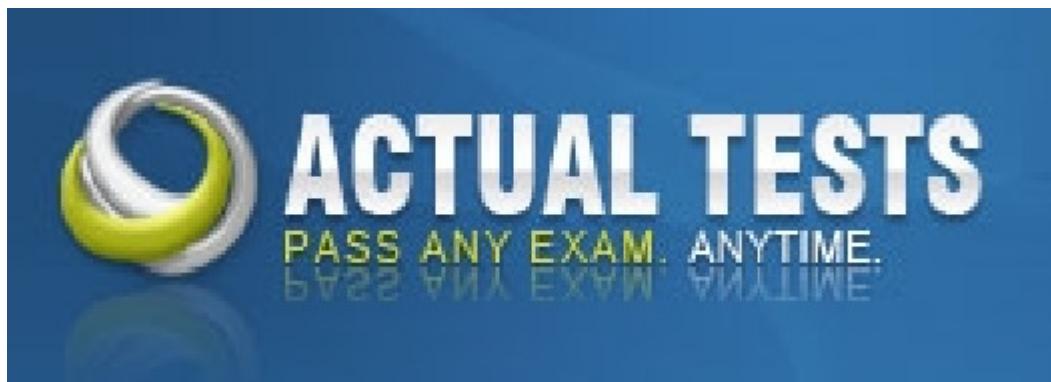
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Exam Code: 200-120

Exam Name: CCNA Cisco Certified Network Associate CCNA (803)



Sections

1. Introduction
2. TCP/IP
3. IP Addressing / VLSM
4. Introduction to Cisco IOS
5. Managing Cisco IOS
6. IP Routing
7. Security
8. NAT
9. Switching
10. VLAN
11. IPv6
12. WAN
13. Drag & Drop
14. Simulation
15. Netflow
16. SNMP/HSRP/GLBP
17. Syslog

200-120**QUESTION 1**

Refer to the exhibit. What will Router1 do when it receives the data frame shown? (Choose three.)

Router1# show ip arp

Protocol	Address	Age(min)	Hardware Adddr	Type	Interface
Internet	192.168.20.5	9	UUUU.UcU'/.f892	ARPA	FastEthernet0/0
Internet	192.168.60.5	8	0000.0c07.ac00	ARPA	FastEthernet0/1
Internet	192.168.20.1	-	0000.0c63.ae45	ARPA	FastEthernet0/0
Internet	192.168.40.5	9	0000.0c07.4320	ARPA	FastEthernet0/2
Internet	192.168.60.1	-	0000.0c63.1300	ARPA	FastEthernet0/1
Internet	192.168.40.1	-	0000.0c36.6965	ARPA	FastEthernet0/2

Data Frame:

Source MAC	Source IP	Destination MAC	Destination IP
0000.0c07.f892	192.168.20.5	0000.0c63.ae45	192.168.40.5

- A. Router1 will strip off the source MAC address and replace it with the MAC address 0000.0c36.6965.
- B. Router1 will strip off the source IP address and replace it with the IP address 192.168.40.1.
- C. Router1 will strip off the destination MAC address and replace it with the MAC address 0000.0c07.4320.
- D. Router1 will strip off the destination IP address and replace it with the IP address of 192.168.40.1.
- E. Router1 will forward the data packet out interface FastEthernet0/1.
- F. Router1 will forward the data packet out interface FastEthernet0/2.

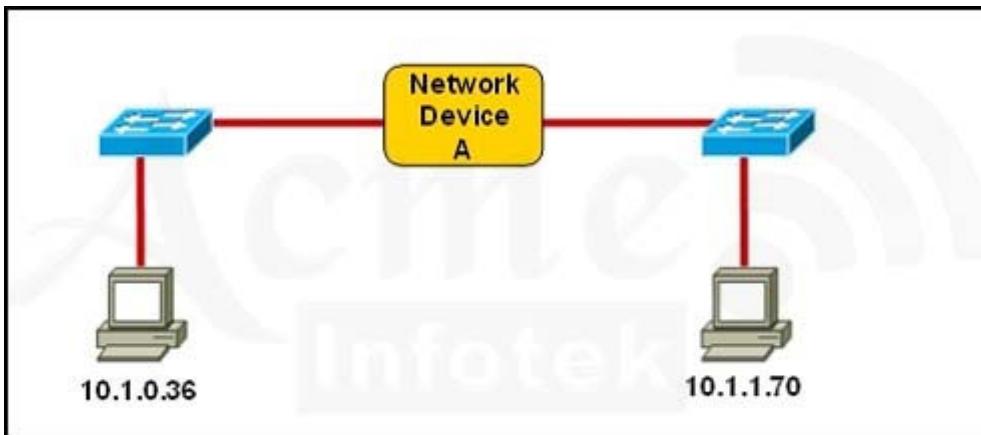
Correct Answer: ACF**Section: Introduction to Cisco IOS****Explanation****Explanation/Reference:**

The router will decapsulate the frame, thus removing the source and destination MAC addresses. It will consult its routing table to work out on which interface to send the packet which is going to 192.168.40.5: interface FastEthernet0/2. The router will then encapsulate the packet into a new frame with its own MAC address as the source MAC address and the MAC address of 192.168.40.5 as the destination MAC address.

Looking at the ARP table, the MAC address for 192.168.40.5 is 0000.0c07.4320 (the one which has been dynamically learned and has age 9 minutes). So what is the router's MAC address on this link? The ARP table shows a static entry (no age) for 192.168.40.1 which is 0000.0c36.6965. As it is static, we can conclude that these are the router's IP and MAC address.

QUESTION 2

Refer to the exhibit. Which three statements correctly describe Network Device A? (Choose three.)



- A. With a network wide mask of 255.255.255.128, each interface does not require an IP address.
- B. With a network wide mask of 255.255.255.128, each interface does require an IP address on a unique IP subnet.
- C. With a network wide mask of 255.255.255.0, it must be a Layer 2 device for the PCs to communicate with each other.
- D. With a network wide mask of 255.255.255.0, it must be a Layer 3 device for the PCs to communicate with each other.
- E. With a network wide mask of 255.255.254.0, each interface does not require an IP address.

Correct Answer: BDE

Section: IP Routing

Explanation

Explanation/Reference:

If the device is a Layer 2 transparent device (hub, bridge, switch) then the two PCs must be on the same subnet. The smallest subnet which would contain both of the IP addresses is 10.1.0.0/23 with the range 10.1.0.0 up to 10.1.1.255. The mask for this is 255.255.254.0. On the other hand, if the device is a router, then we would need a netmask smaller than 255.255.254.0 and we would have two subnets.

The masks of 255.255.255.128 and 255.255.255.0 are both smaller than 255.255.254.0, so this rules out A and C as the answer and confirms B and D as the answer. E is the situation where we have the smallest subnet that contains both IP addresses, so we can have a Layer 2 device which does not require an IP address.

QUESTION 3

Which layer in the OSI reference model is responsible for determining the availability of the receiving program and checking to see if enough resources exist for that communication?

- A. transport
- B. network
- C. presentation
- D. session
- E. application

Correct Answer: E

Section: Introduction

Explanation

Explanation/Reference:

Programs live at the top end of the OSI model, so this rules out the network (delivery of packets across multiple links) and transport (end-to-end reliability and ports). The presentation layer is concerned with the representation of data. The session layer provides the mechanism for opening, closing and managing a [session](#) between end-user application processes, i.e., a semi-permanent dialogue (Wikipedia).

Wikipedia says: In the [OSI model](#), the definition of its application layer is narrower in scope. The OSI model defines the application layer as being the user interface. The OSI application layer is responsible for displaying data and images to the user in a human-recognizable format. So the best answer is the application layer, as this will see if there is a program (user interface) available to receive communications.

QUESTION 4

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.

Correct Answer: ADE

Section: WAN

Explanation

Explanation/Reference:

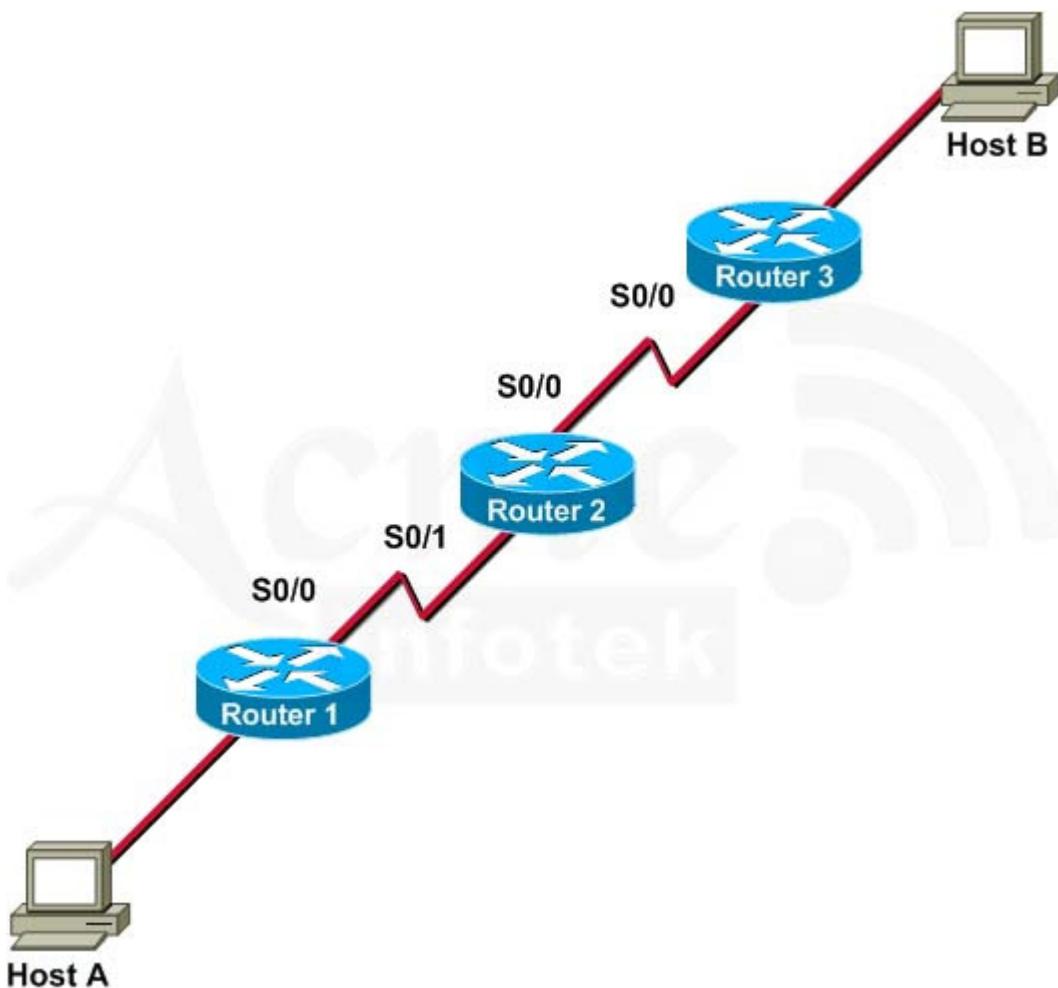
Modems and CSU/DSU are considered DCE: data communications equipment, parts of the WAN itself.

Routers are considered DTE: data terminating equipment, right on the edge of the WAN and not really part of it.

Modems are considered to be analog devices and terminate an analog local loop. CSU/DSU devices are considered to be digital and terminate a digital local loop.

QUESTION 5

Refer to the exhibit.



Host A pings interface S0/0 on router 3. What is the TTL value for that ping?

- A. 252
- B. 253
- C. 254
- D. 255

Correct Answer: B

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

The default TTL is 255, and as a packet passes through a router the TTL is decremented. By the time the ping packet reaches S0/0 on Router 3, it has passed through two routers and the TTL is now 253. Note that the S0/0 interface responds to the ping: the packet is not routed by Router 3 and so the TTL in the ping packet is not decremented to 252.

QUESTION 6

A network administrator is verifying the configuration of a newly installed host by establishing an FTP connection to a remote server.

What is the highest layer of the protocol stack that the network administrator is using for this operation?

- A. application
- B. presentation

- C. session
- D. transport
- E. internet
- F. data link

Correct Answer: A

Section: TCP/IP

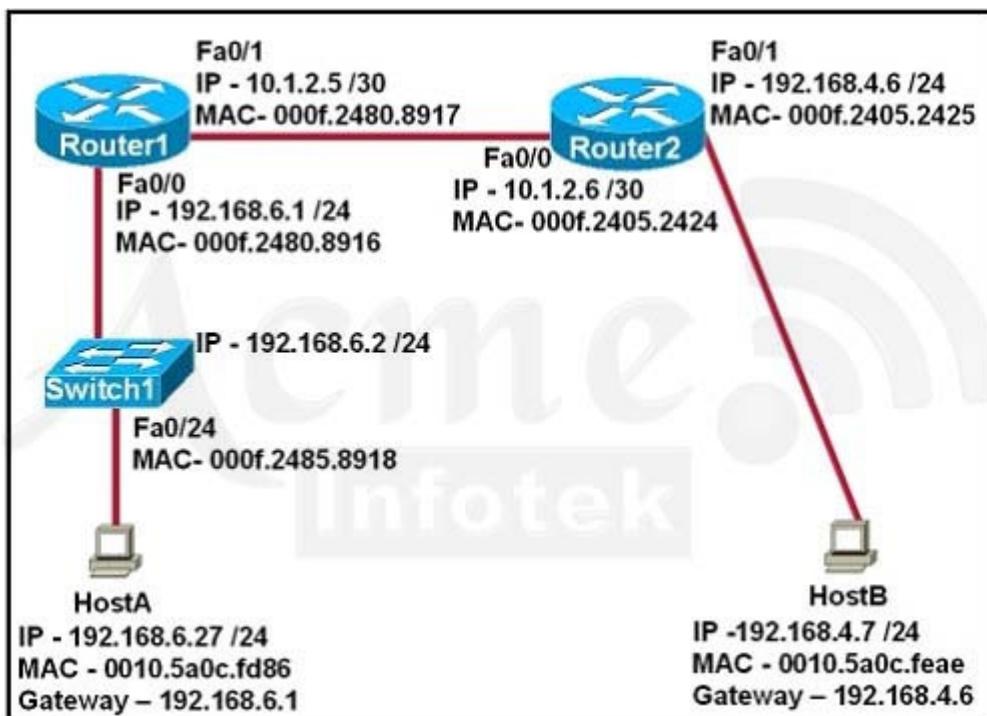
Explanation

Explanation/Reference:

FTP is an application layer protocol, so this is the highest OSI layer involved in the operation.

QUESTION 7

Refer to the exhibit. After HostA pings HostB, which entry will be in the ARP cache of HostA to support this transmission?



- A.
- | Interface Address | Physical Address | Type |
|-------------------|------------------|---------|
| 192.168.4.7 | 000f.2480.8916 | dynamic |
- B.
- | Interface Address | Physical Address | Type |
|-------------------|------------------|---------|
| 192.168.4.7 | 0010.5a0c.feaе | dynamic |
- C.
- | Interface Address | Physical Address | Type |
|-------------------|------------------|---------|
| 192.168.6.1 | 0010.5a0c.feaе | dynamic |

	Interface Address	Physical Address	Type
D.	192.168.6.1	000f.2480.8916	dynamic
E.	192.168.6.2	0010.5a0c.feaе	dynamic
F.	192.168.6.2	000f.2485.8918	dynamic

Correct Answer: D

Section: IP Routing

Explanation

Explanation/Reference:

Hosts A and B are on different subnets and are separated by routers, so the MAC address of HostB will never get back to HostA: Router2 will decapsulate the frames that HostB sends. Router1 will re-encapsulate the ping packet sent by HostB and put its own MAC address in the frame. Therefore, HostA will put 192.168.6.1 and 000f.2480.8916 into its ARP table as a dynamic entry.

QUESTION 8

A network interface port has collision detection and carrier sensing enabled on a shared twisted pair network. From this statement, what is known about the network interface port?

- A. This is a 10 Mb/s switch port.
- B. This is a 100 Mb/s switch port.
- C. This is an Ethernet port operating at half duplex.
- D. This is an Ethernet port operating at full duplex.
- E. This is a port on a network interface card in a PC.

Correct Answer: C

Section: Introduction

Explanation

Explanation/Reference:

The only time that CSMA/CD (carrier sense medium access with collision detection) is ever needed is when the medium is shared by all devices. In this situation, devices can never send and receive at the same time; they must operate in half-duplex mode. The bitrate is irrelevant.

QUESTION 9

A receiving host computes the checksum on a frame and determines that the frame is damaged. The frame is then discarded. At which OSI layer did this happen?

- A. physical
- B. session
- C. data link
- D. transport
- E. network

Correct Answer: C

Section: Introduction

Explanation

Explanation/Reference:

Operations on frames occur at the data link layer.

QUESTION 10

Which of the following correctly describe steps in the OSI data encapsulation process? (Choose two)

- A. The transport layer divides a data stream into segments and may add reliability and flow control information.
- B. The data link layer adds physical source and destination addresses and an FCS to the segment.
- C. Packets are created when the network layer encapsulates a frame with source and destination host addresses and protocol-related control information.
- D. Packets are created when the network layer adds Layer 3 addresses and control information to a segment.
- E. The presentation layer translates bits into voltages for transmission across the physical link.

Correct Answer: AD

Section: Introduction

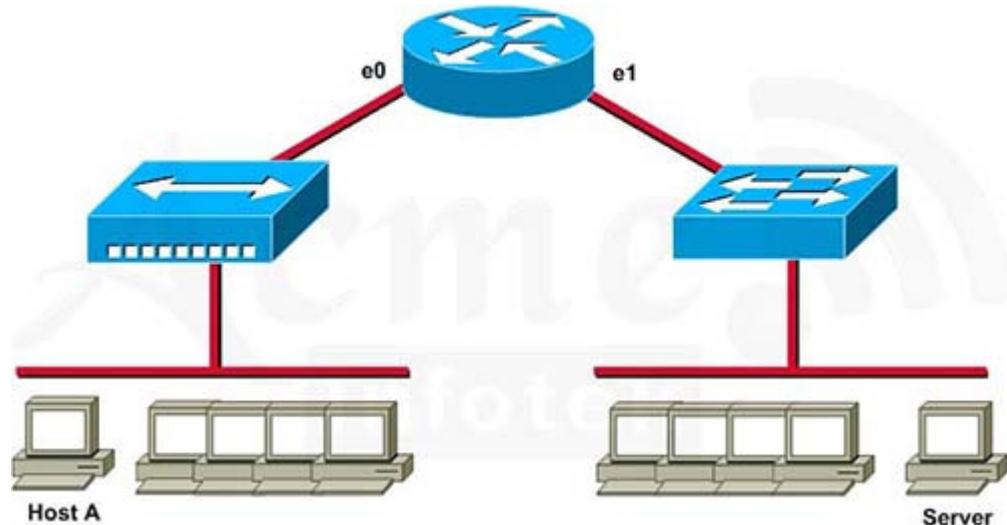
Explanation

Explanation/Reference:

The key word here is encapsulation. The transport layer breaks the stream into segments, with ports, reliability and flow control fields added (TCP) (A). The network layer encapsulates the **segment** (not a frame) into packets by adding layer 3 addresses (D). The data link layer adds physical source and destination addresses and an FCS to a **packet**, not a segment.

QUESTION 11

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 the server network interface
- B. the MAC address of host A
- C. the MAC address of router interface e1
- D. the MAC address of router interface e0

Correct Answer: D

Section: Introduction

Explanation

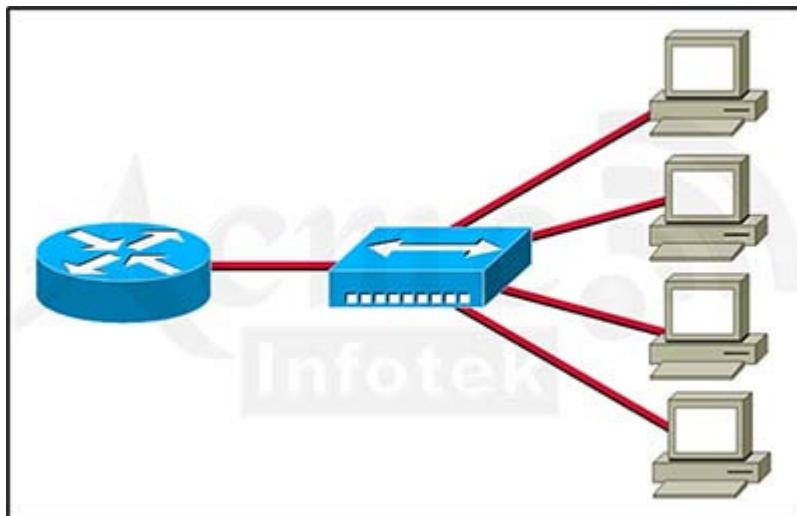
Explanation/Reference:

Host A and the Server are on different subnets and are separated by routers, so the MAC address of the Server will never get back to Host A: the router will decapsulate the frames that the Server sends. The router will re-encapsulate the packets from the Server and put its own MAC address on the outbound interface (e0) in the frames. Host A will see the MAC address of router interface e0.

QUESTION 12

Refer to the exhibit.

What two results would occur if the hub were to be replaced with a switch that is configured with one Ethernet VLAN? (Choose two.)



- A. The number of broadcast domains would remain the same.
- B. The number of collision domains would increase.
- C. The number of collision domains would decrease.
- D. The number of broadcast domains would decrease.
- E. The number of collision domains would remain the same.
- F. The number of broadcast domains would increase.

Correct Answer: AB

Section: Introduction

Explanation

Explanation/Reference:

Only routers create broadcast domains, so the number of broadcast domains will be unchanged. A hub is a single collision domain, whereas each port on a switch is its own collision domain. Therefore, by adding a switch the number of collision domains will increase.

QUESTION 13

Which three statements accurately describe Layer 2 Ethernet switches? (Choose three)

- A. Microsegmentation decreases the number of collisions on the network.
- B. If a switch receives a frame for an unknown destination, it uses ARP to resolve the address.
- C. Spanning Tree Protocol allows switches to automatically share VLAN information.
- D. In a properly functioning network with redundant switched paths, each switched segment will contain one root bridge with all its ports in the forwarding state. All other switches in that broadcast domain will have only one root port.

- E. Establishing VLANs increases the number of broadcast domains.
- F. Switches that are configured with VLANs make forwarding decisions based on both layer 2 and layer 3 address information.

Correct Answer: ADE

Section: Switching

Explanation

Explanation/Reference:

Switches have a collision domain (a segment) on each port. This microsegmentation greatly reduces the number of devices per segment and decreases collisions (A). Switches only operate at Layer 2, so ARP is not used (rules out both B and F). Spanning Tree has nothing to do with VLANs. Each VLAN is a separate broadcast domain, so establishing VLANs adds more broadcast domains (E).

QUESTION 14

Where does routing occur within the DoD TCP/IP reference model?

- A. application
- B. internet
- C. network
- D. transport

Correct Answer: B

Section: TCP/IP

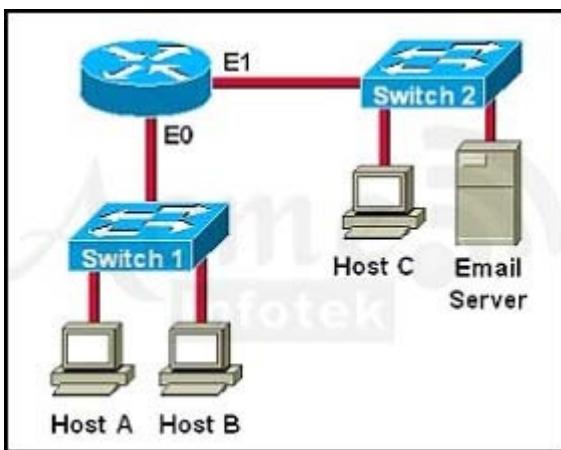
Explanation

Explanation/Reference:

In the OSI reference model, routing occurs at Layer 3, i.e. the network layer. However, the question isn't asking about OSI, it's asking about the **DoD TCP/IP model!** In this model, the internet layer does routing.

QUESTION 15

Which destination addresses will be used by Host A to send data to Host C? (Choose two.)



- A. the IP address of Switch 1
- B. the MAC address of Switch 1
- C. the IP address of Host C
- D. the MAC address of Host C
- E. the IP address of the router's E0 interface
- F. the MAC address of the router's E0 interface

Correct Answer: CF

Section: IP Routing

Explanation

Explanation/Reference:

Host A has to get packets to the router to get them out of the LAN and to another network. This means that the router will decapsulate the frame carrying the packet, and re-encapsulate it when the packet is retransmitted. So, the frame that Host A sends has to have the MAC address of the router's E0 interface, not Host C's MAC address. But the IP address remains unchanged across decap/encap, so the destination IP address will be Host C's IP address.

Remember: MAC addresses are used to deliver frames within a link/subnet, but routers discard them. IP addresses are used to deliver packets across multiple links/subnets.

QUESTION 16

For what two purposes does the Ethernet protocol use physical addresses? (Choose two.)

- A. to uniquely identify devices at Layer 2
- B. to allow communication with devices on a different network
- C. to differentiate a Layer 2 frame from a Layer 3 packet
- D. to establish a priority system to determine which device gets to transmit first
- E. to allow communication between different devices on the same network
- F. to allow detection of a remote device when its physical address is unknown

Correct Answer: AE

Section: Introduction

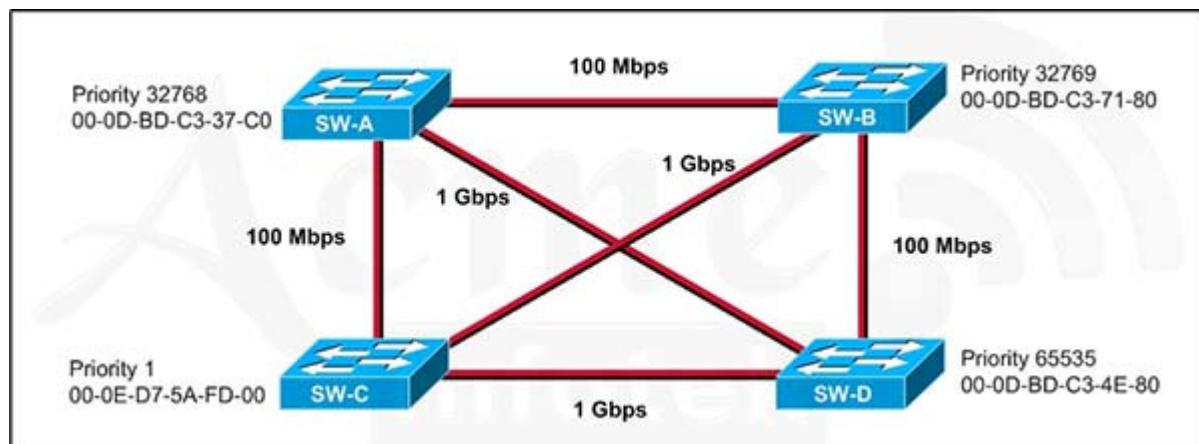
Explanation

Explanation/Reference:

Physical addresses (also known as link or MAC addresses) identify devices at layer 2 (A). They can be used to deliver frames between different devices on the same link (subnet, network) (E). To cross different links/subnets, we use layer 3 addresses.

QUESTION 17

Refer to the exhibit.



Based on the information given, which switch will be elected root bridge and why?

- A. Switch A, because it has the lowest MAC address
- B. Switch A, because it is the most centrally located switch
- C. Switch B, because it has the highest MAC address

- D. Switch C, because it is the most centrally located switch
- E. Switch C, because it has the lowest priority
- F. Switch D, because it has the highest priority

Correct Answer: E

Section: Switching

Explanation

Explanation/Reference:

Root switches are elected on the lowest priority. If two switches have the same priority, then the one with the lowest MAC address is chosen. Here, Switch C has the lowest priority and will be elected as root switch.

QUESTION 18

What value is primarily used to determine which port becomes the root port on each nonroot switch in a spanning-tree topology?

- A. port priority number and MAC address
- B. lowest port MAC address
- C. path cost
- D. VTP revision number
- E. highest port priority number

Correct Answer: C

Section: Switching

Explanation

Explanation/Reference:

We want the root port on a switch to be the one closest to the root switch in the spanning tree. Therefore, it must be the one with the lowest path cost back to the root switch.

QUESTION 19

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 forward the data to its default gateway.
- C. Switch-1 will flood the data out all of its ports except the port from which the data originated.

- D. Switch-1 will send an ARP request out all its ports except the port from which the data originated.

Correct Answer: C

Section: Switching

Explanation

Explanation/Reference:

The switch has to try to deliver the frame, but it doesn't know in which direction the host is. In this situation, the switch sends the frame out on all ports (except the one which received the frame) in the hope that the frame will eventually get received. If and when that host replies, the reply frame will come into the switch, and the switch will take the (now) source MAC address of 00b0.d056.efa4 and add it to the switching table.

QUESTION 20

What is the function of the command switchport trunk native vlan 999 on a Cisco Catalyst switch?

- A. It designates VLAN 999 for untagged traffic.
- B. It blocks VLAN 999 traffic from passing on the trunk
- C. It creates a VLAN 999 interface.
- D. It designates VLAN 999 as the default for all unknown tagged traffic.

Correct Answer: A

Section: VLAN

Explanation

Explanation/Reference:

QUESTION 21

Which two protocols are used by bridges and/or switches to prevent loops in a layer 2 network? (Choose two.)

- A. 802.1d
- B. VTP
- C. 802.1q
- D. STP
- E. SAP

Correct Answer: AD

Section: Switching

Explanation

Explanation/Reference:

The Spanning Tree Protocol (STP) is used to prevent layer 2 loops, and this is standardised as the IEEE 802.1d standard.

QUESTION 22

Which switch would STP choose to become the root bridge in the selection process?

- A. 32768: 11-22-33-44-55-66
- B. 32768: 22-33-44-55-66-77
- C. 32769: 11-22-33-44-55-65
- D. 32769: 22-33-44-55-66-78

Correct Answer: A

Section: Switching

Explanation

Explanation/Reference:

Root switches are elected on the lowest priority. If two switches have the same priority, then the one with the lowest MAC address is chosen. Out of the four choices here, A and B have the lowest priority, and A has the lowest MAC address, so A is chosen.

QUESTION 23

A switch is configured with all ports assigned to VLAN 2. In addition, all ports are configured as full-duplex FastEthernet.

What is the effect of adding switch ports to a new VLAN on this switch?

- A. The additions will create more collisions domains.
- B. An additional broadcast domain will be created.
- C. More bandwidth will be required than was needed previously.
- D. IP address utilization will be more efficient.

Correct Answer: B**Section:** VLAN**Explanation****Explanation/Reference:**

We have the same number of ports on the switch, and each port is its own collision domain, so the number of collision domains remains unchanged. However, each VLAN is its own broadcast domain, so the number of broadcast domains will increase (B).

QUESTION 24

What are three benefits of implementing VLANs? (Choose three)

- A. A more efficient use of bandwidth can be achieved allowing many physical groups to use the same network infrastructure
- B. Broadcast storms can be mitigated by decreasing the number of broadcast domains, thus increasing their size.
- C. A higher level of network security can be reached by separating sensitive data traffic from other network traffic.
- D. Port-based VLANs increase switch-port use efficiency, thanks to 802.1Q trunks
- E. A more efficient use of bandwidth can be achieved allowing many logical networks to use the same network infrastructure.
- F. Broadcast storms can be mitigated by increasing the number of broadcast domains, thus reducing their size.
- G. VLANs make it easier for IT staff to configure new logical groups, because the VLANs all belong to the same broadcast domain.

Correct Answer: CEF**Section:** VLAN**Explanation****Explanation/Reference:**

Each VLAN is its own broadcast domain (rules out G), so the number of broadcast domains will increase (rules out B, confirms F). Traffic cannot cross between VLANs without a router (where we can put ACLs), so network security is increased (C).

QUESTION 25

Which IEEE standard protocol is initiated as a result of successful DTP completion in a switch over Fast Ethernet?

- A. 802.3ad

- B. 802.1w
- C. 802.1Q
- D. 802.1d

Correct Answer: C

Section: VLAN

Explanation

Explanation/Reference:

QUESTION 26

Which of the following are benefits of VLANs? (Choose three.)

- A. They increase the size of collision domains.
- B. They allow logical grouping of users by function.
- C. They can enhance network security.
- D. They increase the size of broadcast domains while decreasing the number of collision domains.
- E. They increase the number of broadcast domains while decreasing the size of the broadcast domains.
- F. They simplify switch administration.

Correct Answer: BCE

Section: VLAN

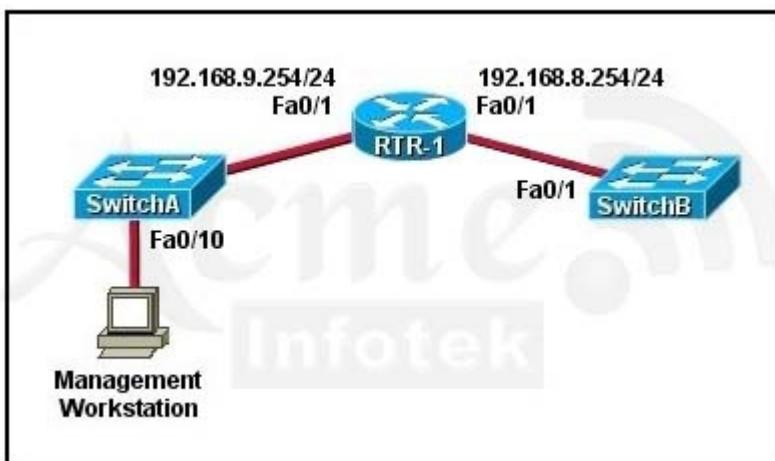
Explanation

Explanation/Reference:

Each VLAN is its own broadcast domain and has nothing to do with collisions (rules out A and D). Adding VLANs without changing the number of stations will increase the number of broadcast domains and make the number of stations in each fewer (E). VLANs make administration more complex (more configuration) which rules out F. Traffic cannot cross between VLANs without a router (where we can put ACLs), so network security is increased (C). VLANs do allow logical grouping of users by function (B).

QUESTION 27

Refer to the exhibit.



A technician has installed SwitchB and needs to configure it for remote access from the management workstation connected to SwitchA.

Which set of commands is required to accomplish this task?

- A. SwitchB(config)# ip default-gateway 192.168.8.254

- ```

SwitchB(config)# interface vlan 1
SwitchB(config-if)# ip address 192.168.8.252 255.255.255.0
SwitchB(config-if)# no shutdown

```
- B. SwitchB(config)# ip default-network 192.168.8.254  
 SwitchB(config)# interface vlan 1  
 SwitchB(config-if)# ip address 192.168.8.252 255.255.255.0  
 SwitchB(config-if)# no shutdown
- C. SwitchB(config)# interface vlan 1  
 SwitchB(config-if)# ip address 192.168.8.252 255.255.255.0  
 SwitchB(config-if )# ip default-gateway 192.168.8.254 255.255.255.0  
 SwitchB(config-if)# no shutdown
- D. SwitchB(config)# ip router 192.168.8.254 255.255.255.0  
 SwitchB(config-if)# interface FastEthernet 0/1  
 SwitchB(config-if )# ip default-gateway 192.168.8.254 255.255.255.0  
 SwitchB(config-if)# no shutdown
- E. SwitchB(config-if)# interface FastEthernet 0/1  
 SwitchB(config-if )# ip default-gateway 192.168.8.252 255.255.255.0  
 SwitchB(config-if)# no shutdown

**Correct Answer:** A

**Section:** Switching

**Explanation**

**Explanation/Reference:**

#### **QUESTION 28**

In an Ethernet network, under what two scenarios can devices transmit? (Choose two.)

- A. when they receive a special token
- B. when there is a carrier
- C. when they detect no other devices are sending
- D. when the medium is idle
- E. when the server grants access

**Correct Answer:** CD

**Section:** Introduction

**Explanation**

**Explanation/Reference:**

Ethernet devices don't use tokens (rules out A). They can only transmit when there is no carrier (rules out B) medium is idle and no other device is transmitting (C and D). There is no server required to grant access (rules out E).

#### **QUESTION 29**

Which two states are the port states when RSTP has converged? (Choose two)

- A. blocking
- B. learning
- C. disabled
- D. forwarding
- E. listening

**Correct Answer:** AD

**Section:** Switching

**Explanation**

**Explanation/Reference:**

Once Spanning Tree converges, switch ports are either blocked or forwarding frames.

**QUESTION 30**

Which two commands can be used to verify a trunk link configuration status on a given Cisco switch? (Choose two)

- A. show interface
- B. show interface trunk
- C. show interface switchport
- D. show ip interface brief
- E. show interfaces vlan

**Correct Answer:** BC

**Section:** VLAN

**Explanation**

**Explanation/Reference:****QUESTION 31**

Which command enables RSTP on a switch?

- A. spanning tree backbonefast
- B. spanning-tree mode rapid-pvst
- C. spanning-tree mode mst
- D. spanning-tree uplinkfast

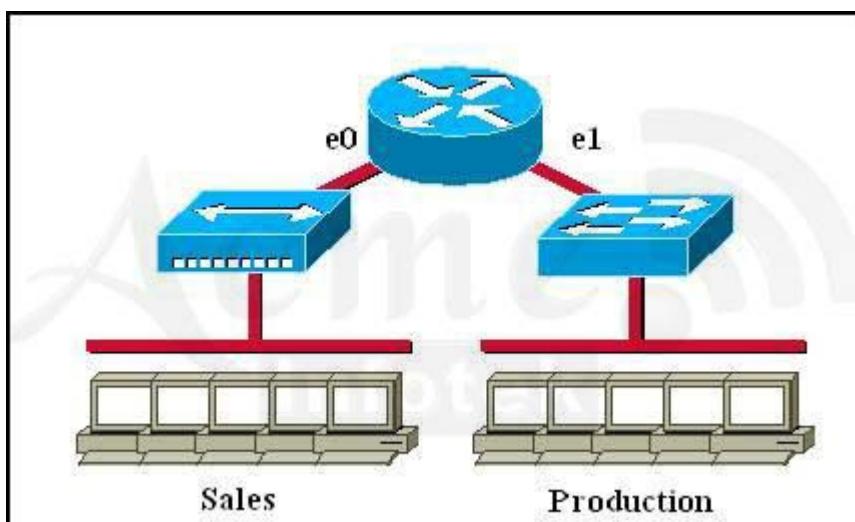
**Correct Answer:** B

**Section:** Switching

**Explanation**

**Explanation/Reference:****QUESTION 32**

Which of the following statements describe the network shown in the graphic? (Choose two.)



What are the proper statements?. (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.

**Correct Answer:** AF

**Section:** Introduction

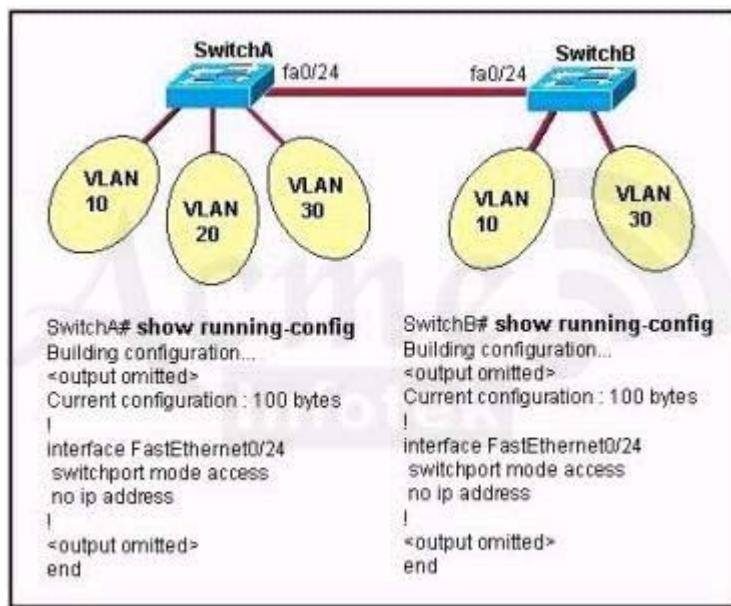
**Explanation**

**Explanation/Reference:**

Each side of a router is its own broadcast domain (routers separate broadcast domains), so there are two broadcast domains (A). All sides of a hub are the one collision domains, but each side of a switch is its own collision domain. Thus, the number of collision domains are 1 (around the hub), 1 (between switch and router) plus the 5 collision domains on the cables out to the five PCs: seven in total (F).

### QUESTION 33

Refer to the Exhibit.



All switch ports are assigned to the correct VLANs, but none of the hosts connected to SwitchA can communicate with hosts in the same VLAN connected to SwitchB.

Based on the output shown, what is the most likely problem?

- A. The access link needs to be configured in multiple VLANs.
- B. The link between the switches is configured in the wrong VLAN.
- C. The link between the switches needs to be configured as a trunk.
- D. VTP is not configured to carry VLAN information between the switches.
- E. Switch IP addresses must be configured in order for traffic to be forwarded between the switches.

**Correct Answer:** C

**Section:** VLAN

## **Explanation**

### **Explanation/Reference:**

To ensure VLANs can span multiple switches, the links between the switches must be configured as trunk links so they can carry tagged frames for all of the VLANs.

## **QUESTION 34**

What is the function of the command switchport trunk native vlan 999 on a trunk port?

- A. It designates VLAN 999 for untagged traffic.
- B. It blocks VLAN 999 traffic from passing on the trunk.
- C. It creates a VLAN 999 interface.
- D. It designates VLAN 999 as the default for all unknown tagged traffic.

**Correct Answer:** A

**Section:** VLAN

**Explanation**

### **Explanation/Reference:**

## **QUESTION 35**

Refer to the exhibit.

Given the output shown from this Cisco Catalyst 2950, what is the most likely reason that interface FastEthernet 0/10 is not the root port for VLAN 2?

```
Switch#show spanning-tree interface fastethernet0/10
Vlan Role Sts Cost Prio.Nbr Type
----- -----
VLAN0001 Root FWD 19 128.1 P2p
VLAN0002 Altn FWD 19 128.1 P2p
VLAN0003 Root FWD 19 128.1 P2p
```

- A. This switch has more than one interface connected to the root network segment in VLAN 2.
- B. This switch is running RSTP while the elected designated switch is running 802.1d Spanning Tree.
- C. This switch interface has a higher path cost to the root bridge than another in the topology.
- D. This switch has a lower bridge ID for VLAN 2 than the elected designated switch.

**Correct Answer:** C

**Section:** Switching

**Explanation**

### **Explanation/Reference:**

## **QUESTION 36**

Why will a switch never learn a broadcast address?

- A. Broadcast frames are never sent to switches.
- B. Broadcast addresses use an incorrect format for the switching table.

- C. A broadcast address will never be the source address of a frame.
- D. Broadcasts only use network layer addressing.
- E. A broadcast frame is never forwarded by a switch.

**Correct Answer:** C

**Section:** Switching

**Explanation**

**Explanation/Reference:**

Switches only put source MAC addresses into their switching table: they want to know from which direction a frame came from, so they can send frames back in that direction as required. The broadcast address is never the source address, so switches will never put the broadcast address into their switching tables.

### QUESTION 37

Refer to the exhibit. Why has this switch not been elected the root bridge for VLAN1?

```
Switch# show spanning-tree vlan 1
VLAN0001
 Spanning tree enabled protocol rstp
 Root ID Priority 20481
 Address 0008.217a.5800
 Cost 38
 Port 1 (FastEthernet0/1)
 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

 Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
 Address 0008.205e.6600
 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
 Aging Time 300

 Interface Role Sts Cost Prio.Nbr Type
 ----- -----
 Fa0/1 Root FWD 19 128.1 P2p
 Fa0/4 Desg FWD 38 128.1 P2p
 Fa0/11 Altn BLK 57 128.1 P2p
 Fa0/13 Desg FWD 38 128.1 P2p
```

- A. It has more than one interface that is connected to the root network segment.
- B. It is running RSTP while the elected root bridge is running 802.1 d spanning tree.
- C. It has a higher MAC address than the elected root bridge.
- D. It has a higher bridge ID than the elected root bridge.

**Correct Answer:** D

**Section:** Switching

**Explanation**

**Explanation/Reference:**

### QUESTION 38

Which two link protocols are used to carry multiple VLANs over a single link? (Choose two.)

- A. VTP
- B. 802.1q

- C. IGP
- D. isl
- E. 802.3u

**Correct Answer:** BD

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

The two standards for carrying tagged VLAN traffic across single (trunk) links are 802.1q and ISL.

**QUESTION 39**

Assuming the default switch configuration, which VLAN range can be added, modified, and removed on a Cisco switch?

- A. 1 through 1002
- B. 2 through 1001
- C. 1 through 1001
- D. 2 through 1005

**Correct Answer:** B

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

**QUESTION 40**

Which statement about VLAN operation on Cisco Catalyst switches is true?

- A. When a packet is received from an 802.1Q trunk, the VLAN id can be determined from the source MAC address table.
- B. Unknown unicast frames are retransmitted only to the ports that belong to the same VLAN.
- C. Ports between switches should be configured in access mode so that VLANs can span across the ports.
- D. Broadcast and multicast frames are retransmitted to ports that are configured on different VLAN.

**Correct Answer:** B

**Section:** VLAN

**Explanation**

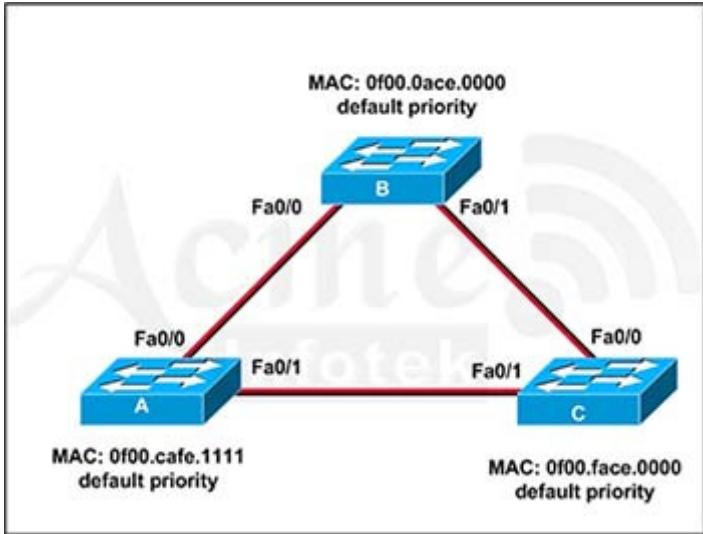
**Explanation/Reference:**

VLANs are separate broadcast domains, so broadcasts and multicasts never cross between them (rules out D). Ports between switches need to be configured as trunk ports (rules out C). The VLAN id of a frame arriving on an 802.1q trunk port is determined by the VLAN id in the tag, not by the source MAC address (rules out A). Unicast frames are only retransmitted on ports that belong to the same VLAN (B).

**QUESTION 41**

Refer to the topology shown in the exhibit.

Which ports will be STP designated ports if all the links are operating at the same bandwidth? (Choose three.)



- A. Switch A - Fa0/0
- B. Switch A - Fa0/1
- C. Switch B - Fa0/0
- D. Switch B - Fa0/1
- E. Switch C - Fa0/0
- F. Switch C - Fa0/1

**Correct Answer:** BCD

**Section:** VLAN

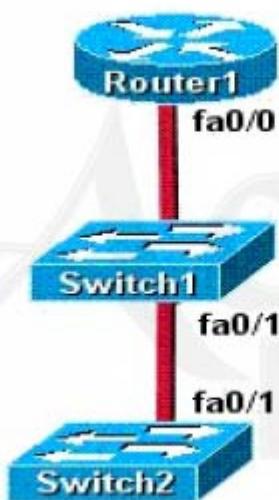
**Explanation**

**Explanation/Reference:**

#### QUESTION 42

Refer to the exhibit.

How should the FastEthernet0/1 ports on the 2950 model switches that are shown in the exhibit be configured to allow connectivity between all devices?



### **Router1**

**fa 0/0.1 192.168.1.1/24 VLAN 1**  
**fa 0/0.10 192.168.10.1/24 VLAN 10**  
**fa 0/0.20 192.168.20.1/24 VLAN 20**

### **Switch1**

**IP address: 192.168.1.2/24**  
**Ports 3-12 VLAN 10**  
**Ports 13-24 VLAN 20**

### **Switch2**

**IP address: 192.168.1.3/24**  
**Ports 2-12 VLAN 10**  
**Ports 13-24 VLAN 20**

- A. The ports only need to be connected by a crossover cable.
- B. SwitchX(config)# interface fastethernet 0/1  
SwitchX(config-if)# switchport mode trunk
- C. SwitchX(config)# interface fastethernet 0/1  
SwitchX(config-if)#switchport mode access  
SwitchX(config-if)#switchport access vlan 1
- D. SwitchX(config)#interface fastethernet 0/1  
SwitchX(config-if)#switchport mode trunk  
SwitchX(config-if)#switchport trunk vlan 1  
SwitchX(config-if)#switchport trunk vlan 10  
SwitchX(config-if)#switchport trunk vlan 20

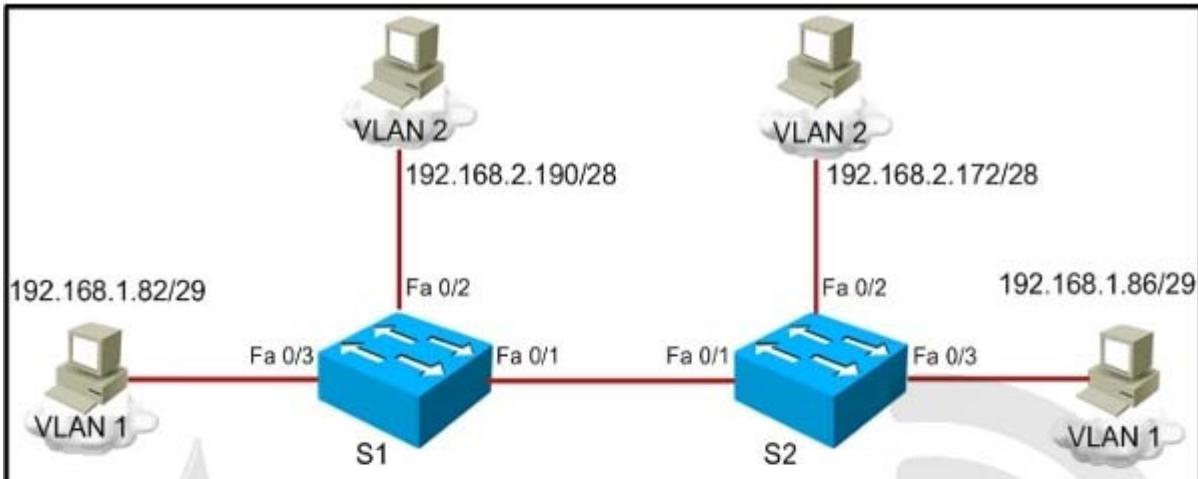
**Correct Answer:** B

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

**QUESTION 43**



```
S1#show interface trunk
Port Mode Encapsulation Status Native vlan
Fa0/1 on 802.1q trunking 1

Port Vlans allowed on trunk
Fa0/1 1-1005

Port Vlans allowed and active in management domain
Fa0/1 1,2
```

```
S2#show interface trunk
Port Mode Encapsulation Status Native vlan
Fa0/1 on 802.1q trunking 2

Port Vlans allowed on trunk
Fa0/1 1-1005

Port Vlans allowed and active in management domain
Fa0/1 1,2
```

A frame on VLAN 1 on switch S1 is sent to switch S2 when the frame is received on VLAN 2. What causes this behavior?

- A. Trunk mode mismatches
- B. VLANs that do not correspond to a unique IP subnet
- C. Native VLAN mismatches
- D. allowing only VLAN 2 on the destination.

**Correct Answer: C**

**Section: VLAN**

**Explanation**

**Explanation/Reference:**

#### QUESTION 44

Which three statements about RSTP are true? (Choose Three)

- A. RSTP port states are blocking, discarding, learning, or forwarding.
- B. RSTP expands the STP port roles by adding the alternate and backup roles.
- C. RSTP significantly reduces topology reconverging time after a link failure.
- D. RSTP also uses the STP proposal-agreement sequence.
- E. RSTP uses the same timer-based process as STP on point to point links.
- F. RSTP provides a faster transition to the forwarding state on point-to-point links than STP does.

**Correct Answer:** BCF

**Section:** Switching

**Explanation**

**Explanation/Reference:**

**QUESTION 45**

At which layer of the OSI model is RSTP used to prevent loops?

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

**Correct Answer:** A

**Section:** Switching

**Explanation**

**Explanation/Reference:**

RSTP deals with loops caused by redundant links in Ethernet networks, so this is the data link layer.

**QUESTION 46**

What does a Layer 2 switch use to decide where to forward a received frame?

- A. source MAC address
- B. source IP address
- C. source switch port
- D. destination IP address
- E. destination port address
- F. destination MAC address

**Correct Answer:** F

**Section:** Switching

**Explanation**

**Explanation/Reference:**

The switch looks at the destination MAC address in the frame. It consults its switching table. If that MAC address is in the table, the switch sends the frame out the corresponding port which is associated with that MAC address in the table. Otherwise, the switch floods the frame out all ports except the one on which the frame arrived.

**QUESTION 47**

Refer to the exhibit. Which statement is true?

```

SwitchA# show spanning-tree vlan 20

VLAN0020
 Spanning tree enabled protocol rstp
 Root ID Priority 24596
 Address 0017.596d.2a00
 Cost 38
 Port 11 (FastEthernet0/10)
 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

 Bridge ID Priority 28692 (priority 28672 sys-id-ext 1)
 Address 0017.596d.1580
 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
 Aging Time 300

 Interface Role Sts Cost Prio.Nbr Type
 ----- ---- -- -- ----.--- --
 Fa0/11 Root FWD 19 128.11 P2p
 Fa0/12 Altn BLK 19 128.12 P2p

```

- A. The Fa0/11 role confirms that SwitchA is the root bridge for VLAN 20.
- B. VLAN 20 is running the Per VLAN Spanning Tree Protocol.
- C. The MAC address of the root bridge is 0017.596d.1580.
- D. SwitchA is not the root bridge, because not all of the interface roles are designated.

**Correct Answer:** D

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

#### QUESTION 48

Which two benefits are provided by creating VLANs? (Choose two.)

- A. added security
- B. dedicated bandwidth
- C. provides segmentation
- D. allows switches to route traffic between subinterfaces
- E. contains collisions

**Correct Answer:** AC

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

#### QUESTION 49

Which command can be used from a PC to verify the connectivity between hosts that connect through a switch in the same LAN?

- A. ping address
- B. tracert address

- C. traceroute address
- D. arp address

**Correct Answer: A**

**Section: IP Addressing / VLSM**

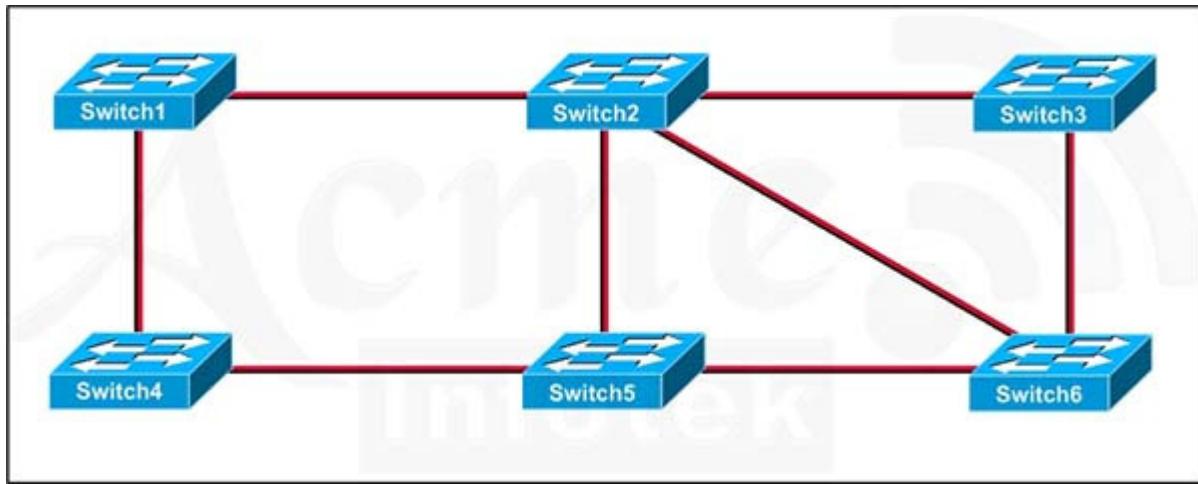
**Explanation**

**Explanation/Reference:**

In the same LAN means that we don't need to cross through a router, while rules out any traceroute command (B, C). The arp command only shows if we have previously received a frame from that address, not if connectivity is still OK, so not D. We need the ping command to send an ICMP packet to the host and receive a reply for it.

#### **QUESTION 50**

Refer to Exhibit:



Based on the network shown in the graphic, which option contains both the potential networking problem and the protocol or setting that should be used to prevent the problem?

- A. routing loops, hold down timers
- B. switching loops, split horizon
- C. routing loops, split horizon
- D. switching loops, VTP
- E. routing loops, STP
- F. switching loops, STP

**Correct Answer: F**

**Section: Switching**

**Explanation**

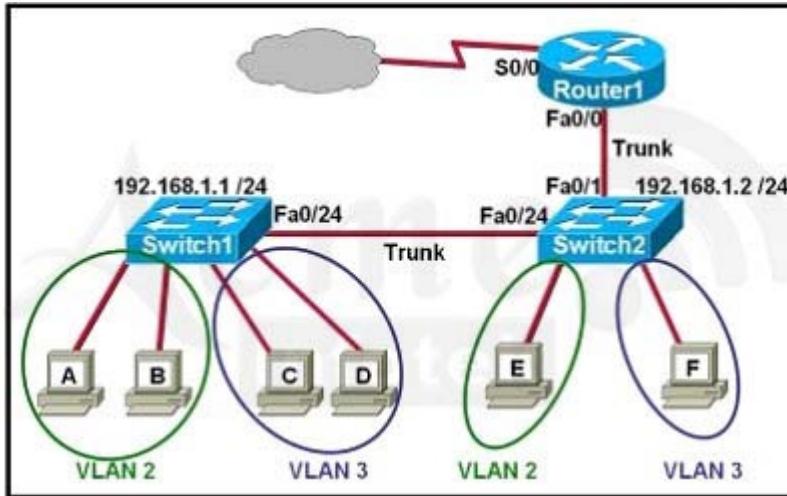
**Explanation/Reference:**

There are no routers, so no routing loops. We do have redundant links between switches, so we have switching loops. The Spanning Tree Protocol (STP) prevents loops by disabling frame forwarding on some of the switches' ports.

#### **QUESTION 51**

Refer to the exhibit.

Which two statements are true about interVLAN routing in the topology that is shown in the exhibit? (Choose two.)



- A. Host E and host F use the same IP gateway address.
- B. Router1 and Switch2 should be connected via a crossover cable.
- C. Router1 will not play a role in communications between host A and host D.
- D. The FastEthernet 0/0 interface on Router1 must be configured with subinterfaces.
- E. Router1 needs more LAN interfaces to accommodate the VLANs that are shown in the exhibit.
- F. The FastEthernet 0/0 interface on Router1 and Switch2 trunk ports must be configured using the same encapsulation type.

**Correct Answer:** DF

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

Each VLAN is its own broadcast domain, hence its own subnet. We need the router to route packets between subnets. However, the router is only connected to Switch 2 with a single cable. Therefore, for the router to be a member of all VLANs (so as to route packets between them), it needs a trunk line to Switch2 as shown. But this means that the single interface must have multiple IP addresses, and this can only occur when that interface has sub-interfaces, each one with its own IP address (D). And if the line between the router and switch is a trunk line, it must be configured using the same trunk protocol, 802.1q or ISL.

**QUESTION 52**

Which two of these are characteristics of the 802.1Q protocol? (Choose two.)

- A. It modifies the 802.3 frame header, and thus requires that the FCS be recomputed.
- B. It is used exclusively for tagging VLAN frames and does not address network reconvergence following switched network topology changes.
- C. It is a Layer 2 messaging protocol which maintains VLAN configurations across networks.
- D. It is a trunking protocol capable of carrying untagged frames.
- E. It includes an 8-bit field which specifies the priority of a frame.

**Correct Answer:** AD

**Section:** Switching

**Explanation**

**Explanation/Reference:**

802.1q inserts a new section into the frame header which holds the 12-bit VLAN id for the frame and a 3-bit priority value (thus, not E). Thus, the frame's contents are changed, and the FCS checksum must be recalculated (A). It also includes MSTP to perform Spanning Tree across multiple VLANs (rules out B). Frames belonging to the native VLAN do not carry VLAN tags when sent over the trunk. Conversely, if an untagged

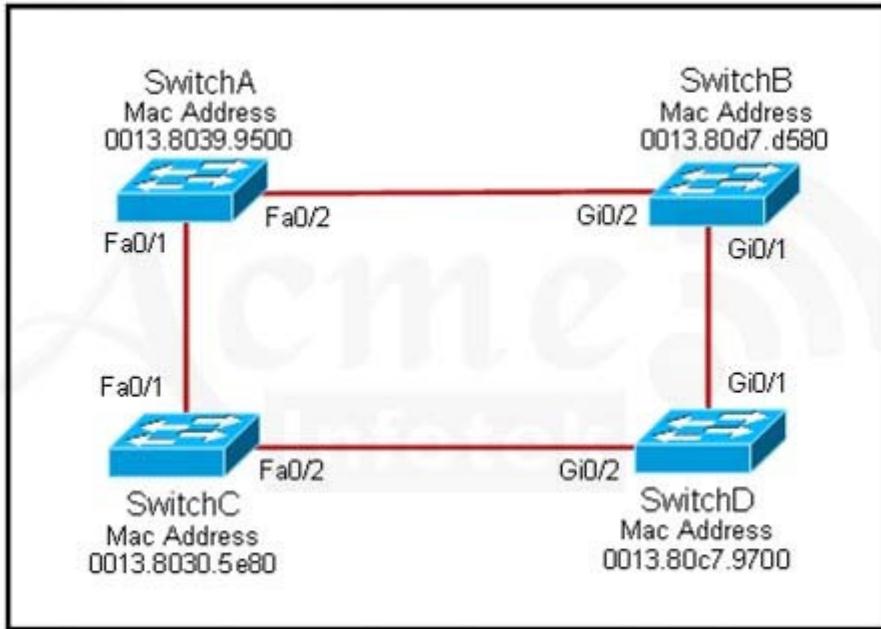
frame is received on a trunk port, the frame is associated with the native VLAN configured on that port (D is true).

### QUESTION 53

Refer to the exhibit.

Each of these four switches has been configured with a hostname, as well as being configured to run RSTP. No other configuration changes have been made.

Which three of these show the correct RSTP port roles for the indicated switches and interfaces? (Choose three.)



- A. SwitchA, Fa0/2, designated
- B. SwitchA, Fa0/1, root
- C. SwitchB, Gi0/2, root
- D. SwitchB, Gi0/1, designated
- E. SwitchC, Fa0/2, root
- F. SwitchD, Gi0/2, root

**Correct Answer:** ABF

**Section:** Switching

**Explanation**

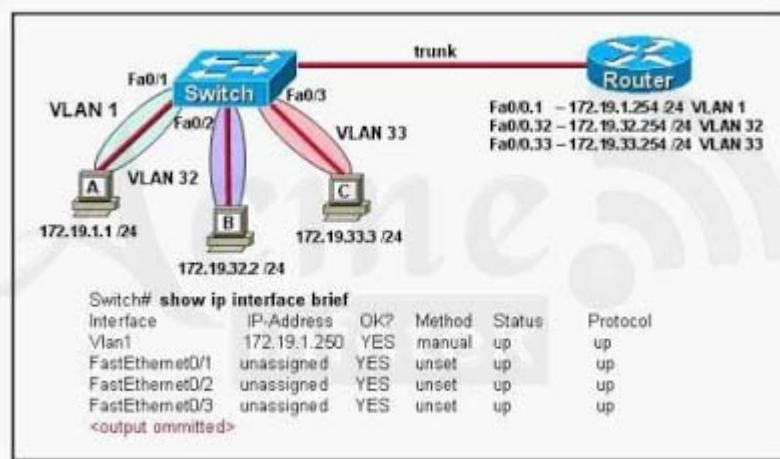
#### Explanation/Reference:

Switch C, with the same default priority as all the switches and with the lowest MAC address, is the root switch. Both of its ports are designated. The closest Switch A port (fa0/1) is the root port (B) and its other port is designated (A). Switch D's gi0/2 port is its root port (F) and the gi0/1 port is designated.

Switch B has to find the lowest path back to the root switch and this is through Switch A (it has a lower MAC address and hence lower bridge-id). So, Switch B's gi0/2 port is the root port, and gi0/1 is blocked.

### QUESTION 54

Refer to the exhibit.



The network administrator normally establishes a Telnet session with the switch from host A. However, host A is unavailable.

The administrator's attempt to telnet to the switch from host B fails, but pings to the other two hosts are successful. What is the issue?

- A. Host B and the switch need to be in the same subnet.
- B. The switch needs an appropriate default gateway assigned.
- C. The switch interface connected to the router is down.
- D. Host B needs to be assigned an IP address in VLAN 1.

**Correct Answer:** B

**Section:** VLAN

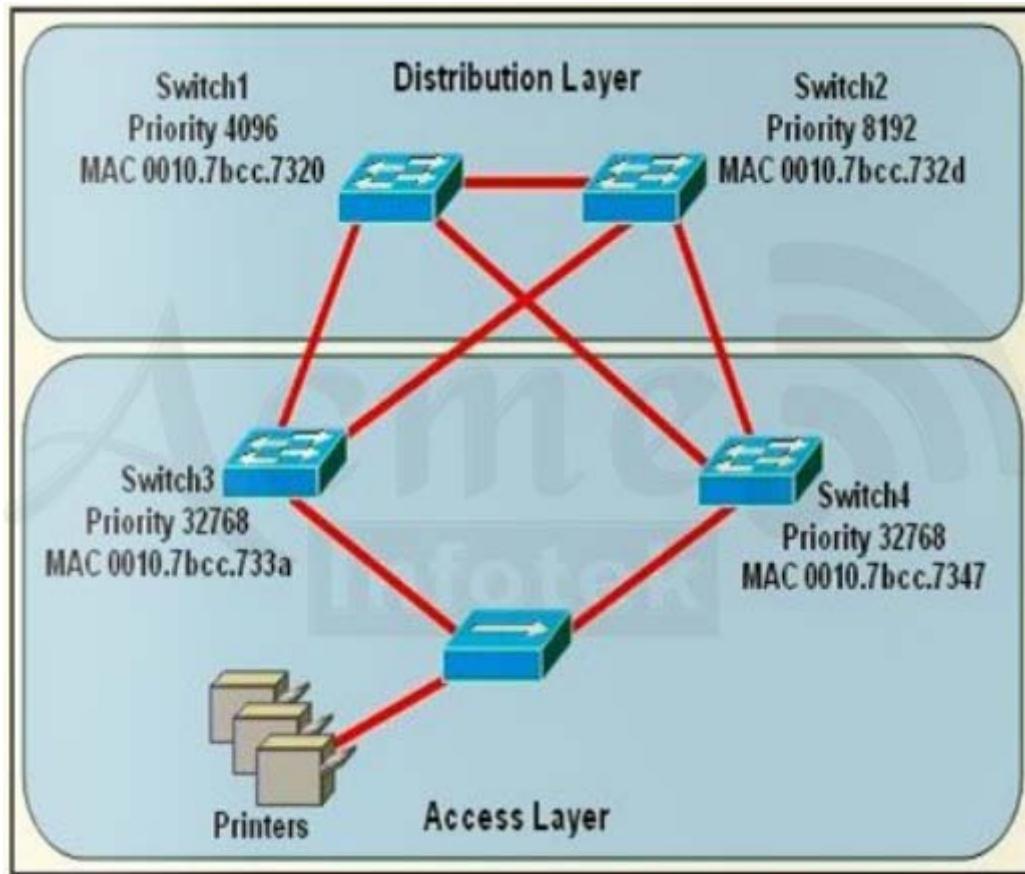
**Explanation**

**Explanation/Reference:**

#### QUESTION 55

Refer to the exhibit.

Which switch provides the spanning-tree designated port role for the network segment that services the printers?



- A. Switch1
- B. Switch2
- C. Switch3
- D. Switch4

**Correct Answer:** C

**Section:** Switching

**Explanation**

**Explanation/Reference:**

Printers are connected by hubs. Decide the switch that provides the spanning-tree designated port role between Switch3 and Switch4.

They have the same priority 32768. Compare their MAC addresses. Switch3 with a smaller MAC address will provide a designated port for printers.

**QUESTION 56**

What is one benefit of PVST+?

- A. PVST+ reduces the CPU cycles for all the switches in the network.
- B. PVST+ automatically selects the root bridge location, to provide optimize.
- C. PVST+ allows the root switch location to be optimized per VLAN.
- D. PVST+ supports Layer 3 load balancing without loops.

**Correct Answer:** C

**Section:** Switching

**Explanation**

**Explanation/Reference:**

**QUESTION 57**

As a network technician, do you know which are valid modes for a switch port used as a VLAN trunk? (Choose three.)

- A. transparent
- B. auto
- C. on
- D. desirable
- E. blocking
- F. forwarding

**Correct Answer:** BCD

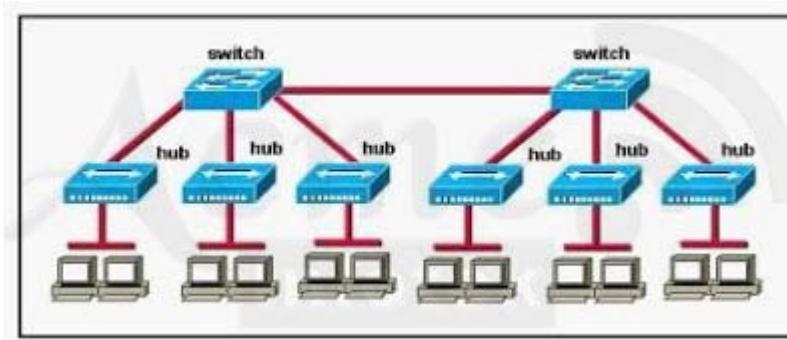
**Section:** VLAN

**Explanation**

**Explanation/Reference:**

**QUESTION 58**

How many broadcast domains are shown in the graphic assuming only the default VLAN is configured on the switches?



- A. one
- B. six
- C. twelve
- D. two

**Correct Answer:** A

**Section:** Introduction

**Explanation**

**Explanation/Reference:**

Routers separate broadcast domains. Hubs and switches extend broadcast domains (if we neglect VLANs). There are no routers in the diagram, so there is only one broadcast domain.

**QUESTION 59**

Which three of these statements regarding 802.1Q trunking are correct? (Choose three.)

- A. 802.1Q native VLAN frames are untagged by default.
- B. 802.1Q trunking ports can also be secure ports.

- C. 802.1Q trunks can use 10 Mb/s Ethernet interfaces.
- D. 802.1Q trunks require full-duplex, point-to-point connectivity.
- E. 802.1Q trunks should have native VLANs that are the same at both ends.

**Correct Answer:** ACE

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

**QUESTION 60**

Refer to the exhibit.

The output that is shown is generated at a switch. Which three of these statements are true? (Choose three.)

```
Switch# show spanning-tree vlan 30
VLAN0030
Spanning tree enabled protocol rstp
Root ID Priority 24606
Address 00d0.047b.2800
This bridge is the root
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Bridge ID Priority 24606 (priority 24576 sys-id-ext 30)
Address 00d0.047b.2800
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Aging Time 300
Interface Role Sts Cost Prio.Nbr Type
----- ----- --- -----
Fa1/1 Desg FWD 4 128.1 p2p
Fa1/2 Desg FWD 4 128.2 p2p
Fa5/1 Desg FWD 4 128.257 p2p
```

- A. All ports will be in a state of discarding, learning, or forwarding.
- B. Thirty VLANs have been configured on this switch.
- C. The bridge priority is lower than the default value for spanning tree.
- D. All interfaces that are shown are on shared media.
- E. All designated ports are in a forwarding state.
- F. This switch must be the root bridge for all VLANs on this switch.

**Correct Answer:** ACE

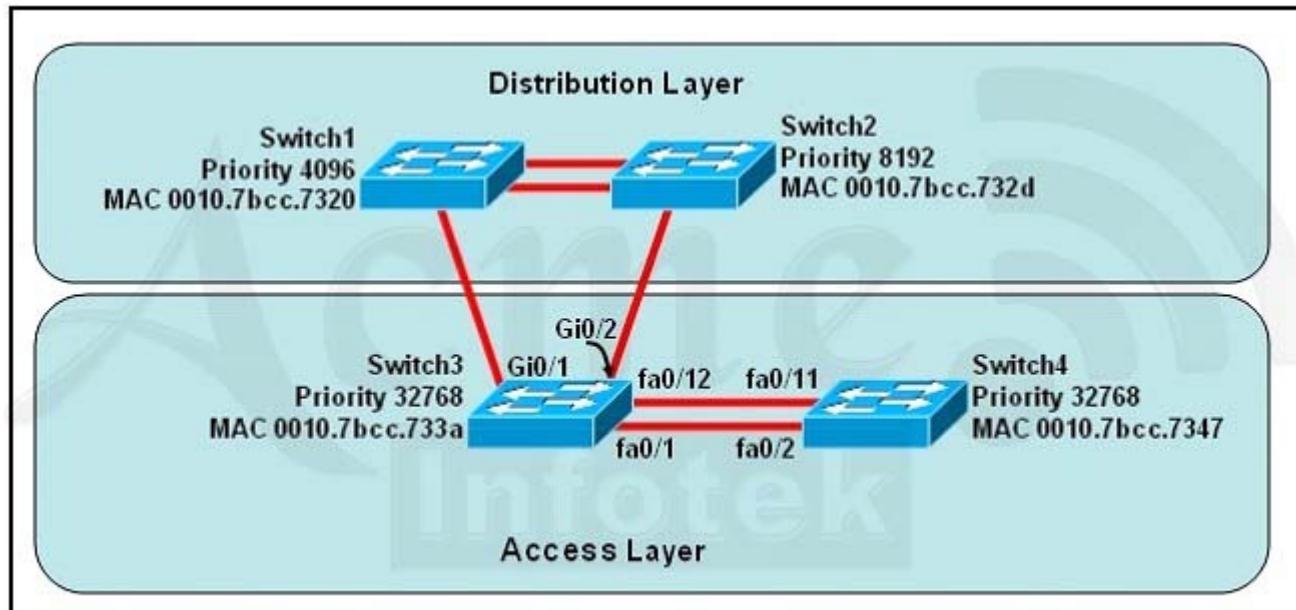
**Section:** VLAN

**Explanation**

**Explanation/Reference:**

**QUESTION 61**

Refer to the exhibit. At the end of an RSTP election process, which access layer switch port will assume the discarding role?



- A. Switch3, port fa0/1
- B. Switch3, port fa0/12
- C. Switch4, port fa0/11
- D. Switch4, port fa0/2
- E. Switch3, port Gi0/1
- F. Switch3, port Gi0/2

**Correct Answer:** C

**Section:** Switching

**Explanation**

**Explanation/Reference:**

#### QUESTION 62

Which term describes a spanning-tree network that has all switch ports in either the blocking or forwarding state?

- A. spanned
- B. converged
- C. provisioned
- D. redundant

**Correct Answer:** B

**Section:** Switching

**Explanation**

**Explanation/Reference:**

The only two states that switch ports in a converged Spanning Tree network can have are blocked or forwarding.

#### QUESTION 63

What are the possible trunking modes for a switch port? (Choose three.)

- A. transparent

- B. auto
- C. on
- D. desirable
- E. client
- F. forwarding

**Correct Answer:** BCD

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

**QUESTION 64**

Which two of these statements regarding RSTP are correct? (Choose two.)

- A. RSTP cannot operate with PVST+.
- B. RSTP defines new port roles.
- C. RSTP defines no new port states.
- D. RSTP is a proprietary implementation of IEEE 802.1D STP.
- E. RSTP is compatible with the original IEEE 802.1D STP.

**Correct Answer:** BE

**Section:** Switching

**Explanation**

**Explanation/Reference:**

**QUESTION 65**

Refer to the exhibit. Which two statements are true of the interfaces on Switch1? (Choose two.)

```

Switch1# show mac-address-table
Dynamic Addresses Count: 19
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 FastEthernet0/5
0010.7b00.1545 Dynamic 2 FastEthernet0/5
0060.5cf4.0076 Dynamic 1 FastEthernet0/1
0060.5cf4.0077 Dynamic 3 FastEthernet0/1
0060.5cf4.1315 Dynamic 1 FastEthernet0/1
0060.70cb.f301 Dynamic 2 FastEthernet0/1
0060.70cb.3f01 Dynamic 5 FastEthernet0/2
00e0.1e42.9978 Dynamic 4 FastEthernet0/1
00e0.1e9f.3900 Dynamic 3 FastEthernet0/1
0060.70cb.33f1 Dynamic 6 FastEthernet0/3
0060.70cb.103f Dynamic 6 FastEthernet0/4

<output omitted>

Switch# show cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
 S - Switch, H - Host, I - IGMP, r - Repeater

Device ID Local Intrfce Holdtime Capability Platform Port ID
Switch2 Fas0/1 157 S 2950-12 Fas 0/1
Switch3 Fas0/2 143 S 2950-12 Fas 0/5

Switch1#

```

- A. Interface FastEthernet0/2 has been disabled.
- B. Multiple devices are connected directly to FastEthernet0/1.
- C. FastEthernet0/1 is configured as a trunk link.
- D. FastEthernet0/1 is connected to a host with multiple network interface cards.
- E. FastEthernet0/5 has statically assigned MAC addresses.
- F. A hub is connected directly to FastEthernet0/5.

**Correct Answer:** CF

**Section:** Switching

**Explanation**

**Explanation/Reference:**

### QUESTION 6

Three switches are connected to one another via trunk ports.

Assuming the default switch configuration, which switch is elected as the root bridge for the spanning-tree instance of VLAN 1?

- A. the switch with the highest MAC address.
- B. the switch with the lowest IP address.
- C. the switch with the lowest MAC address
- D. the switch with the highest IP address.

**Correct Answer:** C

**Section:** Switching

**Explanation**

**Explanation/Reference:**

**QUESTION 67**

What are three advantages of VLANs? (Choose three.)

- A. VLANs establish broadcast domains in switched networks.
- B. VLANs utilize packet filtering to enhance network security.
- C. VLANs provide a method of conserving IP addresses in large networks.
- D. VLANs provide a low-latency internetworking alternative to routed networks.
- E. VLANs allow access to network services based on department, not physical location.
- F. VLANs can greatly simplify adding, moving, or changing hosts on the network.

**Correct Answer:** AEF

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

**QUESTION 68**

Which two benefits are provided by using a hierarchical addressing network addressing scheme? (Choose two.)

- A. reduces routing table entries.
- B. auto-negotiation of media rates.
- C. efficient utilization of MAC addresses.
- D. dedicated communications between devices.
- E. ease of management and troubleshooting.

**Correct Answer:** AE

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

**QUESTION 69**

What is the alternative notation for the IPv6 address B514:82C3:0000:0000:0029:EC7A:0000:EC72?

- A. B514:82C3:0029::EC7A:0000:EC72
- B. B514:82C3:0029:EC7A:EC72
- C. B514:82C3::0029:EC7A:0:EC72
- D. B514:82C3::0029:EC7A:EC72

**Correct Answer:** C

**Section:** IPv6

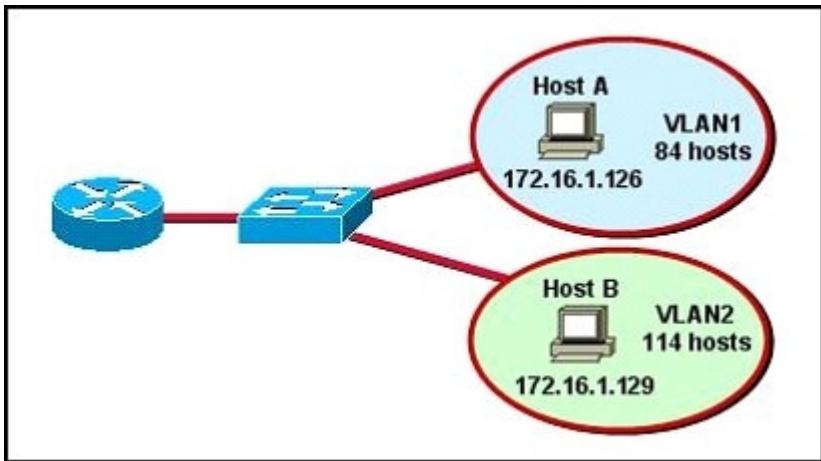
**Explanation**

**Explanation/Reference:**

**QUESTION 70**

Refer to the diagram. All hosts have connectivity with one another.

Which statements describe the addressing scheme that is in use in the network? (Choose three.)



- A. The subnet mask in use is 255.255.255.192.
- B. The subnet mask in use is 255.255.255.128.
- C. The IP address 172.16.1.25 can be assigned to hosts in VLAN1
- D. The IP address 172.16.1.205 can be assigned to hosts in VLAN1
- E. The LAN interface of the router is configured with one IP address.
- F. The LAN interface of the router is configured with multiple IP addresses.

**Correct Answer:** BCF

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

With over 62 hosts in each VLAN, the subnet size for each must be at least /25 which is the same as 255.255.255.128 (B). So the range of VLAN 1 is 172.16.1.0 to 172.16.1.127, and for VLAN 2 it is 172.16.1.128 to 172.16.1.255. This puts the IP address 172.16.1.25 into VLAN 1 (C). The router needs an IP address from each VLAN so it can route packets between them (F).

**QUESTION 71**

Which two descriptions are correct about characteristics of IPv6 unicast addressing? (Choose two.)

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

**Correct Answer:** AD

**Section:** IPv6

**Explanation**

**Explanation/Reference:**

**QUESTION 72**

The network administrator has been asked to give reasons for moving from IPv4 to IPv6. What are two valid reasons for adopting IPv6 over IPv4? (Choose two)

- A. telnet access does not require a password

- B. NAT
- C. no broadcast
- D. change of destination address in the IPv6 header
- E. change of source address in the IPv6 header
- F. autoconfiguration

**Correct Answer:** CF

**Section:** IPv6

**Explanation**

**Explanation/Reference:**

### **QUESTION 73**

An administrator must assign static IP addresses to the servers in a network.

For network 192.168.20.24/29, the router is assigned the first usable host address while the sales server is given the last usable host address.

Which of the following should be entered into the IP properties box for the sales server?

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

**Correct Answer:** C

**Section:** IP Addressing / VLSM

**Explanation**

**Explanation/Reference:**

A /29 network has only 8 IP addresses, of which 6 are usable IP addresses. This means that 192.168.20.24 represents the network, 192.168.20.25 is the first usable IP address, 192.168.20.30 is the last usable IP address and 192.168.20.31 is the broadcast address on the network. Another way to write /29 is 255.255.255.248, so the answer is C.

### **QUESTION 74**

Which subnet mask would be appropriate for a network address range to be subnetted for up to eight LANs, with each LAN containing 5 to 26 hosts?

- A. 0.0.0.240
- B. 255.255.255.252
- C. 255.255.255.0
- D. 255.255.255.224
- E. 255.255.255.240

**Correct Answer:** D

**Section: IP Addressing / VLSM**  
**Explanation**

**Explanation/Reference:**

We need 26 usable IP addresses, so we need subnets with a range of 32 addresses. This is the /27 netmask, or 255.255.255.224.

**QUESTION 75**

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

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

**Correct Answer: D**

**Section: IPv6**  
**Explanation**

**Explanation/Reference:**

**QUESTION 76**

Which three approaches can be used while migrating from an IPv4 addressing scheme to an IPv6 scheme? (choose three)

- A. statically map IPV4 address to IPV6 addresses.
- B. configure IPv4 tunnels between IPv6 islands.
- C. use DHCPv6 to map IPV4 addresses to IPV6 addresses.
- D. use proxying and translation to translate IPV6 packets into IPV4 packets.
- E. configure IPV6 directly.
- F. enable dual-stack routing.

**Correct Answer: BDF**

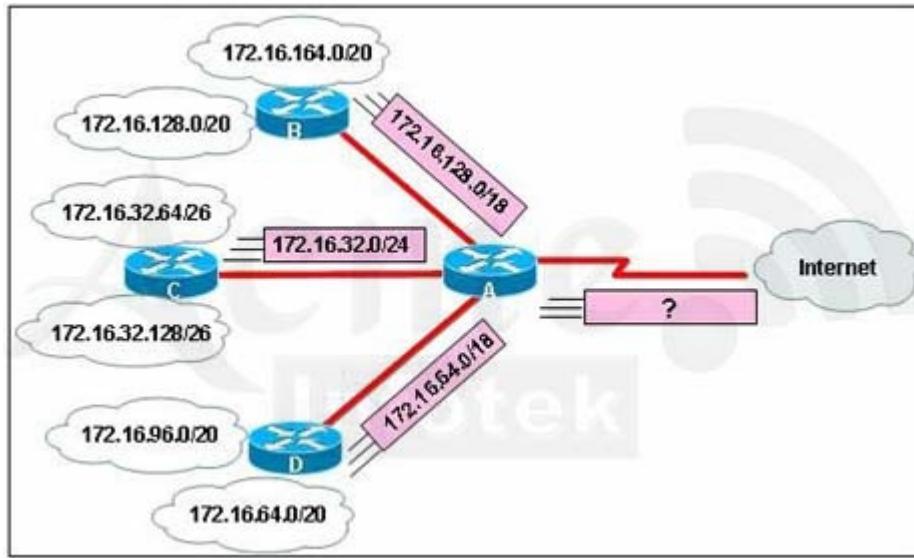
**Section: IPv6**  
**Explanation**

**Explanation/Reference:**

**QUESTION 77**

Refer to the exhibit.

In this VLSM addressing scheme, what summary address would be sent from router A?



- A. 172.16.0.0/16
- B. 172.16.0.0/20
- C. 172.16.0.0/24
- D. 172.32.0.0/16
- E. 172.32.0.0/17
- F. 172.64.0.0/16

**Correct Answer:** A

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

Two adjacent /18s would make a /17, but we also have the /24 to aggregate. The lowest IP address in all the 3 subnets is 172.16.32.0; the highest is 172.16.191.255. The smallest netmask to aggregate this whole range is a /16, and it would have to start at 172.16.0.0 to cover the three smaller subnets.

**QUESTION 78**

How is an EUI-64 format interface ID created from a 48-bit MAC address?

- A. by appending 0xFF to the MAC address.
- B. by prefixing the MAC address with 0xFFFFE.
- C. by prefixing the MAC address with 0xFF and appending 0xFF to it.
- D. by inserting 0xFFFFE between the upper three bytes and the lower three bytes of the MAC address.
- E. by prefixing the MAC address with 0xF and inserting 0xF after each of its first three bytes.

**Correct Answer:** D

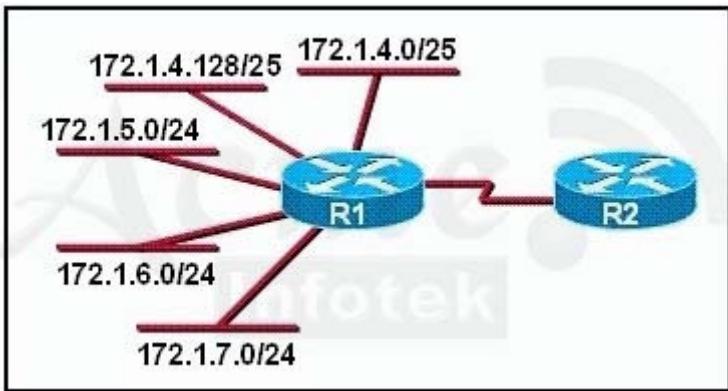
**Section:** IPv6

**Explanation**

**Explanation/Reference:**

**QUESTION 79**

Refer to the exhibit.



What is the most efficient summarization that R1 can use to advertise its networks to R2?

- A. 172.1.4.0/25  
172.1.4.128/25  
172.1.5.0/24  
172.1.6.0/24  
172.1.7.0/24
- B. 172.1.0.0/22
- C. 172.1.4.0/24  
172.1.5.0/24  
172.1.6.0/24  
172.1.7.0/24
- D. 172.1.0.0/21
- E. 172.1.4.0/22

**Correct Answer:** E

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

The top two (4.128/25 and 4.0/25) aggregate into 4.0/25, so now we have four /24 networks. If they are aligned right, we can merge these into a /22. If not we'd need to merge them into a /21. The other three subnets are 5.0/24, 6.0/24, 7.0/24.

That means we start at 4.0 and go up to 5.255, i.e. just below 8.0. So this fits neatly into a /22 as these go up in steps of 4 in the 3rd octet. Yes, we can summarise with a /22 that starts at 172.1.4.0, answer D.

**QUESTION 80**

Which option is a valid IPv6 address?

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

**Correct Answer:** D

**Section:** IPv6

**Explanation**

**Explanation/Reference:**

**QUESTION 81**

Which three are characteristics of an IPv6 anycast address? (Choose three)

- A. one-to-many communication model.
- B. delivery of packets to the group interface that is closest to the sending device.
- C. any-to-many communication model.
- D. a unique IPv6 address for each device in the group.
- E. the same address for multiple devices in the group.
- F. one-to-nearest communication model.

**Correct Answer:** BEF

**Section:** IPv6

**Explanation**

**Explanation/Reference:**

**QUESTION 82**

A national retail chain needs to design an IP addressing scheme to support a nationwide network. The company needs a minimum of 300 sub-networks and a maximum of 50 host addresses per subnet. Working with only one Class B address, which of the following subnet masks will support an appropriate addressing scheme? (Choose two.)

- A. 255.255.255.0
- B. 255.255.255.128
- C. 255.255.252.0
- D. 255.255.255.224
- E. 255.255.255.192
- F. 255.255.248.0

**Correct Answer:** BE

**Section:** IP Addressing / VLSM

**Explanation**

**Explanation/Reference:**

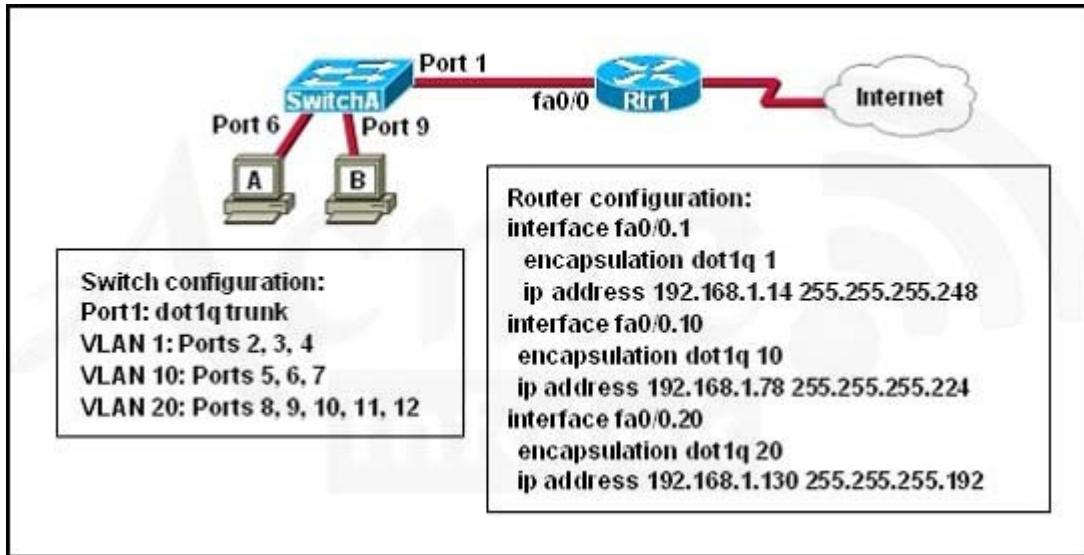
50 hosts per subnet, so we'd need a range of 64 IP addresses which is a /26. This converts to a mask of 255.255.255.192.

**QUESTION 83**

Refer to the exhibit.

A network administrator is adding two new hosts to SwitchA.

Which three values could be used for the configuration of these hosts? (Choose three.)



- A. host A IP address: 192.168.1.79
- B. host A IP address: 192.168.1.64
- C. host A default gateway: 192.168.1.78
- D. host B IP address: 192.168.1.128
- E. host B default gateway: 192.168.1.129
- F. host B IP address: 192.168.1.190

**Correct Answer:** ACF

**Section:** IPv6

**Explanation**

**Explanation/Reference:**

#### QUESTION 84

Which IPv6 address is the all-router multicast group?

- A. FF02::1
- B. FF02::2
- C. FF02::3
- D. FF02::4

**Correct Answer:** B

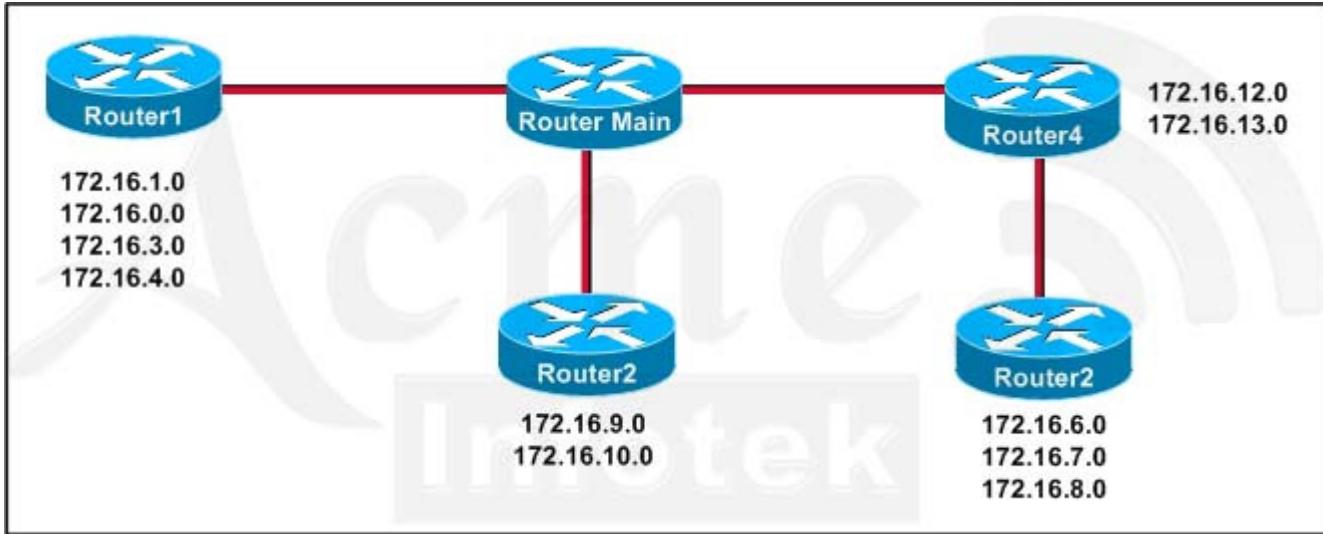
**Section:** IPv6

**Explanation**

**Explanation/Reference:**

#### QUESTION 85

Which address range efficiently summarizes the routing table of the addresses for router main?



- A. 172.16.0.0/18
- B. 172.16.0.0/16
- C. 172.16.0.0/20
- D. 172.16.0.0/21

**Correct Answer:** C

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

#### QUESTION 86

Which IPv6 address is valid?

- A. 2031:0:130F::9C0:876A:130B
- B. 2001:0db8:0:130H::87C:140B
- C. 2001:0db8:0000:130F:0000:0000:08GC:140B
- D. 2031::130F::9C0:876A:130B

**Correct Answer:** A

**Section:** IPv6

**Explanation**

**Explanation/Reference:**

#### QUESTION 87

Which command can you use to manually assign a static IPv6 address to a router interface?

- A. ipv6 address PREFIX\_1::1/64
- B. ipv6 autoconfig 2001:db8:2222:7272::72/64
- C. ipv6 autoconfig
- D. ipv6 address 2001:db8:2222:7272::72/64

**Correct Answer:** D

**Section:** Managing Cisco IOS

## **Explanation**

### **Explanation/Reference:**

#### **QUESTION 88**

Which of these represents an IPv6 link-local address?

- A. FE08::280e:611:a:f14f:3d69
- B. FE81::280f:512b:e14f:3d69
- C. FE80::380e:611a:e14f:3d69
- D. FEEF:0345:5f1b::e14d:3d69

**Correct Answer:** C

**Section:** IPv6

**Explanation**

### **Explanation/Reference:**

#### **QUESTION 89**

The network administrator is asked to configure 113 point-to-point links. Which IP addressing scheme best defines the address range and subnet mask that meet the requirement and waste the fewest subnet and host addresses?

- A. 10.10.0.0/18 subnetted with mask 255.255.255.252
- B. 10.10.0.0/25 subnetted with mask 255.255.255.252
- C. 10.10.0.0/24 subnetted with mask 255.255.255.252
- D. 10.10.0.0/23 subnetted with mask 255.255.255.252
- E. 10.10.0.0/16 subnetted with mask 255.255.255.252

**Correct Answer:** D

**Section:** Managing Cisco IOS

**Explanation**

### **Explanation/Reference:**

#### **QUESTION 90**

A Cisco router is booting and has just completed the POST process. It is now ready to find and load an IOS image. What function does the router perform next?

- A. It checks the configuration register.
- B. It attempts to boot from a TFTP server.
- C. It loads the first image file in flash memory.
- D. It inspects the configuration file in NVRAM for boot instructions.

**Correct Answer:** A

**Section:** Managing Cisco IOS

**Explanation**

### **Explanation/Reference:**

**Explanation:**

#### **QUESTION 91**

Refer to the exhibit. What is the meaning of the output MTU 1500 bytes?

```
Router#show interface ethernet 0
Ethernet0 is up, line protocol is up
 Hardware address is QUICC Ethernet, address is 00c0.ab73.dead (0010.7bcc.
 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)
< output omitted >
```

- A. The maximum number of bytes that can traverse this interface per second is 1500.
- B. The minimum segment size that can traverse this interface is 1500 bytes.
- C. The maximum segment size that can traverse this interface is 1500 bytes.
- D. The minimum packet size that can traverse this interface is 1500 bytes.
- E. The maximum packet size that can traverse this interface is 1500 bytes.
- F. The maximum frame size that can traverse this interface is 1500 bytes.

**Correct Answer:** E

**Section:** Introduction to Cisco IOS

**Explanation**

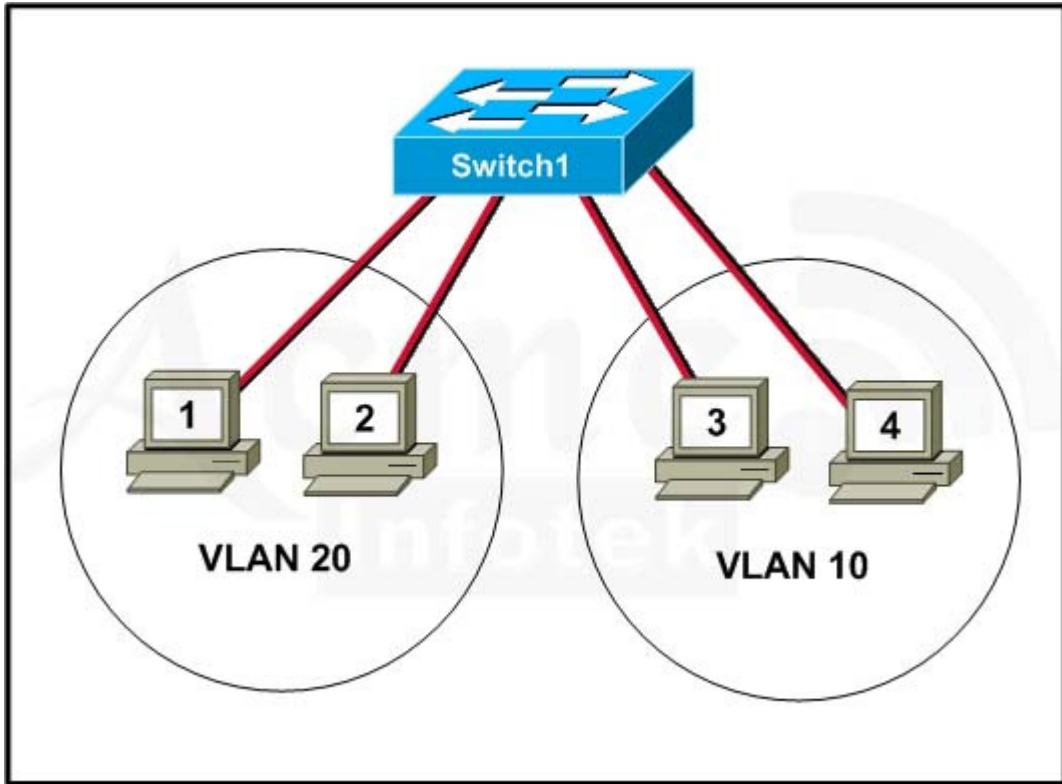
**Explanation/Reference:**

#### **QUESTION 92**

Refer to the exhibit.

Hosts on the same VLAN can communicate with each other but are unable to communicate with hosts on different VLANs.

What is needed to allow communication between VLANs?



- A. a router with an IP address on the physical interface that is connected to the switch.
- B. a router with subinterfaces configured on the physical interface that is connected to the switch.
- C. a switch with an access link that is configured between the switches.
- D. a switch with a trunk link that is configured between the switches.

**Correct Answer:** B

**Section:** VLAN

**Explanation**

**Explanation/Reference:**

#### **QUESTION 93**

Which command displays CPU utilization?

- A. show protocols
- B. show process
- C. show system
- D. show version

**Correct Answer:** B

**Section:** Managing Cisco IOS

**Explanation**

**Explanation/Reference:**

#### **QUESTION 94**

What two things will a router do when running a distance vector routing protocol? (Choose two.)

- A. Send periodic updates regardless of topology changes.
- B. Send entire routing table to all routers in the routing domain.
- C. Use the shortest-path algorithm to determine best path.
- D. Update the routing table based on updates from their neighbors.
- E. Maintain the topology of the entire network in its database.

**Correct Answer:** AD

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

#### **QUESTION 95**

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

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

**Correct Answer:** B

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

#### **QUESTION 96**

Refer to the exhibit. The technician wants to upload a new IOS in the router while keeping the existing IOS.

```
Router#show flash

System flash directory:
File Length Name/status
 1 3802992 c827v-y6-mz.121-1.XB
[3803056 bytes used, 4585552 available, 8388608 total]
8192K bytes of processor board System flash (Read/write)
```

What is the maximum size of an IOS file that could be loaded if the original IOS is also kept in flash?

- A. 3MB
- B. 5MB
- C. 7MB
- D. 4MB

**Correct Answer:** D

**Section:** Managing Cisco IOS

**Explanation**

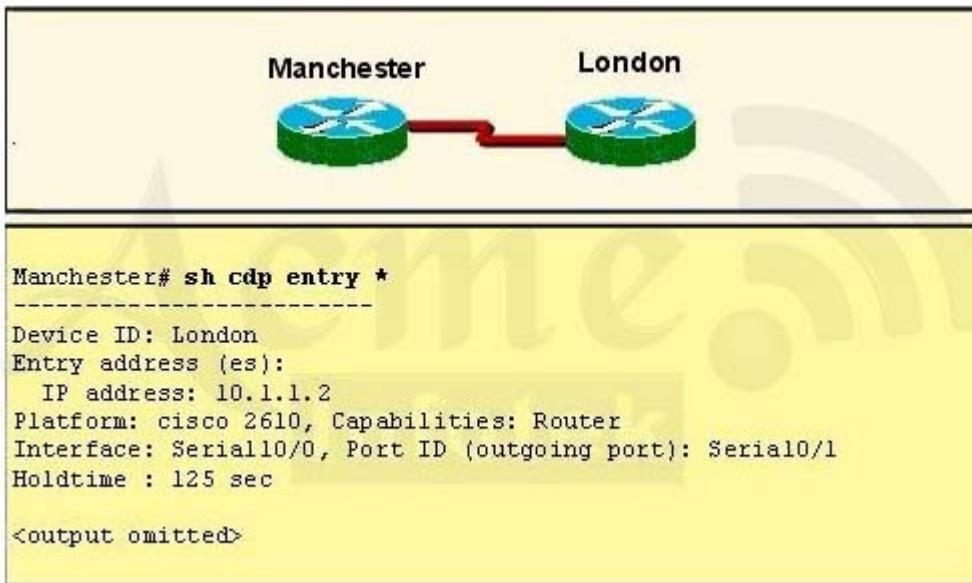
**Explanation/Reference:**

**QUESTION 97**

Refer to the exhibit.

The two exhibit devices are the only Cisco devices on the network. The serial network between the two devices has a mask of 255.255.255.252.

Given the output that is shown, what three statements are true of these devices? (Choose three.)



- A. The Manchester serial address is 10.1.1.1.
- B. The Manchester serial address is 10.1.1.2.
- C. The London router is a Cisco 2610.
- D. The Manchester router is a Cisco 2610.
- E. The CDP information was received on port Serial0/0 of the Manchester router.
- F. The CDP information was sent by port Serial0/0 of the London router.

**Correct Answer:** ACE

**Section:** Managing Cisco IOS

**Explanation**

**Explanation/Reference:**

**QUESTION 98**

If IP routing is enabled, which two commands set the gateway of last resort to the default gateway? (Choose two.)

- A. ip default-gateway 0.0.0.0
- B. ip route 172.16.2.1 0.0.0.0 0.0.0.0
- C. ip default-network 0.0.0.0
- D. ip default-route 0.0.0.0 0.0.0.0 172.16.2.1
- E. ip route 0.0.0.0 0.0.0.0 172.16.2.1

**Correct Answer:** CE

**Section:** IP Routing

**Explanation**

**Explanation/Reference:****QUESTION 99**

Which parameter would you tune to affect the selection of a static route as a backup, when a dynamic protocol is also being used?

- A. hop count
- B. administrative distance
- C. link bandwidth
- D. link delay
- E. link cost

**Correct Answer:** B

**Section:** IP Routing

**Explanation**

**Explanation/Reference:****QUESTION 100**

Refer to the exhibit. A network associate has configured OSPF with the command:

**City(config-router)# network 192.168.12.64 0.0.0.63 area 0**

```
City#show ip interface brief
```

| Interface       | IP-Address     | OK? | Method | Status | Protocol |
|-----------------|----------------|-----|--------|--------|----------|
| FastEthernet0/0 | 192.168.12.48  | YES | manual | up     | up       |
| FastEthernet0/1 | 192.168.12.65  | YES | manual | up     | up       |
| Serial0/0       | 192.168.12.121 | YES | manual | up     | up       |
| Serial0/1       | unassigned     | YES | unset  | up     | up       |
| Serial0/1.102   | 192.168.12.125 | YES | manual | up     | up       |
| Serial0/1.103   | 192.168.12.129 | YES | manual | up     | up       |
| Serial0/1.104   | 192.168.12.133 | YES | manual | up     | up       |
| City#           |                |     |        |        |          |

After completing the configuration, the associate discovers that not all the interfaces are participating in OSPF. Which three of the interfaces shown in the exhibit will participate in OSPF according to this configuration statement? (Choose three.)

- A. FastEthernet0/0
- B. FastEthernet0 /1
- C. Serial0/0
- D. Serial0/1.102
- E. Serial0/1.103
- F. Serial0/1.104

**Correct Answer:** BCD

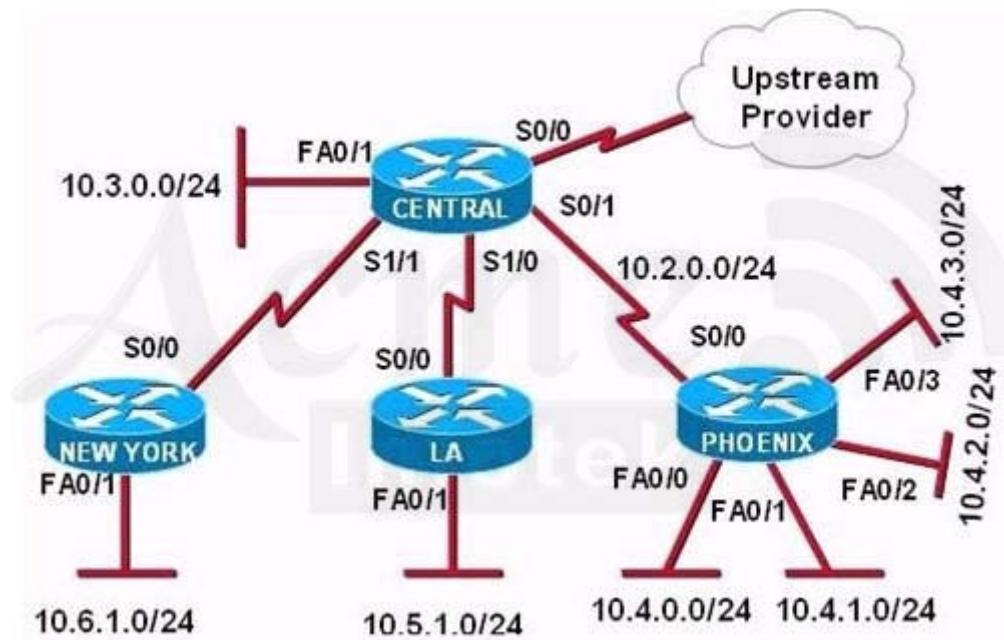
**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

**QUESTION 101**

Refer to the exhibit.



The Lakeside Company has the internetwork in the exhibit. The administrator would like to reduce the size of the routing table on the Central router.

Which partial routing table entry in the Central router represents a route summary that represents the LANs in Phoenix but no additional subnets?

- A. 10.0.0.0/22 is subnetted, 1 subnets  
D 10.0.0.0 [90/20514560] via 10.2.0.2, 6w0d, Serial0/1
- B. 10.0.0.0/28 is subnetted, 1 subnets  
D 10.2.0.0 [90/20514560] via 10.2.0.2, 6w0d, Serial0/1
- C. 10.0.0.0/28 is subnetted, 1 subnets  
D 10.4.4.0 [90/20514560] via 10.2.0.2, 6w0d, Serial0/1
- D. 10.0.0.0/30 is subnetted, 1 subnets  
D 10.4.4.4 [90/20514560] via 10.2.0.2, 6w0d, Serial0/1
- E. 10.0.0.0/22 is subnetted, 1 subnets  
D 10.4.0.0 [90/20514560] via 10.2.0.2, 6w0d, Serial0/1
- F. 10.0.0.0/30 is subnetted, 1 subnets  
D 10.2.2.0 [90/20514560] via 10.2.0.2, 6w0d, Serial0/1

**Correct Answer:** E

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

**QUESTION 102**

Refer to the graphic.

A static route to the 10.5.6.0/24 network is to be configured on the HFD router. Which commands will accomplish this? (Choose two.)



- A. HFD(config)# ip route 10.5.6.0 0.0.0.255 fa0/0
- B. HFD(config)# ip route 10.5.6.0 0.0.0.255 10.5.4.6
- C. HFD(config)# ip route 10.5.6.0 255.255.255.0 fa0/0
- D. HFD(config)# ip route 10.5.6.0 255.255.255.0 10.5.4.6
- E. HFD(config)# ip route 10.5.4.6 0.0.0.255 10.5.6.0
- F. HFD(config)# ip route 10.5.4.6 255.255.255.0 10.5.6.0

**Correct Answer:** CD

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

### QUESTION 103

Before installing a new, upgraded version of the IOS, what should be checked on the router, and which command should be used to gather this information? (Choose two.)

- A. the amount of available ROM.
- B. the amount of available flash and RAM memory.
- C. the version of the bootstrap software present on the router.
- D. show version.
- E. show processes.
- F. show running-config.

**Correct Answer:** BD

**Section:** Managing Cisco IOS

**Explanation**

**Explanation/Reference:**

### QUESTION 104

Which command reveals the last method used to powercycle a router?

- A. show reload
- B. show boot
- C. show running-config
- D. show version

**Correct Answer: D**

**Section: Managing Cisco IOS**

**Explanation**

**Explanation/Reference:**

**QUESTION 105**

Which command would you use on a Cisco router to verify the Layer 3 path to a host?

- A. tracert address
- B. traceroute address
- C. telnet address
- D. ssh address

**Correct Answer: B**

**Section: Introduction to Cisco IOS**

**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 106**

What information does a router running a link-state protocol use to build and maintain its topological database? (Choose two.)

- A. hello packets.
- B. SAP messages sent by other routers.
- C. LSAs from other routers.
- D. beacons received on point-to-point links.
- E. routing tables received from other link-state routers.
- F. TTL packets from designated routers.

**Correct Answer: AC**

**Section: IP Routing**

**Explanation**

**Explanation/Reference:**

**QUESTION 107**

Which statements describe the routing protocol OSPF? (Choose three.)

- A. It supports VLSM.
- B. It is used to route between autonomous systems.
- C. It confines network instability to one area of the network.
- D. It increases routing overhead on the network.
- E. It allows extensive control of routing updates.
- F. It is simpler to configure than RIP v2.

**Correct Answer: ACE**

**Section: IP Routing**

**Explanation**

**Explanation/Reference:**

### QUESTION 108

Refer to the exhibit.

A network administrator configures a new router and enters the copy startup-config running-config command on the router.

The network administrator powers down the router and sets it up at a remote location.

When the router starts, it enters the system configuration dialog as shown. What is the cause of the problem?

```
--- System Configuration Dialog ---
```

```
would you like to enter the initial configuration dialog? [yes/no]:
% Please answer 'yes' or 'no'.
```

```
would you like to enter the initial configuration dialog? [yes/no]: n
```

```
would you like to terminal autoinstall? [yes]:
```

```
Press RETURN to get started!
```

- A. The network administrator failed to save the configuration.
- B. The configuration register is set to 0x2100.
- C. The boot system flash command is missing from the configuration.
- D. The configuration register is set to 0x2102.
- E. The router is configured with the boot system startup command.

**Correct Answer:** A

**Section:** Introduction to Cisco IOS

**Explanation**

**Explanation/Reference:**

### QUESTION 109

Refer to the exhibit. Which WAN protocol is being used?

```
RouterA#show interface pos8/0/0
POS8/0/0 is up, line protocol is up
Hardware is Packet over Sonet
Keepalive set (10 sec)
Scramble disabled
LMI enq sent 2474988, LMI stat recv 2474969, LMI upd recv 0, DTE LMI up
Broadcast queue 0/256, broadcasts sent/dropped 25760668/0, interface broadcasts 25348176
Last input 00:00:00, output 00:00:00, output hang never
Last clearing of "show interface" counters 40w6d
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 39000 bits/sec, 60 packets/sec
 63153396 packets input, 4389121455 bytes, 0 no buffer
 Received 0 broadcasts (0 IP multicast)
 0 runts, 0 giants, 0 throttles
 0 parity
 44773 input errors, 39138 CRC, 0 frame, 0 overrun, 0 ignored, 27 abort
 945596253 packets output, 62753244360 bytes, 0 underruns
 0 output errors, 0 applique, 0 interface resets
 0 output buffer failures, 0 output buffers swapped out
 0 carrier transitions
```

- A. ATM
- B. HDLC
- C. Frame Relay
- D. ppp

**Correct Answer:** C

**Section:** WAN

**Explanation**

**Explanation/Reference:**

**QUESTION 110**

What is the default administrative distance of OSPF?

- A. 90
- B. 100
- C. 110
- D. 120

**Correct Answer:** C

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

**QUESTION 111**

Which characteristics are representative of a link-state routing protocol? (Choose three.)

- A. provides common view of entire topology.
- B. exchanges routing tables with neighbors.
- C. calculates shortest path.
- D. utilizes event-triggered updates.
- E. utilizes frequent periodic updates.

**Correct Answer:** ACD

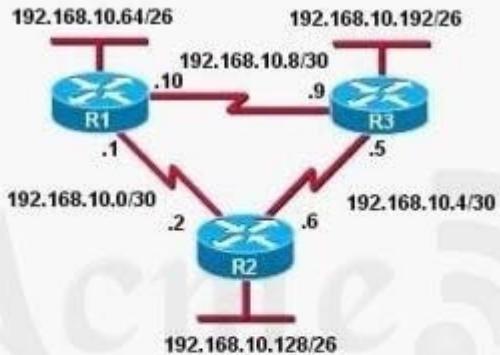
**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

**QUESTION 112**

Refer to the exhibit.



```
R3# show ip route
Gateway of last resort is not set
 192.168.10.0/24 is variably subnetted, 6 subnets, 2 masks
D 192.168.10.64/26 [90/2195456] via 192.168.10.9, 00:03:31, Serial0/0
D 192.168.10.0/30 [90/2681856] via 192.168.10.9, 00:03:31, Serial0/0
[C] 192.168.10.4/30 is directly connected, Serial0/1
[C] 192.168.10.8/30 is directly connected, Serial0/0
[C] 192.168.10.192/26 is directly connected, FastEthernet0/0
D 192.168.10.128/26 [90/2195456] via 192.168.10.5, 00:03:31, Serial0/1
```

Based on the exhibited routing table, how will packets from a host within the 192.168.10.192/26 LAN be forwarded to 192.168.10.1?

- A. The router will forward packets from R3 to R1.
- B. The router will forward packets from R3 to R2 to R1 AND from R3 to R1.
- C. The router will forward packets from R3 to R1 to R2.
- D. The router will forward packets from R3 to R2 to R1.

**Correct Answer:** B

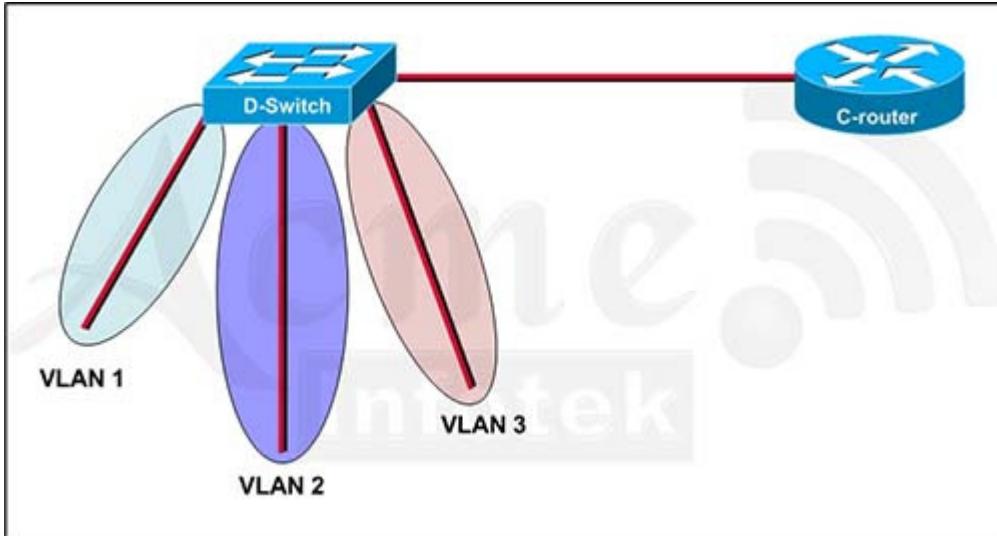
**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

#### QUESTION 113

Refer to the exhibit.



C-router is to be used as a "router-on-a-stick" to route between the VLANs. All the interfaces have been properly configured and IP routing is operational.

The hosts in the VLANs have been configured with the appropriate default gateway. What can be said about this configuration?

- A. These commands need to be added to the configuration:

```
C-router(config)# router eigrp 123
C-router(config-router)# network 172.19.0.0
```

- B. No further routing configuration is required.

- C. These commands need to be added to the configuration:

```
C-router(config)# router ospf 1
C-router(config-router)# network 172.19.0.0 0.0.3.255 area 0
```

- D. These commands need to be added to the configuration:

```
C-router(config)# router rip
C-router(config-router)# network 172.19.0.0
```

**Correct Answer: B**

**Section: VLAN**

**Explanation**

**Explanation/Reference:**

#### QUESTION 114

Why is flash memory erased prior to upgrading the IOS image from the TFTP server?

```

Router# copy tftp flash
Address or name of remote host []? 192.168.2.167
Source filename []? c1600-k8sy-mz.123-16a.bin
Destination filename [c1600-k8sy-mz.123-16a.bin]?
Accessing tftp://192.168.2.167/ c1600-k8sy-mz.123-16a.bin...
Erasing flash before copying? [confirm]
Erasing the flash filesystem will remove all files! Continue? [confirm]
Erasing device...
Eee
Eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee... erased
Erase of flash: complete
Loading c1600-k8sy-mz.123-16a.bin from 192.168.2.167 (via Ethernet0):
!!!!!!!!!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!!
!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!!
!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!!
!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!!
[OK - 6888962/13777920 bytes]

Verifying checksum... OK (0x7BF3)
6888962 bytes copied in 209.920 secs (32961 bytes/sec)
Router#

```

- A. In order for the router to use the new image as the default, it must be the only IOS image in flash.
- B. Flash memory on Cisco routers can contain only a single IOS image.
- C. Erasing current flash content is requested during the copy dialog.
- D. The router cannot verify that the Cisco IOS image currently in flash is valid.

**Correct Answer:** C

**Section:** Managing Cisco IOS

**Explanation**

**Explanation/Reference:**

#### **QUESTION 115**

Which command would you configure globally on a Cisco router that would allow you to view directly connected Cisco devices?

- A. enable cdp
- B. cdp enable
- C. cdp run
- D. run cdp

**Correct Answer:** C

**Section:** Managing Cisco IOS

**Explanation**

**Explanation/Reference:**

#### **QUESTION 116**

Refer to the exhibit. According to the routing table, where will the router send a packet destined for 10.1.5.65?

| Network      | Interface | Next-hop           |
|--------------|-----------|--------------------|
| 10.1.1.0/24  | e0        | directly connected |
| 10.1.2.0/24  | e1        | directly connected |
| 10.1.3.0/25  | s0        | directly connected |
| 10.1.4.0/24  | s1        | directly connected |
| 10.1.5.0/24  | e0        | 10.1.1.2           |
| 10.1.5.64/28 | e1        | 10.1.2.2           |
| 10.1.5.64/29 | s0        | 10.1.3.3           |
| 10.1.5.64/27 | s1        | 10.1.4.4           |

- A. 10.1.1.2
- B. 10.1.2.2
- C. 10.1.3.3
- D. 10.1.4.4

**Correct Answer:** C

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

#### QUESTION 117

Refer to the exhibit. Which address and mask combination represents a summary of the routes learned by EIGRP?

**Gateway of last resort is not set**

- 192.168.25.0/30 is subnetted, 4 subnets
- D 192.168.25.20 [90/2681856] via 192.168.15.5, 00:00:10, Serial0/1
  - D 192.168.25.16 [90/1823638] via 192.168.15.5, 00:00:50, Serial0/1
  - D 192.168.25.24 [90/3837233] via 192.168.15.5, 00:05:23, Serial0/1
  - D 192.168.25.28 [90/8127323] via 192.168.15.5, 00:06:45, Serial0/1
  - C 192.168.15.4/30 is directly connected, Serial0/1
  - C 192.168.2.0/24 is directly connected, FastEthernet0/0

- A. 192.168.25.0 255.255.255.240
- B. 192.168.25.16 255.255.255.252
- C. 192.168.25.0 255.255.255.252
- D. 192.168.25.28 255.255.255.240
- E. 192.168.25.16 255.255.255.240
- F. 192.168.25.28 255.255.255.240

**Correct Answer:** E

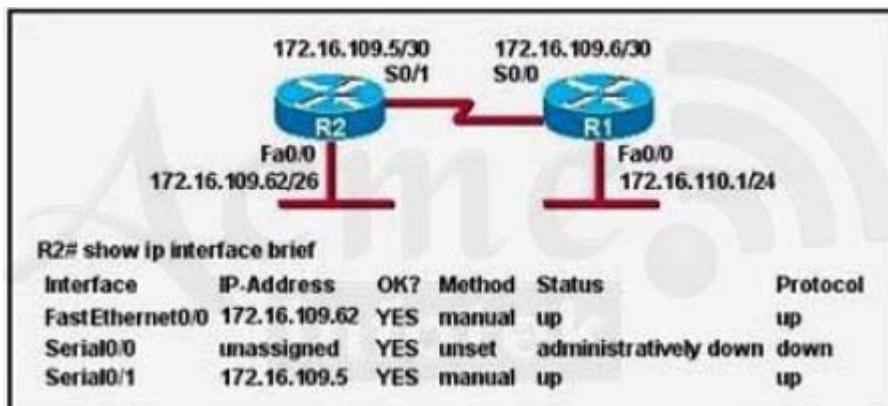
**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

**QUESTION 118**

Refer to the Exhibit.



Assuming that the entire network topology is shown, what is the operational status of interfaces R2 as indicated by the command output shown?

- A. One interface has a problem.
- B. Two interfaces have problems.
- C. The interfaces are functioning correctly.
- D. The operational status of the interfaces cannot be determined from the output shown.

**Correct Answer:** C

**Section:** IP Routing

**Explanation**

**Explanation/Reference:**

**QUESTION 119**

Which two locations can be configured as a source for the IOS image in the boot system command? (Choose two.)

- A. RAM
- B. NVRAM
- C. flash memory
- D. HTTP server
- E. TFTP server
- F. Telnet server

**Correct Answer:** CE

**Section:** Managing Cisco IOS

**Explanation**

**Explanation/Reference:**

**QUESTION 120**

Refer to the exhibit.

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

```

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

```

- A. 10.11.2
- B. 10.154.154.1
- C. 172.16.5.1
- D. 192.168.5.3

**Correct Answer:** C

**Section:** IP Routing

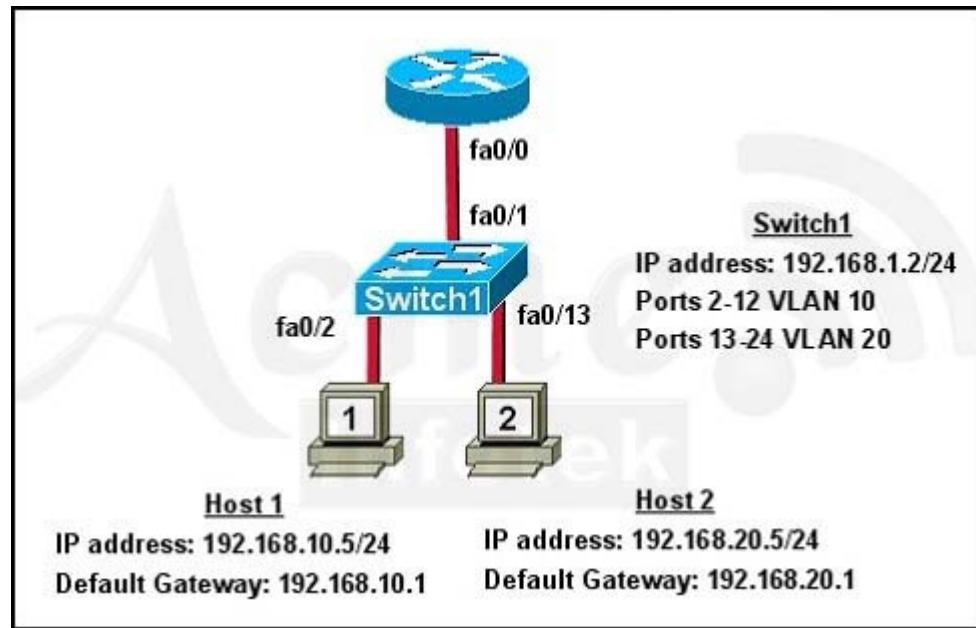
**Explanation:**

**Explanation/Reference:**

#### QUESTION 121

Refer to the exhibit.

What commands must be configured on the 2950 switch and the router to allow communication between host 1 and host 2? (Choose two.)



- A. Router(config)# interface fastethernet 0/0  
Router(config-if)# ip address 192.168.1.1 255.255.255.0  
Router(config-if)# no shut down
- B. Router(config)# interface fastethernet 0/0  
Router(config-if)# no shut down  
Router(config)# interface fastethernet 0/0.1  
Router(config-subif)# encapsulation dot1q 10  
Router(config-subif)# ip address 192.168.10.1 255.255.255.0  
Router(config)# interface fastethernet 0/0.2  
Router(config-subif)# encapsulation dot1q 20

- ```
Router(config-subif)# ip address 192.168.20.1 255.255.255.0
```
- C. Router(config)# router eigrp 100
Router(config-router)# network 192.168.10.0
Router(config-router)# network 192.168.20.0
- D. Switch1(config)# vlan database
Switch1(config-vlan)# vtp domain XYZ
Switch1(config-vlan)# vtp server
- E. Switch1(config)# interface fastethernet 0/1
Switch1(config-if)# switchport mode trunk
- F. Switch1(config)# interface vlan 1
Switch1(config-if)# ip default-gateway 192.168.1.1

Correct Answer: BE

Section: VLAN

Explanation

Explanation/Reference:

QUESTION 122

Which two statements describe the process identifier that is used in the command to configure OSPF on a router? (Choose two.)

```
Router(config)# router ospf 1
```

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

Correct Answer: CD

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 123

Refer to the exhibit.

For what two reasons has the router loaded its IOS image from the location that is shown? (Choose two)

```
Router#show version
Cisco Internetwork Operating System Software
IOS (tm) C2600 Software (C7200-J-M), Version 11.3(19970915:164752)
[hampton-nitro-baseline 249]
Copyright (c) 1986-1997 by cisco Systems, Inc.
Compiled Wed 08-Oct-97 06:39 by hampton
Image text-base: 0x60008900, data-base: 0x60b98000

ROM: System Bootstrap, Version 11.1(11855)[beta 2], INTERIM SOFTWARE
BOOTFLASH: C7200 Software (C7200-BOOT-M), Version 11.1(472), RELEASE SOFTWARE (fc1)

Router1 uptime is 23 hours, 33 minutes
System restarted by abort at PC 0x6022322C at 10:50:55 PDT Tue Oct 21 1997

System image file is "tftp://172.16.1.129/hampton/nitro/c7200-j-mz"

Cisco 7206 (NPE150) processor with 57344K/8192K bytes of memory

<output omitted>

Configuration register is 0x2102
```

- A. Router1 has specific boot system commands that instruct it to load IOS from TFTP server.
- B. Router1 is acting as a TFTP server for other routers.
- C. Router1 cannot locate a valid IOS image in flash memory.
- D. Router1 defaulted to ROMMON mode and loaded the IOS image from a TFTP server.
- E. Cisco routers will first attempt to load a image from TFTP for management purposes.

Correct Answer: AC

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 124

Refer to the exhibit. What can be determined about the router from the console output?

```
1 FastEthernet/IEEE 802.3 interface(s)
125K bytes of non-volatile configuration memory.
```

```
65536K bytes of ATA PCMCIA card at slot 0 (Sector size 512 bytes).
8192K bytes of Flash internal SIMM (Sector size 256K).
```

```
--- System Configuration Dialog ---
```

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

- A. No configuration file was found in NVRAM.

- B. No configuration file was found in flash.
- C. No configuration file was found in the PCMCIA card.
- D. Configuration file is normal and will load in 15 seconds.

Correct Answer: A

Section: Introduction to Cisco IOS

Explanation

Explanation/Reference:

QUESTION 125

Which three elements must be used when you configure a router interface for VLAN trunking? (Choose three.)

- A. one physical interface for each subinterface.
- B. one IP network or subnetwork for each subinterface.
- C. a management domain for each subinterface.
- D. subinterface encapsulation identifiers that match VLAN tags.
- E. one subinterface per VLAN.
- F. subinterface numbering that matches VLAN tags.

Correct Answer: BDE

Section: VLAN

Explanation

Explanation/Reference:

QUESTION 126

Which commands are required to properly configure a router to run OSPF and to add network 192.168.16.0/24 to OSPF area 0? (Choose two.)

- A. Router(config)# router ospf 1
- B. Router(config)# router ospf 0
- C. Router(config)# router ospf area 0
- D. Router(config-router)# network 192.168.16.0 0.0.0.255 area 0
- E. Router(config-router)# network 192.168.16.0 0.0.0.255 0
- F. Router(config-router)# network 192.168.16.0 255.255.255.0 area 0

Correct Answer: AD

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 127

A router receives information about network 192.168.10.0/24 from multiple sources. What will the router consider the most reliable information about the path to that network?

- A. an OSPF update for network 192.168.0.0/16.
- B. a static router to network 192.168.10.0/24.
- C. a static router to network 192.168.10.0/24 with a local serial interface configured as the next hop.
- D. a RIP update for network 192.168.10.0/24.

- E. a directly connected interface with an address of 192.168.10.254/24.
- F. a default route with a next hop address of 192.168.10.1 416.

Correct Answer: E

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 128

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

- A. 16
- B. 2
- C. unlimited
- D. 4

Correct Answer: D

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 129

Which command shows your active Telnet connections?

- A. show cdp neighbors
- B. show session
- C. show users
- D. show vty logins

Correct Answer: B

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 130

Which type of EIGRP route entry describes a feasible successor?

- A. a primary router, stored in the topology table.
- B. a backup router, stored in the routing table.
- C. a backup route, stored in the topology table.
- D. a primary router, stored in the routing table.

Correct Answer: C

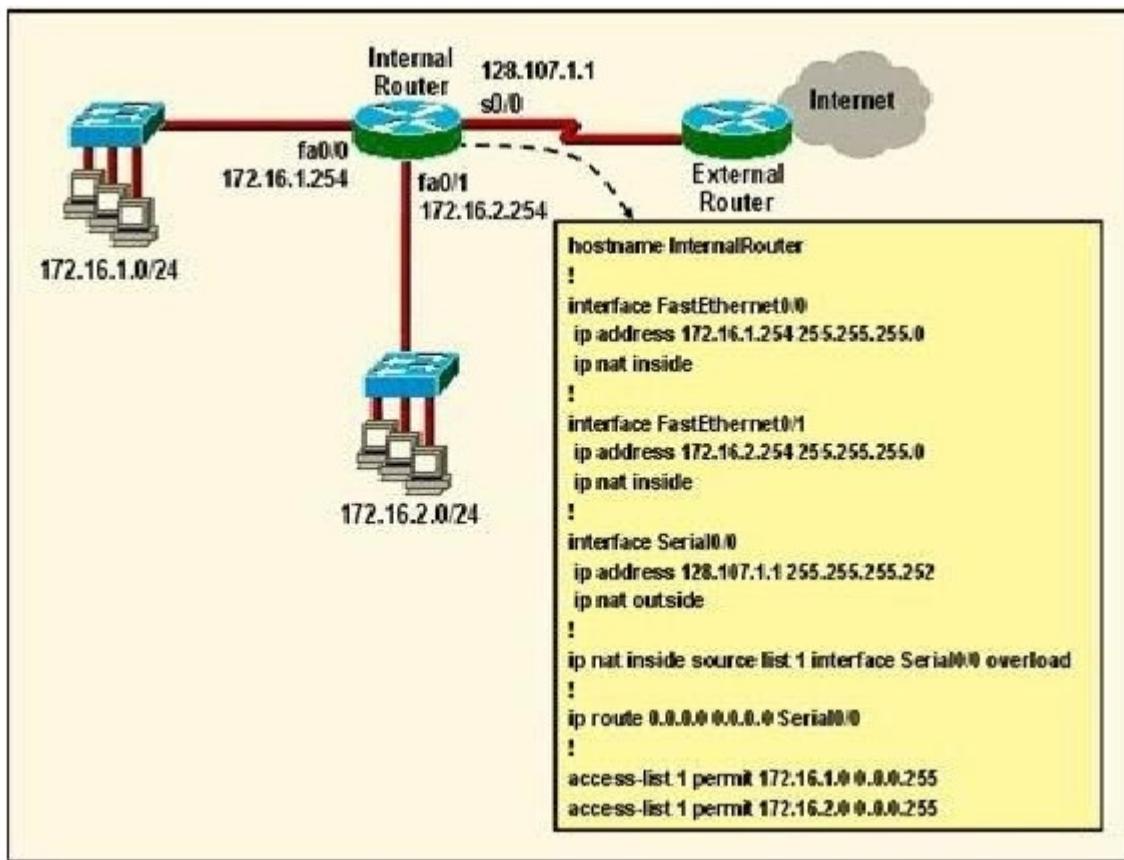
Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 131

Refer to the exhibit. What statement is true of the configuration for this network?



Based on the information shown above, Which of the following correctly describe the configuration for this network?

- A. The configuration that is shown provides inadequate outside address space for translation of the number of inside addresses that are supported.
- B. Because of the addressing on interface FastEthernet0/1, the Serial0/0 interface address will not support the NAT configuration as shown.
- C. The number 1 referred to in the ip nat inside source command references access-list number1.
- D. External Router must be configured with static routers to networks 172.16.2.0/24.

Correct Answer: C

Section: NAT

Explanation

Explanation/Reference:

QUESTION 132

Which statement describes the process of dynamically assigning IP addresses by the DHCP server?

- A. Addresses are allocated after a negotiation between the server and the host to determine the length of the agreement.
- B. Addresses are permanently assigned so that the hosts uses the same address at all times.
- C. Addresses are assigned for a fixed period of time, at the end of the period, a new request for an address

- must be made.
- D. Addresses are leased to hosts, which periodically contact the DHCP server to renew the lease.

Correct Answer: D

Section: TCP/IP

Explanation

Explanation/Reference:

QUESTION 133

What are two benefits of using NAT? (Choose two)

- A. NAT protects network security because private networks are not advertised.
- B. NAT accelerates the routing process because no modifications are made on the packets.
- C. Dynamic NAT facilitates connections from the outside of the network.
- D. NAT facilitates end-to-end communication when IPsec is enable.
- E. NAT eliminates the need to re-address all hosts that require external access.
- F. NAT conserves addresses through host MAC-level multiplexing.

Correct Answer: AE

Section: NAT

Explanation

Explanation/Reference:

QUESTION 134

On which options are standard access lists based?

- A. destination address and wildcard mask
- B. destination address and subnet mask
- C. source address and subnet mask
- D. source address and wildcard mask

Correct Answer: D

Section: Security

Explanation

Explanation/Reference:

QUESTION 135

A network engineer wants to allow a temporary entry for a remote user with a specific username and password so that the user can access the entire network over the Internet. Which ACL can be used?

- A. reflexive
- B. extended
- C. standard
- D. dynamic

Correct Answer: D

Section: Security

Explanation

Explanation/Reference:

QUESTION 136

How does a DHCP server dynamically assign IP addresses to hosts?

- A. Addresses are allocated after a negotiation between the server and the host to determine the length of the agreement.
- B. Addresses are permanently assigned so that the hosts uses the same address at all times.
- C. Addresses are assigned for a fixed period of time, at the end of the period, a new request for an address must be made.
- D. Addresses are leased to hosts. A host will usually keep the same address by periodically contacting the DHCP server to renew the lease.

Correct Answer: D

Section: TCP/IP

Explanation

Explanation/Reference:

QUESTION 137

Refer to the exhibit. Which rule does the DHCP server use when there is an IP address conflict?

```
Router# show ip dhcp conflict
IP address      Detection method    Detection time
172.16.1.32     Ping                  Feb 16 1998 12:28 PM
172.16.1.64     Gratuitous ARP        Feb 23 1998 08:12 AM
```

- A. The address is removed from the pool until the conflict is resolved.
- B. The address remains in the pool until the conflict is resolved.
- C. Only the IP detected by Gratuitous ARP is removed from the pool.
- D. Only the IP detected by Ping is removed from the pool.
- E. The IP will be shown, even after the conflict is resolved.

Correct Answer: A

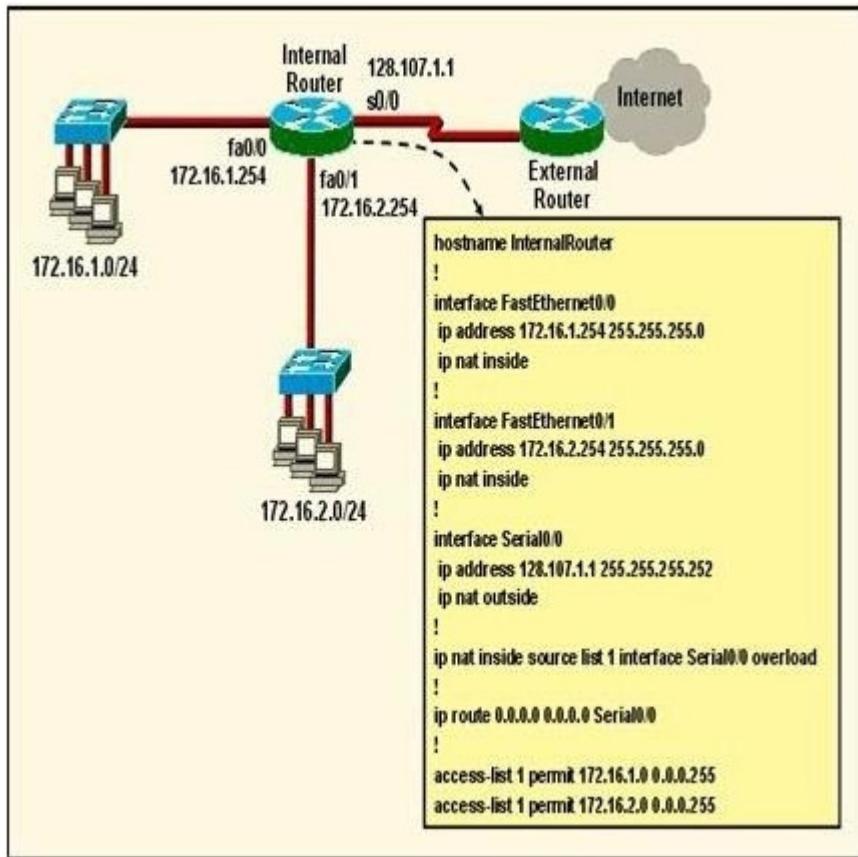
Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 138

Refer to the exhibit. What statement is true of the configuration for this network?



Based on the information shown above, Which of the following correctly describe the configuration for this network?

- A. The configuration that is shown provides inadequate outside address space for translation of the number of inside addresses that are supported.
- B. Because of the addressing on interface FastEthernet0/1, the Serial0/0 interface address will not support the NAT configuration as shown.
- C. The number 1 referred to in the ip nat inside source command references access-list number1.
- D. External Router must be configured with static routers to networks 172.16.2.0/24.

Correct Answer: C

Section: NAT

Explanation

Explanation/Reference:

QUESTION 139

Which two tasks does the Dynamic Host Configuration Protocol perform? (Choose two.)

- A. Set the IP gateway to be used by the network.
- B. Perform host discovery used DHCPDISCOVER message.
- C. Configure IP address parameters from DHCP server to a host.
- D. Provide an easy management of layer 3 devices.
- E. Monitor IP performance using the DHCP server.
- F. Assign and renew IP address from the default pool.

Correct Answer: CF

Section: TCP/IP

Explanation

Explanation/Reference:

QUESTION 140

When a DHCP server is configured, which two IP addresses should never be assignable to hosts? (Choose two.)

- A. network or subnetwork IP address
- B. broadcast address on the network
- C. IP address leased to the LAN
- D. IP address used by the interfaces
- E. manually assigned address to the clients
- F. designated IP address to the DHCP server

Correct Answer: AB

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 141

Which two statements about static NAT translation are true? (Choose two)

- A. They allow connections to be initiated from the outside.
- B. They require no inside or outside interface markings because addresses are statically defined.
- C. They can be configured with access lists, to allow two or more connections to be initiated from the outside.
- D. They are always present in the NAT table.

Correct Answer: AD

Section: NAT

Explanation

Explanation/Reference:

QUESTION 142

Which statement about access lists that are applied to an interface is true?

- A. You can configure one access list, per direction, per Layer 3 protocol
- B. You can apply multiple access lists with the same protocol in different directions
- C. You can apply only one access list on any interface
- D. You can apply as many access lists as you want on any interface

Correct Answer: A

Section: Security

Explanation

Explanation/Reference:

QUESTION 143

Which item represents the standard IP ACL?

- A. access-list 50 deny 192.168.1.1 0.0.0.255
- B. access-list 110 permit ip any any
- C. access-list 2500 deny tcp any host 192.168.1.1 eq 22
- D. access-list 101 deny tcp any host 192.168.1.1

Correct Answer: A

Section: Security

Explanation

Explanation/Reference:

QUESTION 144

A network administrator is configuring ACLs on a Cisco router, to allow IP access from the 192.168.146.0/24, 192.168.147.0/24, 192.168.148.0/24, and 192.168.149.0/24 networks only. Which two ACLs, when combined, should be used?

- A. access-list 10 permit ip 192.168.146.0 0.0.0.255
- B. access-list 10 permit ip 192.168.146.0 255 255.255.0
- C. access-list 10 permit ip 192.168.147.0 0.0.255 255
- D. access-list 10 permit ip 192.168.149.0 0.0.255.255.0
- E. access-list 10 permit ip 192.168.148.0 0.0.1.255
- F. access-list 10 permit ip 192.168.146.0 0.0.1.255

Correct Answer: EF

Section: Security

Explanation

Explanation/Reference:

QUESTION 145

What can be done to secure the virtual terminal interfaces on a router? (Choose two.)

- A. Administratively shut down the interface.
- B. Physically secure the interface.
- C. Create an access list and apply to the virtual terminal interfaces with the access-group command.
- D. Configure a virtual terminal password and login process.
- E. Enter an access list and apply it to the virtual terminal interfaces using the access-class command.

Correct Answer: DE

Section: Security

Explanation

Explanation/Reference:

QUESTION 146

Which two commands correctly verify whether port security has been configured on port FastEthernet 0/12 on a switch? (Choose two?)

- A. sw1# show switchport port-secure interface FastEthernet 0/12

- B. sw1# show switchport port-security interface FastEthernet 0/12
- C. sw1# show port-secure interface FastEthernet 0/12
- D. sw1# show running-config
- E. sw1# show port-security interface FastEthernet 0/12

Correct Answer: DE

Section: Switching

Explanation

Explanation/Reference:

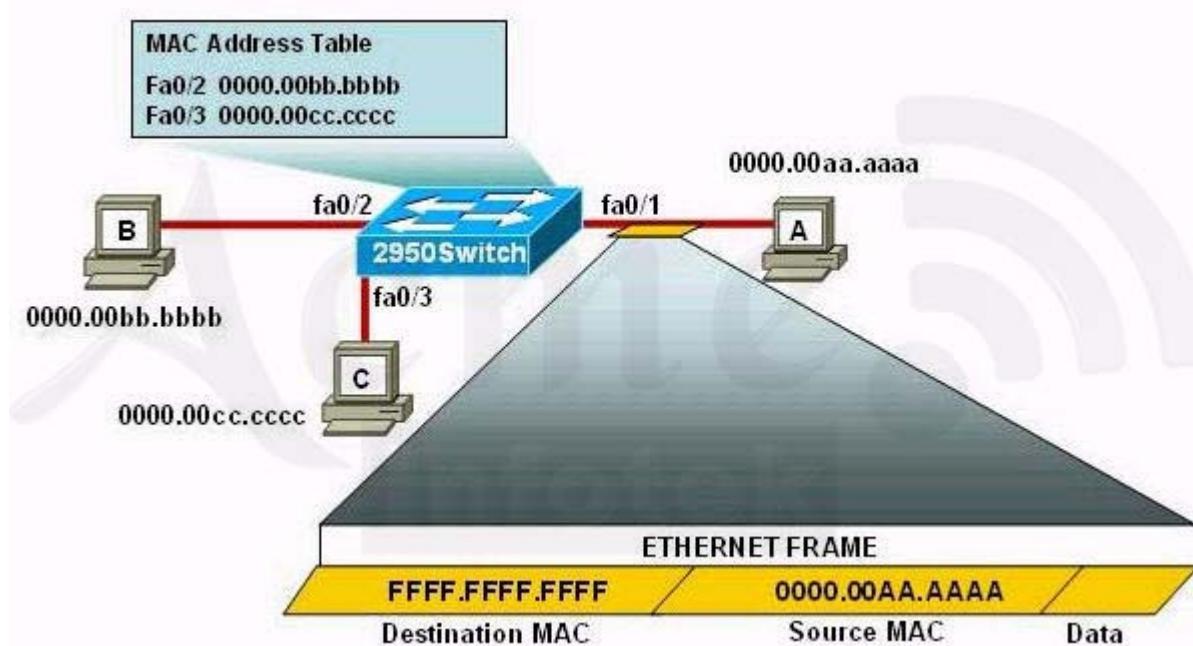
QUESTION 147

Refer to the exhibit.

The following commands are executed on interface fa0/1 of 2950Switch.

```
2950Switch(config-if)# switchport port-security
2950Switch(config-if)# switchport port-security mac-address sticky
2950Switch(config-if)# switchport port-security maximum 1
```

The Ethernet frame that is shown arrives on interface fa0/1.



What two functions will occur when this frame is received by 2950Switch? (Choose two.)

- A. The MAC address table will now have an additional entry of fa0/1 FFFF.FFFF.FFFF.
- B. Only host A will be allowed to transmit frames on fa0/1.
- C. This frame will be discarded when it is received by 2950Switch.
- D. All frames arriving on 2950Switch with a destination of 0000.00aa.aaaa will be forwarded out fa0/1.
- E. Hosts B and C may forward frames out fa0/1 but frames arriving from other switches will not be forwarded out fa0/1.
- F. Only frames from source 0000.00bb.bbbb, the first learned MAC address of 2950Switch, will be forwarded out fa0/1

Correct Answer: BD

Section: Switching

Explanation

Explanation/Reference:

QUESTION 148

Select the action that results from executing these commands.

**Switch(config-if)# switchport port-security
Switch(config-if)# switchport port-security mac-address sticky**

- A. A dynamically learned MAC address is saved in the startup-configuration file.
- B. A dynamically learned MAC address is saved in the running-configuration file.
- C. A dynamically learned MAC address is saved in the VLAN database.
- D. Statically configured MAC addresses are saved in the startup-configuration file if frames from that address are received.
- E. Statically configured MAC addresses are saved in the running-configuration file if frames from that address are received.

Correct Answer: B

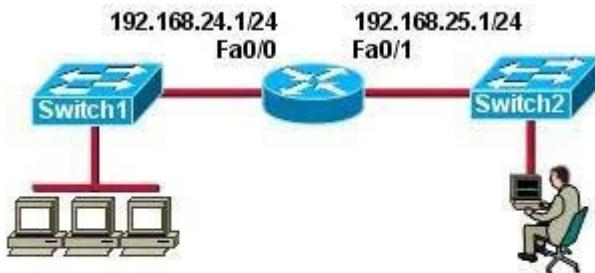
Section: Switching

Explanation

Explanation/Reference:

QUESTION 149

Refer to the exhibit.



```

Switch1# show running-config
!
hostname Switch1
!
enable secret 5 $1$8V43$Wm12DE8klwUjf8EcZnFT7/
enable password guess
!
<output omitted>
!
interface Vlan1
ip address 192.168.24.2 255.255.255.0
no ip route-cache
!
ip http server
!
line con 0
line vty 0 4
password cisco
login
!
end

```

The network administrator cannot connect to Switch1 over a Telnet session, although the hosts attached to Switch1 can ping the interface Fa0/0 of the router.

Given the information in the graphic and assuming that the router and Switch2 are configured properly, which of the following commands should be issued on Switch1 to correct this problem?

- A. Switch1(config)# interface fa0/1
Switch1(config-if)# ip address 192.168.24.3.255.255.0
- B. Switch1(config)# interface fa0/1
Switch1(config-if)# switchport mode trunk
- C. Switch1(config)# interface fa0/1
Switch1(config-if)# duplex full
Switch1(config-if)# speed 100
- D. Switch1(config)# ip default-gateway 192.168.24.1
- E. Switch1(config)# line con0
Switch1(config-line)# password cisco
Switch1(config-line)#login

Correct Answer: D

Section: Switching

Explanation

Explanation/Reference:

To route traffic to other VLANs, we need to enter the IP address of the next-hop router interface that is directly connected to the switch where a default gateway is being configured.

The default gateway receives IP packets with unresolved destination IP addresses from the switch. Once the default gateway is configured, the switch will have connectivity to the remote networks with which a host needs to communicate.

QUESTION 150

Refer to the exhibit.

Which of these statements correctly describes the state of the switch once the boot process has been completed?

```
00:00:39: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to down
00:00:40: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled for type vlan
00:00:42: %SYS-5-CONFIG_I: Configured from memory by console
00:00:42: %SYS-5-RESTART: System restarted --
Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 12.2(25)SEE2, RELEASE SOFT
Copyright (c) 1986-2006 by Cisco Systems, Inc.
Compiled Fri 28-Jul-06 11:57 by yenanh
00:00:44: %LINK-5-CHANGED: Interface Vlan1, changed state to administratively down
00:00:44: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
00:00:44: %LINK-3-UPDOWN: Interface FastEthernet0/2, changed state to up
00:00:44: %LINK-3-UPDOWN: Interface FastEthernet0/11, changed state to up
00:00:45: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
00:00:45: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
00:00:45: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/11, changed state to up
00:00:48: %LINK-3-UPDOWN: Interface FastEthernet0/12, changed state to up
00:00:49: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/12, changed state to up
```

- A. As FastEthernet0/12 will be the last to come up, it will not be blocked by STP.
- B. Remote access management of this switch will not be possible without configuration change.
- C. More VLANs will need to be created for this switch.
- D. The switch will need a different IOS code in order to support VLANs and STP.

Correct Answer: B

Section: VLAN

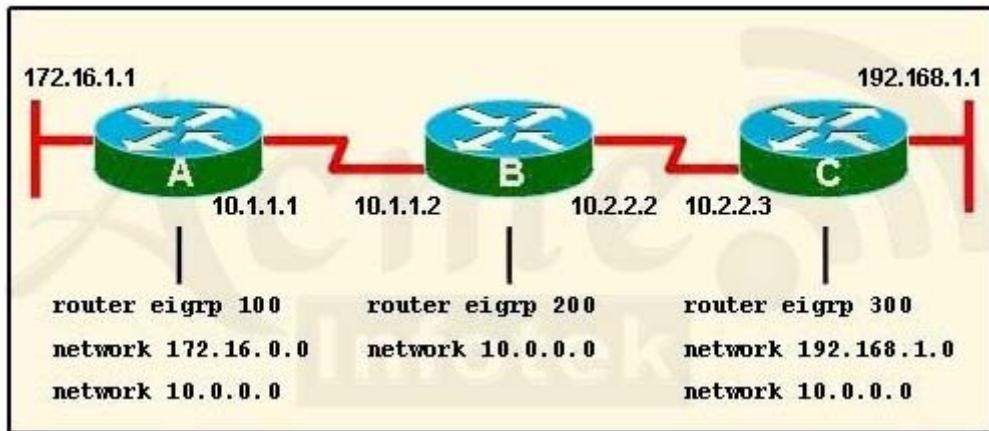
Explanation

Explanation/Reference:

QUESTION 151

Refer to the exhibit.

When running EIGRP, what is required for Router A to exchange routing updates with Router C?



- A. AS numbers must be changed to match on all the routers.
- B. Loopback interfaces must be configured so a DR is elected.
- C. The no auto-summary command is needed on Router A and Router C.
- D. Router B needs to have two network statements, one for each connected network.

Correct Answer: A

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 152

Refer to the exhibit.

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

Current configuration : 659 bytes
!
version 12.4
no service timestamp log datetime msec
no service timestamp debug datetime msec
service password-encryption
!
hostname Router
!
enable secret 5 $1$mERr$5rVt7rPBi54wqbxkx7m0
!
interface FastEthernet0/0
  ip address 192.168.1.1 255.255.255.0
  ip access-group 101 in
  duplex auto
  speed auto
!
access-list 101 deny tcp any any eq 22
access-list 101 permit ip any any
!
line con 0
  password 7 0822455D0A16
  login
line vty 0 4
  login
line vty 5 14
  login
!
end
```

A network administrator cannot establish a Telnet session with the indicated router. What is the cause of this failure?

- A. A Level 5 password is not set.
- B. An ACL is blocking Telnet access.
- C. The vty password is missing.
- D. The console password is missing.

Correct Answer: C

Section: Security

Explanation

Explanation/Reference:

QUESTION 153

A router has two Fast Ethernet interfaces and needs to connect to four VLANs in the local network. How can you accomplish this task, using the fewest physical interfaces and without decreasing network performance?

- A. Add two more FastEthernet interfaces.
- B. Add a second router to handle the VLAN traffic.
- C. Use a hub to connect the four VLANs with a FastEthernet interface on router.
- D. Implement a router-on-a-stick configuration.

Correct Answer: D

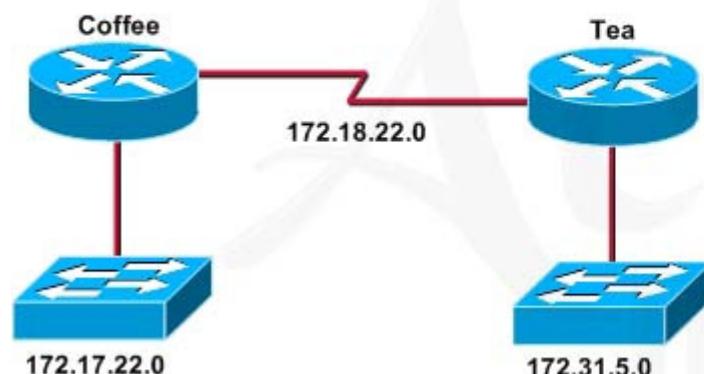
Section: VLAN

Explanation

Explanation/Reference:

QUESTION 154

Users on the 172.17.22.0 network cannot reach the server located on the 172.31.5.0 network. The network administrator connected to router Coffee via the console port, issued the `show ip route` command, and was able to ping the server.



`Coffee#show ip route`

Codes: C - connected, S - static, I - IGRP, R - RIP, M -
D - EIGRP, EX - EIGRP external, O - OSPF, IA - O-
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA
E1 - OSPF external type 1, E2 - OSPF external type 2,
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route

Gateway of last resort is 172.19.22.2 to network 0.0.0.0

C 172.17.22.0 is directly connected, FastEthernet0/0
C 172.18.22.0 is directly connected, Serial0/0
S* 0.0.0.0/0 [1/0] via 172.19.22.2

Based on the output of the `show ip route` command and the topology shown in the graphic, what is the cause of the failure?

- A. The network has not fully converged.
- B. IP routing is not enabled.
- C. A static route is configured incorrectly.
- D. The FastEthernet interface on Coffee is disabled.
- E. The neighbor relationship table is not correctly updated.
- F. The routing table on Coffee has not updated .

Correct Answer: C

Section: IP Routing

Explanation

Explanation/Reference:**QUESTION 155**

A network administrator is trying to add a new router into an established OSPF network. The networks attached to the new router do not appear in the routing tables of the other OSPF routers. Given the information in the partial configuration shown below, what configuration error is causing this problem?

```
Router(config)# router ospf 1
Router(config-router)# network 10.0.0.0 255.0.0.0 area 0
```

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

Correct Answer: C**Section: IP Routing****Explanation****Explanation/Reference:****QUESTION 156**

Which Cisco Catalyst feature automatically disables the port in an operational PortFast upon receipt of a BPDU?

- A. BackboneFast
- B. UplinkFast
- C. Root Guard
- D. BPDU Guard
- E. BPDU Filter

Correct Answer: D**Section: Switching****Explanation****Explanation/Reference:****QUESTION 157**

When you are troubleshooting an ACL issue on a router, which command can help you to verify which interfaces are affected by the ACL?

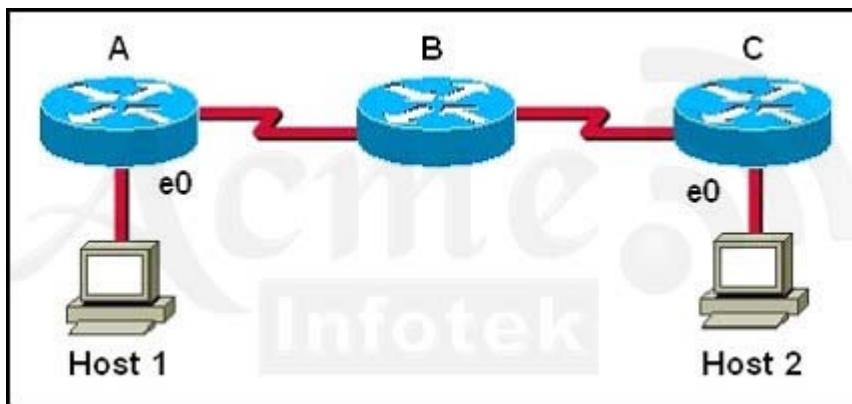
- A. show access-lists
- B. show interface
- C. show ip interface
- D. show ip access-lists
- E. list ip interface

Correct Answer: C**Section: Introduction to Cisco IOS****Explanation**

Explanation/Reference:

QUESTION 158

Host 1 is trying to communicate with Host 2. The e0 interface on Router C is down. Which of the following are true? (Choose two.)



- A. Router C will send a Destination Unreachable message type.
- B. Router C will send a Source Quench message type.
- C. Router C will use ICMP to inform Host 1, Router A, and Router B that Host 2 cannot be reached.
- D. Router C will send a Router Selection message type.
- E. Router C will use ICMP to inform Host 1 that Host 2 cannot be reached.
- F. Router C will use ICMP to inform Router B that Host 2 cannot be reached.

Correct Answer: AE

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 159

Cisco Catalyst switches CAT1 and CAT2 have a connection between them using ports FA0/13. An 802.1Q trunk is configured between the two switches.

On CAT1, VLAN 10 is chosen as native, but on CAT2 the native VLAN is not specified.

What will happen in this scenario?

- A. 802.1Q giant frames could saturate the link.
- B. VLAN 10 on CAT1 and VLAN 1 on CAT2 will send untagged frames.
- C. A native VLAN mismatch error message will appear.
- D. VLAN 10 on CAT1 and VLAN 1 on CAT2 will send tagged frames.

Correct Answer: C

Section: VLAN

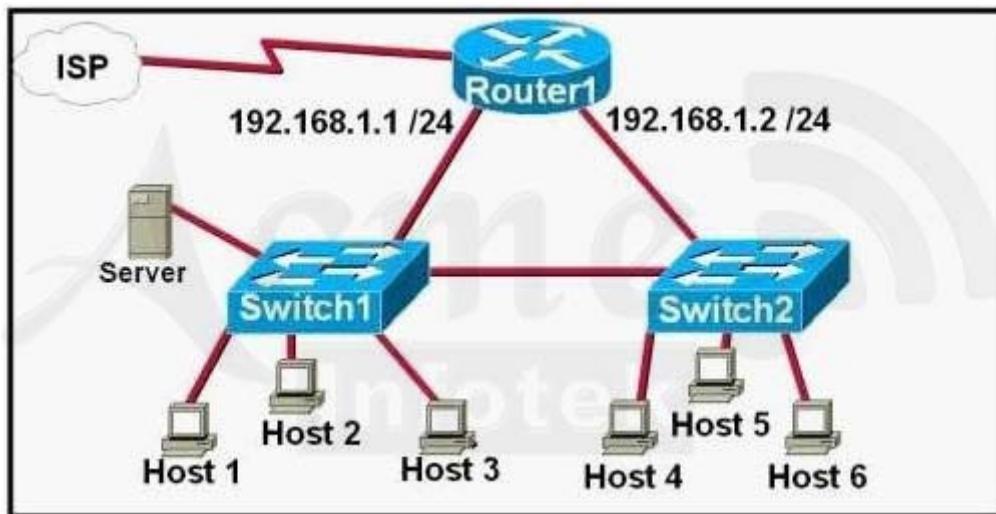
Explanation

Explanation/Reference:

QUESTION 160

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.

Correct Answer: C

Section: VLAN

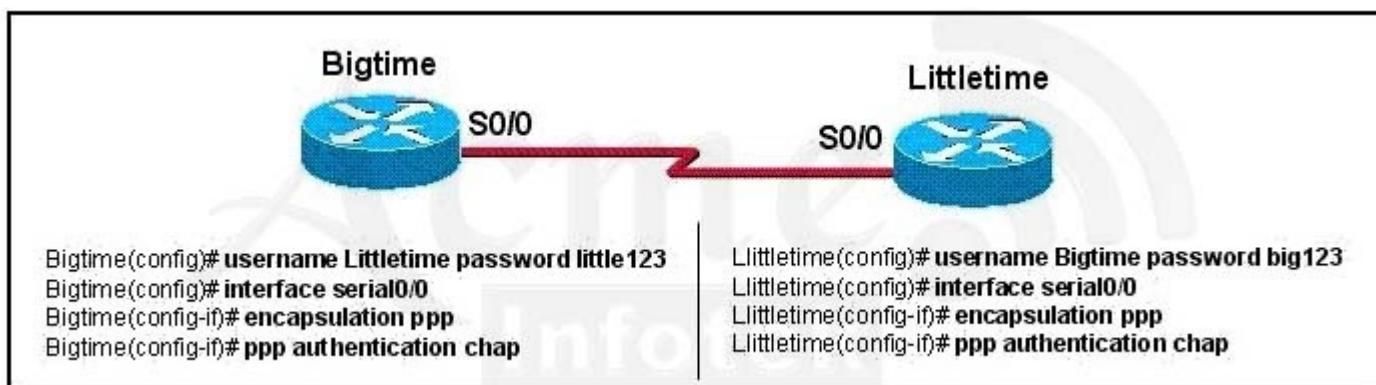
Explanation

Explanation/Reference:

QUESTION 161

Refer to the exhibit.

The Bigtime router is unable to authenticate to the Littletime router. What is the cause of the problem?



- A. The usernames are incorrectly configured on the two routers.
- B. The passwords do not match on the two routers.
- C. CHAP authentication cannot be used on a serial interface.

- D. The routers cannot be connected from interface S0/0 to interface S0/0.
- E. With CHAP authentication, one router must authenticate to another router. The routers cannot be configured to authenticate to each other.

Correct Answer: B

Section: WAN

Explanation

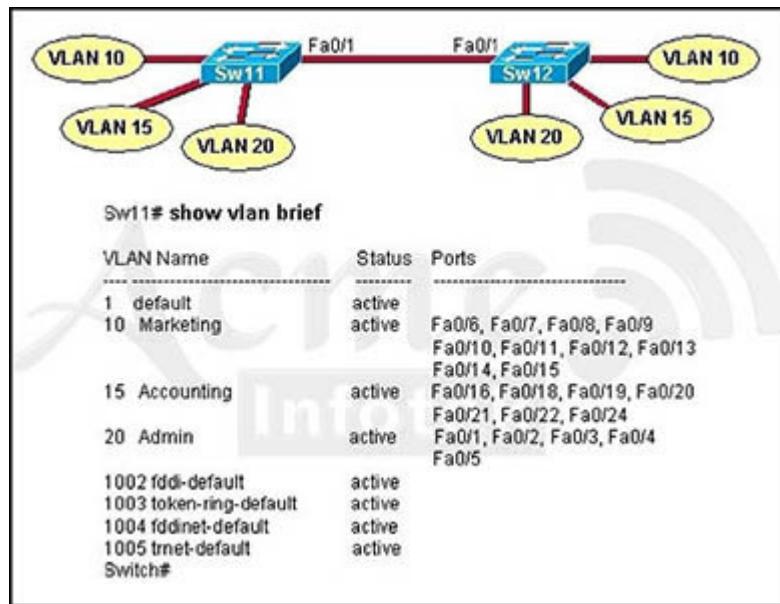
Explanation/Reference:

QUESTION 162

Refer to the topology and router output shown in the exhibit. A technician is troubleshooting host connectivity issues on the switches.

The hosts in VLANs 10 and 15 on Sw11 are unable to communicate with hosts in the same VLANs on Sw12. Hosts in the Admin VLAN are able to communicate.

The port-to-VLAN assignments are identical on the two switches. What could be the problem?



- A. The Fa0/1 port is not operational on one of the switches.
- B. The link connecting the switches has not been configured as a trunk.
- C. At least one port needs to be configured in VLAN 1 for VLANs 10 and 15 to be able to communicate.
- D. Port FastEthernet 0/1 needs to be configured as an access link on both switches.
- E. A router is required for hosts on Sw11 in VLANs 10 and 15 to communicate with hosts in the same VLAN on Sw12.

Correct Answer: B

Section: VLAN

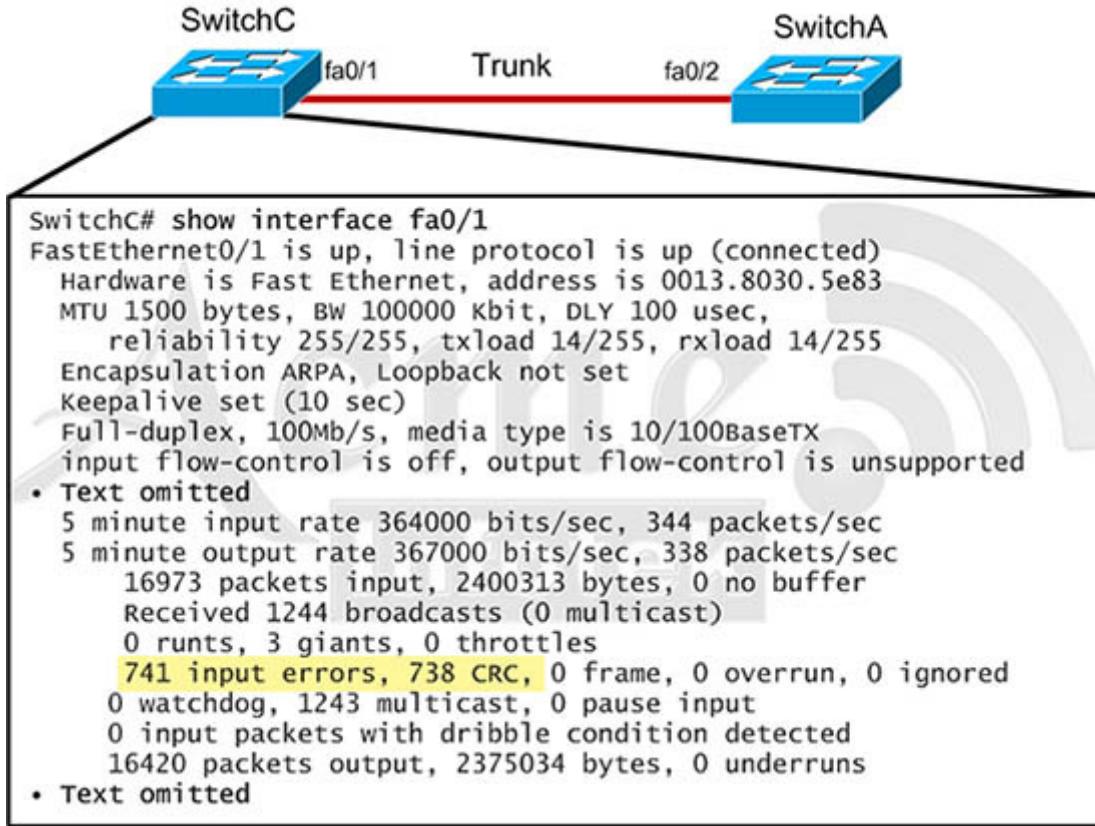
Explanation

Explanation/Reference:

QUESTION 163

Refer to the exhibit.

Given this output for SwitchC, what should the network administrator's next action be?



- A. Check the trunk encapsulation mode for SwitchC's fa0/1 port.
- B. Check the trunk encapsulation mode for SwitchA's fa0/2 port.
- C. Check the duplex mode for SwitchC's fa0/1 port.
- D. Check the duplex mode for SwitchA's fa0/2 port.

Correct Answer: D

Section: VLAN

Explanation

Explanation/Reference:

QUESTION 164

What will happen if a private IP address is assigned to a public interface connected to an ISP?

- A. Addresses in a private range will be not routed on the Internet backbone.
- B. Only the ISP router will have the capability to access the public network.
- C. The NAT process will be used to translate this address in a valid IP address.
- D. Several automated methods will be necessary on the private network.
- E. A conflict of IP addresses happens, because other public routers can use the same range.

Correct Answer: A

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 165

Refer to the exhibit.

ACL 102

```
access-list 102 deny tcp 172.21.1.1 0.0.0.255 any eq 80
access-list 102 deny any any
```

```
RouterA# show ip interface
FastEthernet0/0 is up, line protocol is up
  Internet address is 192.168.1.144/20
  Broadcast address is 255.255.255.255
  Address determined by DHCP
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is enabled
  Outgoing access list is 102
  Inbound access list is not set
  Proxy ARP is enabled
```

An attempt to deny web access to a subnet blocks all traffic from the subnet.
Which interface command immediately removes the effect of ACL 102?

- A. no ip access-class 102 out
- B. no ip access-group 102 out
- C. no ip access-group 102 in
- D. no ip access-list 102 in
- E. no ip access-class 102 in

Correct Answer: B

Section: Security

Explanation

Explanation/Reference:

QUESTION 166

Which router IOS commands can be used to troubleshoot LAN connectivity problems? (Choose three.)

- A. winipcfg
- B. tracert
- C. ping
- D. ip config
- E. show ip route
- F. show interfaces

Correct Answer: CEF

Section: Introduction to Cisco IOS

Explanation

Explanation/Reference:

QUESTION 167

A network administrator is troubleshooting the OSPF configuration of routers R1 and R2.

The routers cannot establish an adjacency relationship on their common Ethernet link.

The graphic shows the output of the `show ip ospf interface e0` command for routers R1 and R2.

R1	Ethernet0 is up, line protocol is up Internet address is 192.168.1.2/24, Area 0 Process ID 1, Router ID 192.168.31.33, Network Type BROADCAST, Cost: 1 Transmit Delay is 1 sec, State DR, Priority 1 Designated Router (ID) 192.168.31.33, Interface address 192.168.1.2 No backup designated router on this network Timer intervals configured, Hello 5, Dead 20, Wait 20, Retransmit 5
R2	Ethernet0 is up, line protocol is up Internet address is 192.168.1.1/24, Area 0 Process ID 1, Router ID 192.168.31.11, Network Type BROADCAST, Cost: 1 Transmit Delay is 1 sec, State DR, Priority 1 Designated Router (ID) 192.168.31.11, Interface address 192.168.1.11 No backup designated router on this network Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5

Based on the information in the graphic, what is the cause of this problem?

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

Correct Answer: D

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 168

In which circumstance are multiple copies of the same unicast frame likely to be transmitted in a switched LAN?

- A. after broken links are re-established.
- B. in an improperly implemented redundant topology.
- C. when upper-layer protocols require high reliability.
- D. during high traffic periods.

E. when a dual ring topology is in use.

Correct Answer: B

Section: Switching

Explanation

Explanation/Reference:

QUESTION 169

VLAN 3 is not yet configured on your switch. What happens if you set the `switchport access vlan 3` command in interface configuration mode?

- A. The command is accepted and the respective VLAN is added to `vlan.dat`.
- B. The command is rejected.
- C. The command is accepted and you must configure the VLAN manually.
- D. The port turns amber.

Correct Answer: A

Section: VLAN

Explanation

Explanation/Reference:

QUESTION 170

A network administrator is troubleshooting an EIGRP problem on a router and needs to confirm the IP addresses of the devices with which the router has established adjacency.

The retransmit interval and the queue counts for the adjacent routers also need to be checked.

What command will display the required information?

- A. Router# `show ip eigrp adjacency`
- B. Router# `show ip eigrp topology`
- C. Router# `show ip eigrp interfaces`
- D. Router# `show ip eigrp neighbors`

Correct Answer: D

Section: IP Routing

Explanation

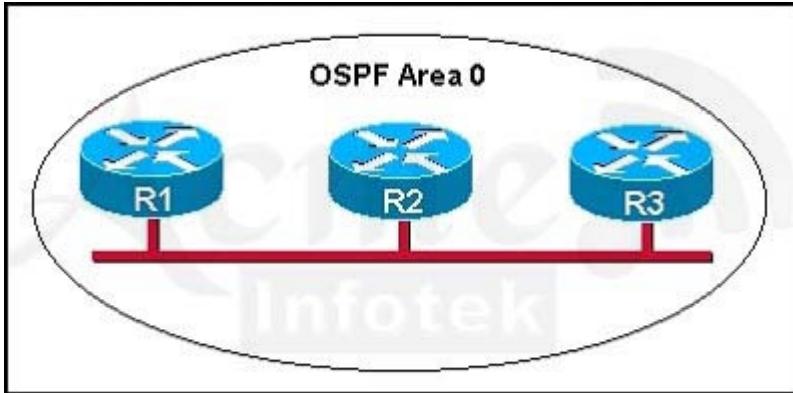
Explanation/Reference:

QUESTION 171

Refer to the graphic.

R1 is unable to establish an OSPF neighbor relationship with R3.

What are possible reasons for this problem? (Choose two.)



- A. All of the routers need to be configured for backbone Area 1.
- B. R1 and R2 are the DR and BDR, so OSPF will not establish neighbor adjacency with R3.
- C. A static route has been configured from R1 to R3 and prevents the neighbor adjacency from being established.
- D. The hello and dead interval timers are not set to the same values on R1 and R3.
- E. EIGRP is also configured on these routers with a lower administrative distance.
- F. R1 and R3 are configured in different areas.

Correct Answer: DF

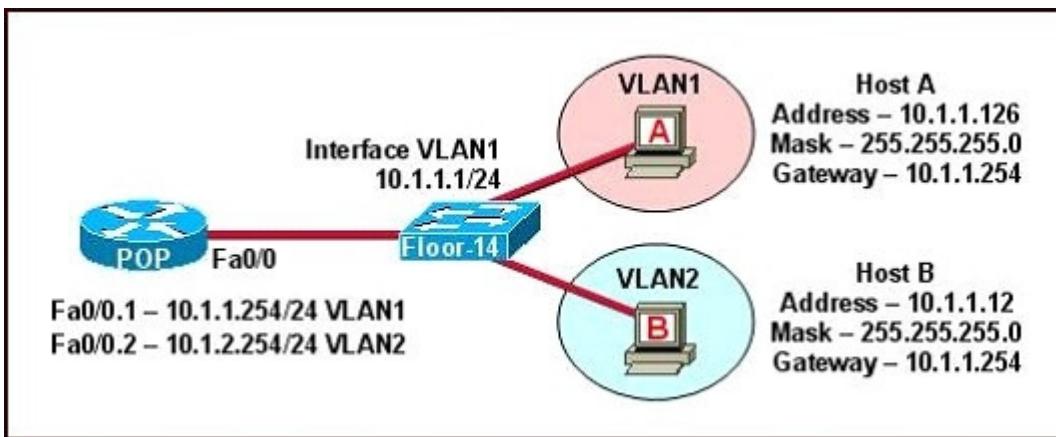
Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 172

Refer to the exhibit.



The network shown in the diagram is experiencing connectivity problems. Which of the following will correct the problems? (Choose two.)

- A. Configure the gateway on Host A as 10.1.1.1.
- B. Configure the gateway on Host B as 10.1.2.254.
- C. Configure the IP address of Host A as 10.1.2.2.
- D. Configure the IP address of Host B as 10.1.2.2.
- E. Configure the masks on both hosts to be 255.255.255.224.

F. Configure the masks on both hosts to be 255.255.255.240.

Correct Answer: BD

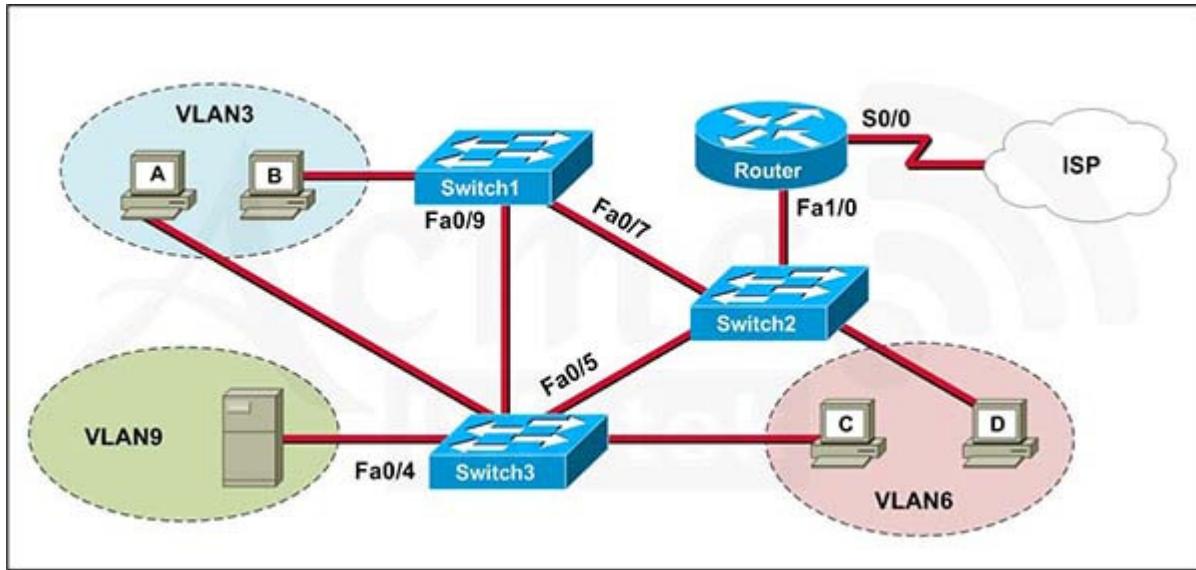
Section: VLAN

Explanation

Explanation/Reference:

QUESTION 173

Refer to the exhibit.



A problem with network connectivity has been observed. It is suspected that the cable connected to switch port Fa0/9 on Switch1 is disconnected.

What would be an effect of this cable being disconnected?

- A. Host B would not be able to access the server in VLAN 9 until the cable is reconnected.
- B. Communication between VLAN 3 and the other VLANs would be disabled.
- C. The transfer of files from Host B to the server in VLAN 9 would be significantly slower.
- D. For less than a minute, Host B would not be able to access the server in VLAN 9. Then normal network function would resume.

Correct Answer: D

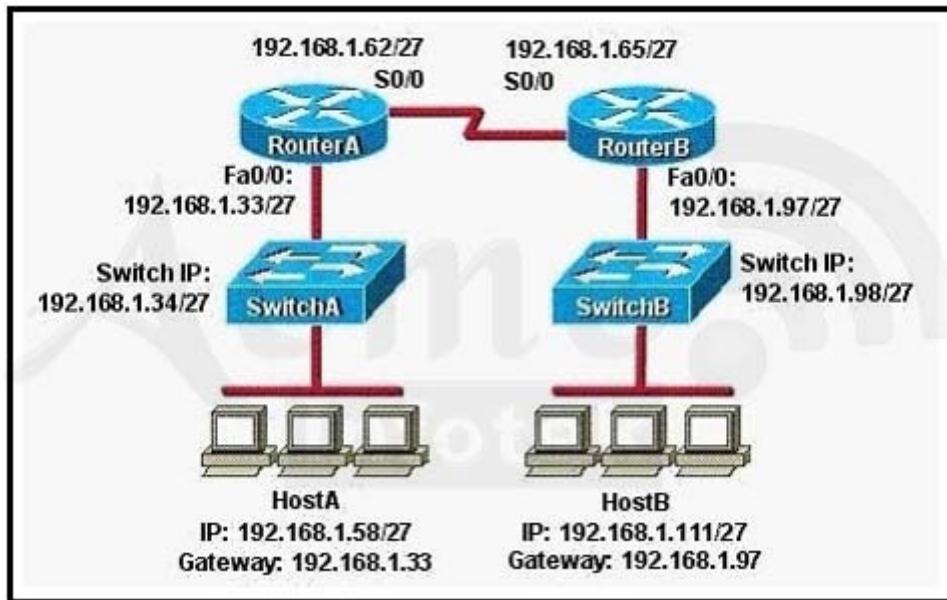
Section: VLAN

Explanation

Explanation/Reference:

QUESTION 174

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 Fa0/0 interface on RouterB is using a broadcast address.
- C. The Fa0/0 interface on RouterA is on a subnet that can't be used.
- D. The address of SwitchA is a subnet address.
- E. The serial interfaces of the routers are not on the same subnet.

Correct Answer: E

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 175

Which port state is introduced by Rapid-PVST?

- A. learning
- B. listening
- C. discarding
- D. forwarding

Correct Answer: C

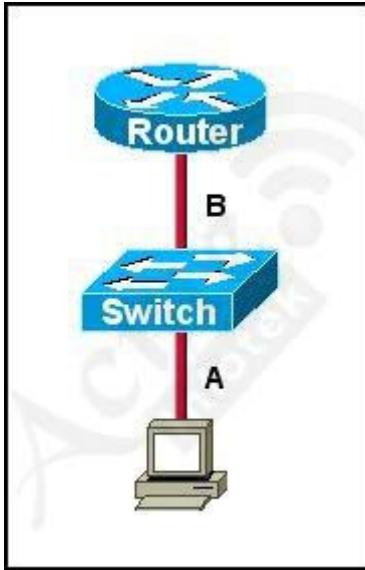
Section: Switching

Explanation

Explanation/Reference:

QUESTION 176

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.

Correct Answer: BDF

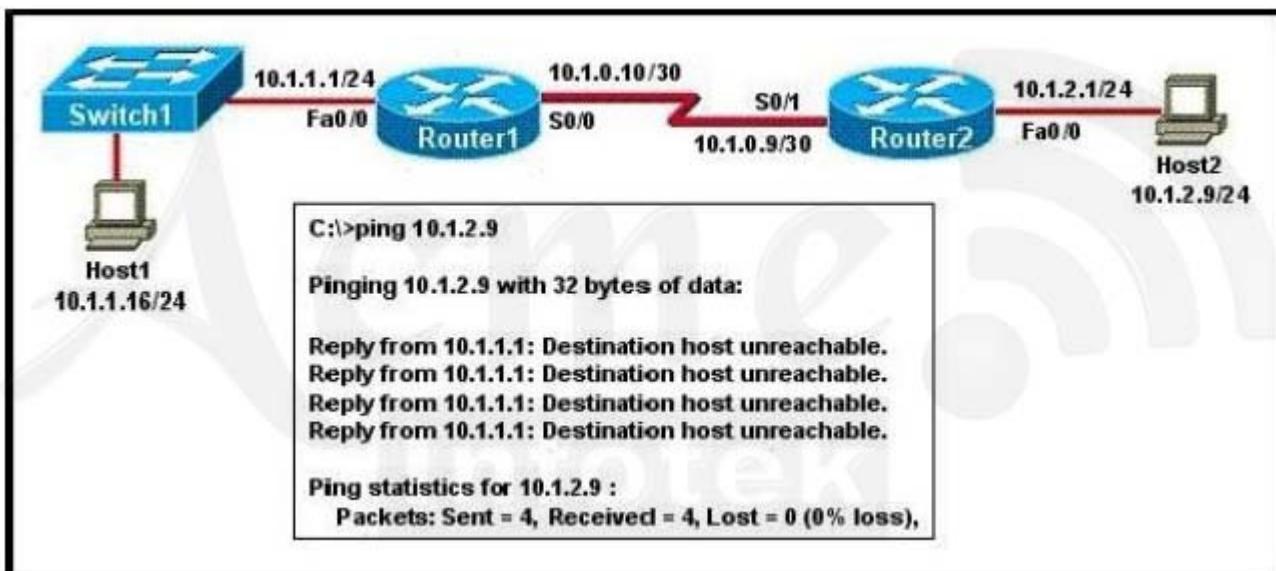
Section: Switching

Explanation

Explanation/Reference:

QUESTION 177

Refer to the exhibit.



A network administrator attempts to ping Host2 from Host1 and receives the results that are shown. What is a possible problem?

- A. The link between Host1 and Switch1 is down.
- B. Interface Fa0/0 Router1 is shutdown.
- C. TCP/IP is not functioning on Host1.
- D. The link between Router1 and Router2 is down.
- E. The link between Switch1 and Router1 is down.
- F. The default gateway on Host1 is incorrect.

Correct Answer: D

Section: IP Routing

Explanation

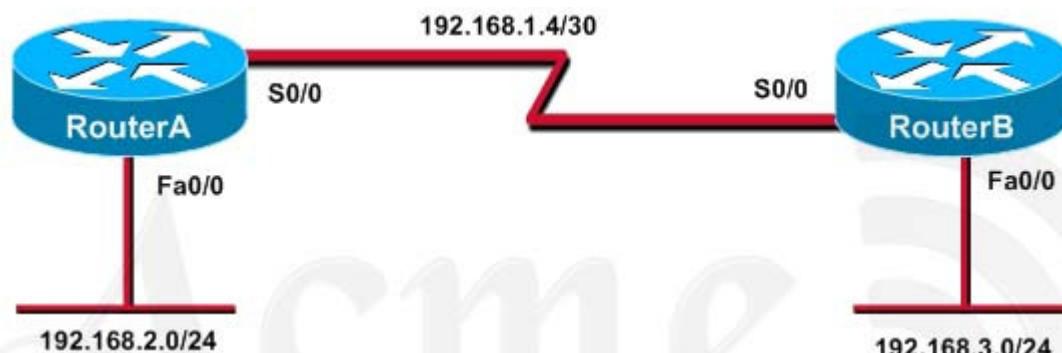
Explanation/Reference:

QUESTION 178

Refer to the exhibit.

Hosts in network 192.168.2.0 are unable to reach hosts in network 192.168.3.0.

Based on the output from RouterA, what are two possible reasons for the failure?(Choose two)



```
RouterA# show ip interface brief
Interface          Ip Address   OK? Method Status           Protocol
FastEthernet0/0    192.168.2.1  YES manual up              up
FastEthernet0/0    192.168.2.1  YES manual up              down
FastEthernet0/0    192.168.2.1  YES manual administratively down  down
```

- A. The cable that is connected to S0/0 on RouterA is faulty.
- B. Interface S0/0 on RouterB is administratively down.
- C. Interface S0/0 on RouterA is configured with an incorrect subnet mask.
- D. The IP address that is configured on S0/0 of RouterB is not in the correct subnet.
- E. Interface S0/0 on RouterA is not receiving a clock signal from the CSU/DSU.
- F. The encapsulation that is configured on S0/0 of RouterB does not match the encapsulation that is configured on S0/0 of RouterA.

Correct Answer: EF

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 179

Refer to the exhibit.

An administrator pings the default gateway at 10.10.10.1 and sees the output as shown. At which OSI layer is the problem?

```
C:\> ping 10.10.10.1
```

```
Pinging 10.10.10.1 with 32 bytes of data:
```

```
Request timed out.  
Request timed out.  
Request timed out.  
Request timed out.
```

```
Ping statistics for 10.10.10.1:
```

```
_packets: Sent = 4, Received = 0, Lost = 4 (100% loss)
```

- A. data link layer
- B. application layer
- C. access layer
- D. session layer
- E. network layer

Correct Answer: E

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 180

Which statement is correct regarding the operation of DHCP?

- A. A DHCP client uses a ping to detect address conflicts.
- B. A DHCP server uses a gratuitous ARP to detect DHCP clients.
- C. A DHCP client uses a gratuitous ARP to detect a DHCP server.
- D. If an address conflict is detected, the address is removed from the pool and an administrator must resolve the conflict.
- E. If an address conflict is detected, the address is removed from the pool for an amount of time configurable by the administrator.
- F. If an address conflict is detected, the address is removed from the pool and will not be reused until the server is rebooted.

Correct Answer: D

Section: TCP/IP

Explanation

Explanation/Reference:

QUESTION 181

Refer to the exhibit.

ACL 10**Statements are written in this order:**

- A. permit any
- B. deny 172.21.1.128 0.0.0.15
- C. permit 172.21.1.129 0.0.0.0
- D. permit 172.21.1.142 0.0.0.0

Statements A, B, C, and D of ACL 10 have been entered in the shown order and applied to interface E0 inbound, to prevent all hosts (except those whose address are the first and last IP of subnet 172.21.1.128/28) from accessing the network.

But, as is, the ACL does not restrict anyone from the network. How can the ACL statements be re-arranged so that the system works as intended?

- A. CDBA
- B. ACDB
- C. BADC
- D. DBAC

Correct Answer: A**Section: Security****Explanation****Explanation/Reference:****QUESTION 182**

The output of the `show frame-relay pvc` command shows "PVC STATUS=INACTIVE". What does this mean?

- A. The PVC is configured correctly and is operating normally, but no data packets have been detected for more than five minutes.
- B. The PVC is configured correctly, is operating normally, and is no longer actively seeking the address the remote route.
- C. The PVC is configured correctly, is operating normally, and is waiting for interesting to trigger a call to the remote router.
- D. The PVC is configured correctly on the local switch, but there is a problem on the remote end of the PVC.
- E. The PVC is not configured on the switch.

Correct Answer: D**Section: WAN****Explanation****Explanation/Reference:****QUESTION 183**

Which command is used to enable CHAP authentication, with PAP as the fallback method, on a serial interface?

- A. Router(config-if)# ppp authentication chap fallback ppp
- B. Router(config-if)# authentication ppp chap fallback ppp
- C. Router(config-if)# ppp authentication chap pap
- D. Router(config-if)# authentication ppp chap pap

Correct Answer: C

Section: WAN

Explanation

Explanation/Reference:

QUESTION 184

Which protocol is an open standard protocol framework that is commonly used in VPNs to provide secure end-to-end communications?

- A. PPTP
- B. IPsec
- C. RSA
- D. L2TP

Correct Answer: B

Section: WAN

Explanation

Explanation/Reference:

QUESTION 185

At which layer of the OSI model does PPP perform?

- A. Layer 2
- B. Layer 4
- C. Layer 5
- D. Layer 3

Correct Answer: A

Section: WAN

Explanation

Explanation/Reference:

QUESTION 186

The command `frame-relay map ip 10.121.16.8 102 broadcast` was entered on the router. Which of the following statements is true concerning this command?

- A. This command should be executed from the global configuration mode.
- B. The IP address 10.121.16.8 is the local router port used to forward data.
- C. 102 is the remote DLCI that will receive the information.
- D. This command is required for all Frame Relay configurations.
- E. The broadcast option allows packets, such as RIP updates, to be forwarded across the PVC.

Correct Answer: E

Section: WAN
Explanation

Explanation/Reference:

QUESTION 187

Which two options are valid WAN connectivity methods? (Choose two.)

- A. PPP
- B. WAP
- C. DSL
- D. L2TPv3
- E. Ethernet

Correct Answer: AC

Section: WAN
Explanation

Explanation/Reference:

QUESTION 188

Which Layer 2 protocol encapsulation type supports synchronous and asynchronous circuits and has built-in security mechanisms?

- A. Frame Relay
- B. X.25
- C. PPP
- D. HDLC

Correct Answer: C

Section: WAN
Explanation

Explanation/Reference:

QUESTION 189

Which encapsulation type is a Frame Relay encapsulation type that is supported by Cisco routers?

- A. Q9333-AAnnexA
- B. ANSI Annex D
- C. HDLC
- D. IETF

Correct Answer: D

Section: WAN
Explanation

Explanation/Reference:

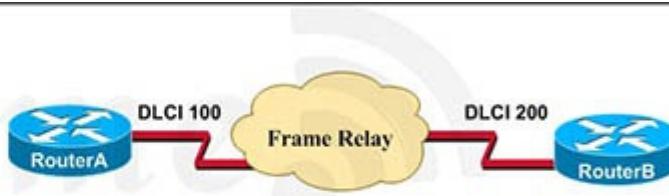
QUESTION 190

RouterA is unable to reach RouterB. Both routers are running IOS version 12.0. After reviewing the command output and graphic, what is the most likely cause of the problem?

```

RouterA# show running-config
<some output text omitted>
interface serial0/0
bandwidth 64
ip address 172.16.100.2 255.255.255.0
encapsulation frame-relay
frame-relay map ip 172.16.100.1 200 broadcast

```



- A. incorrect bandwidth configuration
- B. incorrect LMI configuration
- C. incorrect map statement
- D. incorrect IP address

Correct Answer: C

Section: WAN

Explanation

Explanation/Reference:

QUESTION 191

Refer to the exhibit.

What is the meaning of the term dynamic as displayed in the output of the show frame-relay map command shown?

```

R1# show frame-relay map
Serial0/0 (up): ip 172.16.3.1 dlci 100 (0x64, 0x1840), dynamic
    broadcast,, status defined, active

```

- A. The Serial0/0 interface is passing traffic.
- B. The DLCI 100 was dynamically allocated by the router.
- C. The Serial0/0 interface acquired the IP address of 172.16.3.1 from a DHCP server.
- D. The DLCI 100 will be dynamically changed as required to adapt to changes in the Frame Relay cloud.
- E. The mapping between DLCI 100 and the end station IP address 172.16.3.1 was learned through inverse ARP.

Correct Answer: E

Section: WAN

Explanation

Explanation/Reference:

QUESTION 192

A network administrator needs to configure a serial link between the main office and a remote location. The router at the remote office is a non-Cisco router.

How should the network administrator configure the serial interface of the main office router to make the connection?

- A. Main(config)# interface serial 0/0

Main(config-if)# ip address 172.16.1.1 255.255.255.252

```

Main(config-if)# encapsulation ietf
Main(config-if)# no shut
B. Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# no shut
C. Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# encapsulation PPP
Main(config-if)# no shut
D. Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# encapsulation frame-relay
Main(config-if)# authentication chap
Main(config-if)# no shut

```

Correct Answer: C

Section: WAN

Explanation

Explanation/Reference:

QUESTION 193

What are three reasons that an organization with multiple branch offices and roaming users might implement a Cisco VPN solution instead of point-to-point WAN links? (Choose three.)

- A. reduced cost
- B. better throughput
- C. broadband incompatibility
- D. increased security
- E. scalability
- F. reduced latency

Correct Answer: ADE

Section: WAN

Explanation

Explanation/Reference:

QUESTION 194

Which two statistics appear in show frame-relay map output? (Choose two.)

- A. the number of BECN packets that are received by the router.
- B. the value of the local DLCI.
- C. the number of FECN packets that are received by the router.
- D. the status of the PVC that is configured on the router.
- E. the IP address of the local router.

Correct Answer: BD

Section: WAN

Explanation

Explanation/Reference:

QUESTION 195

Users have been complaining that their Frame Relay connection to the corporate site is very slow.

The network administrator suspects that the link is overloaded.

Based on the partial output of the

Router# show frame relay pvc

command shown in the graphic,

which output value indicates to the local router that traffic sent to the corporate site is experiencing congestion?

PVC Statistics for interface Serial0 (Frame Relay DTE)				
	Active	Inactive	Deleted	Static
Local	1	0	0	0
Switched	0	0	0	0
Unused	0	0	0	0
DLCI=100, DLCI USAGE=LOCAL, PVC STATUS=ACTIVE, INTERFACE=Serial0				
input pkts	1300		output pkts	1270
out bytes	21802000		dropped pkts	4
in BECN pkts	192		out FECN pkts	259
in DE pkts	0		out DE pkts	0
out bcast pkts	1007		out bcast bytes	19722
Pvc create time	00:25:50		last time pvc status changed	00:25:40

- A. DLCI=100
- B. last time PVC status changed 00:25:40
- C. in BECN packets 192
- D. in FECN packets 147
- E. in DF packets 0

Correct Answer: C

Section: WAN

Explanation

Explanation/Reference:

QUESTION 196

Which command allows you to verify the encapsulation type (CISCO or IETF) for a frame Relay link?

- A. show frame-relay map
- B. show frame-relay pvc
- C. show frame-relay lmi
- D. show interfaces serial

Correct Answer: A

Section: WAN

Explanation

Explanation/Reference:

QUESTION 197

It has become necessary to configure an existing serial interface to accept a second Frame Relay virtual circuit. Which of the following procedures are required to accomplish this task? (Choose three.)

- A. Remove the IP address from the physical interface.
- B. Encapsulate the physical interface with multipoint PPP.
- C. Create the virtual interfaces with the interface command.
- D. Configure each subinterface with its own IP address.
- E. Disable split horizon to prevent routing loops between the subinterface networks.
- F. Configure static Frame Relay map entries for each subinterface network.

Correct Answer: ACD

Section: WAN

Explanation

Explanation/Reference:

QUESTION 198

What occurs on a Frame Relay network when the CIR is exceeded?

- A. All TCP traffic is marked discard eligible.
- B. All UDP traffic is marked discard eligible and a BECN is sent.
- C. All TCP traffic is marked discard eligible and a BECN is sent.
- D. All traffic exceeding the CIR is marked discard eligible.

Correct Answer: D

Section: WAN

Explanation

Explanation/Reference:

QUESTION 199

Which two statements about using the CHAP authentication mechanism in a PPP link are true? (Choose two.)

- A. CHAP uses a two-way handshake.
- B. CHAP uses a three-way handshake.
- C. CHAP authentication periodically occurs after link establishment.
- D. CHAP authentication passwords are sent in plaintext.
- E. CHAP authentication is performed only upon link establishment.
- F. CHAP has no protection from playback attacks.

Correct Answer: BC

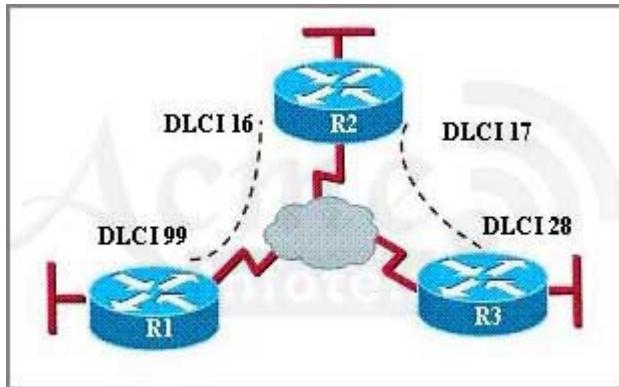
Section: WAN

Explanation

Explanation/Reference:

QUESTION 200

Refer to the exhibit. Which statement describes DLCI 17?



- A. DLCI 17 is the Layer 2 address used by R2 to describe a PVC to R3.
- B. DLCI 17 describes a PVC on R2. It cannot be used on R3 or R1.
- C. DLCI 17 describes the dial-up circuit from R2 and R3 to the service provider.
- D. DLCI 17 describes the ISDN circuit between R2 and R3.

Correct Answer: A

Section: WAN

Explanation

Explanation/Reference:

QUESTION 201

What is the result of issuing the `frame-relay map ip 192.168.1.2 202 broadcast` command?

- A. defines the destination IP address that is used in all broadcast packets on DCLI 202.
- B. defines the source IP address that is used in all broadcast packets on DCLI 202.
- C. defines the DLCI on which packets from the 192.168.1.2 IP address are received.
- D. defines the DLCI that is used for all packets that are sent to the 192.168.1.2 IP address.

Correct Answer: D

Section: WAN

Explanation

Explanation/Reference:

QUESTION 202

Which PPP subprotocol negotiates authentication options?

- A. SLIP
- B. NCP
- C. ISDN
- D. LCP
- E. DLCI

Correct Answer: D

Section: WAN

Explanation

Explanation/Reference:

QUESTION 203

What are two characteristics of Frame Relay point-to-point subinterfaces? (Choose two.)

- A. They create split-horizon issues.
- B. They require a unique subnet within a routing domain.
- C. They emulate leased lines.
- D. They are ideal for full-mesh topologies.
- E. They require the use of NBMA options when using OSPF.

Correct Answer: BC

Section: WAN

Explanation

Explanation/Reference:

QUESTION 204

Which command can be used to verify the DLCI destination address in a Frame Relay static configuration?

- A. show frame-relay end-to-end
- B. show frame-relay map
- C. show frame-relay lmi
- D. show frame-relay pvc

Correct Answer: B

Section: WAN

Explanation

Explanation/Reference:

QUESTION 205

What is the purpose of Inverse ARP?

- A. to map a known IP address to a MAC address.
- B. to map a known SPID to a MAC address.
- C. to map a known MAC address to an IP address.
- D. to map a known DLCI to an IP address.
- E. to map a known IP address to a SPID.
- F. to map a known DLCI to a MAC address.

Correct Answer: D

Section: WAN

Explanation

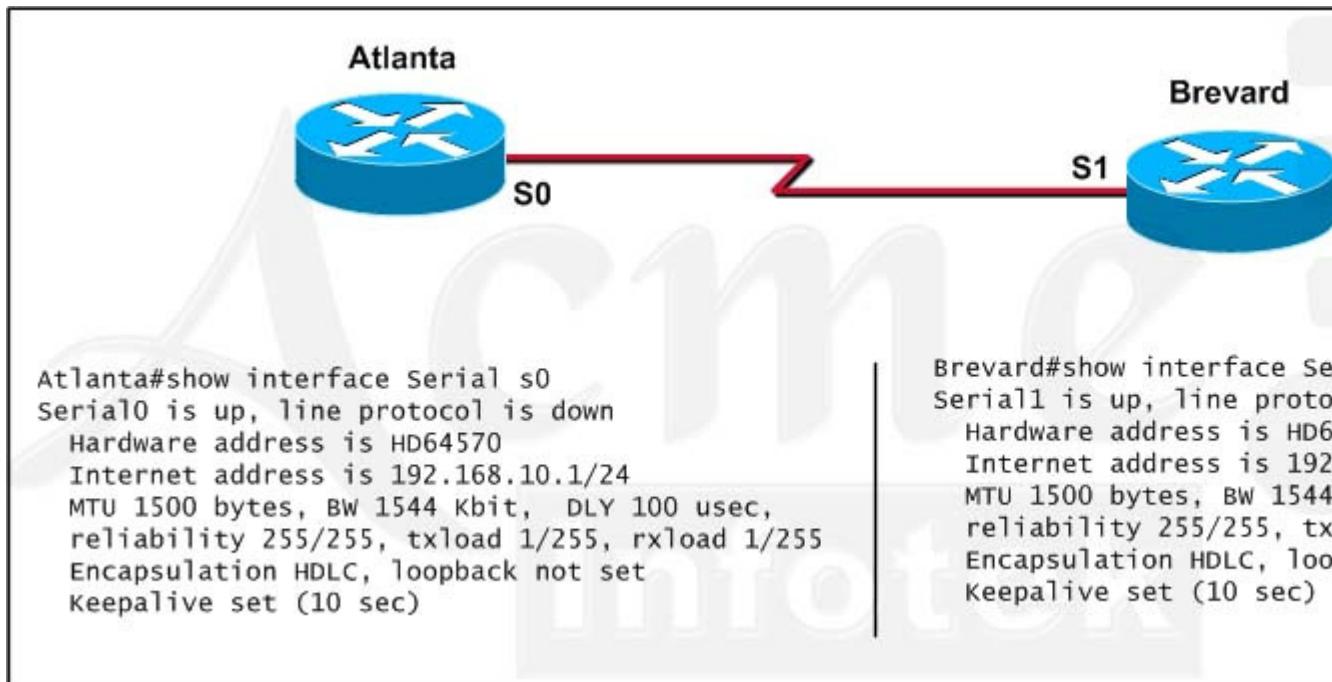
Explanation/Reference:

QUESTION 206

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?



- A. incompatible IP addresses
- B. insufficient bandwidth
- C. incorrect subnet mask
- D. incompatible encapsulation
- E. Link reliability too low
- F. IPCP closed

Correct Answer: A

Section: IP Routing

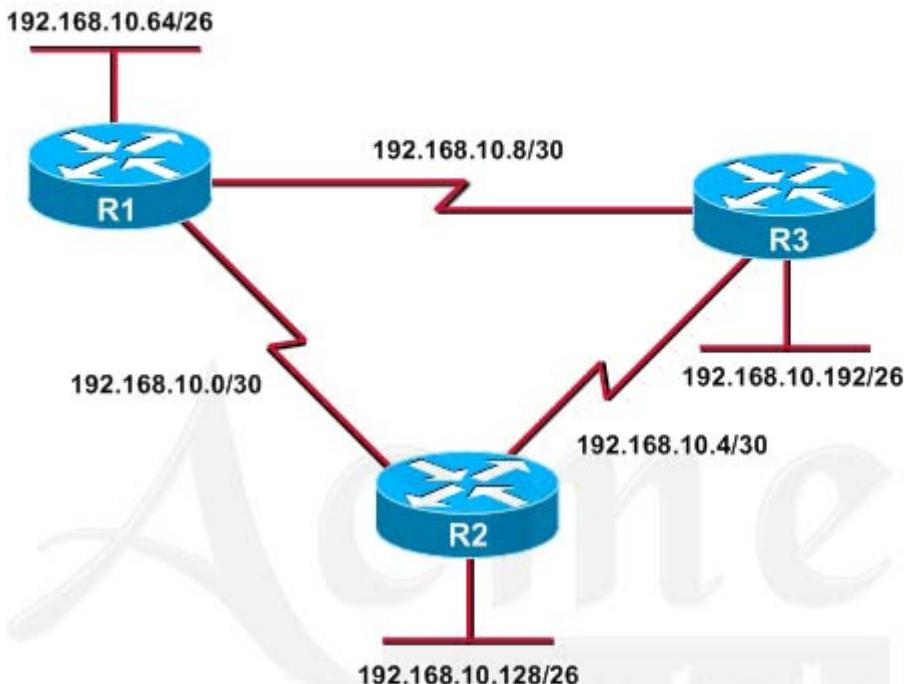
Explanation

Explanation/Reference:

QUESTION 207

Refer to the exhibit. The company uses EIGRP as the routing protocol.

What path will packets take from a host on 192.168.10.192/26 network to a host on the LAN attached to router R1?



R3# show ip route

```

Gateway of last resort is not set
192.168.10.0/24 is variably subnetted, 6 subnets, 2 masks
D      192.168.10.64/26 [90/2195456] via 192.168.10.9 00:03:31, Serial0/0
D      192.168.10.0/30 [90/2681856] via 192.168.10.9 00:03:31, Serial0/0
C      192.168.10.4/30 is directly connected, Serial 0/1
C      192.168.10.8/30 is directly connected, Serial 0/0
C      192.168.10.192/26 is directly connected, FastEthernet 0/0
D      192.168.10.128/26 [90/2195456] via 192.168.10.5 00:03:31, Serial0/1

```

- A. The path of the packets will be R3 to R2 to R1.
- B. The path of the packets will be R3 to R1 to R2.
- C. The path of the packets will be both R3 to R2 to R1 AND R3 to R1.
- D. The path of the packets will be R3 to R1.

Correct Answer: D

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 208

How does using the `service password-encryption` command on a router provide additional security?

- A. by encrypting all passwords passing through the router.
- B. by encrypting passwords in the plain text configuration file.
- C. by requiring entry of encrypted passwords for access to the device.
- D. by configuring an MD5 encrypted key to be used by routing protocols to validate routing exchanges.
- E. by automatically suggesting encrypted passwords for use in configuring the router.

Correct Answer: B

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 209

Refer to the exhibit.

Switch port FastEthernet 0/24 on ALSwitch1 will be used to create an IEEE 802.1Q-compliant trunk to another switch.

Based on the output shown, what is the reason the truck does not form, even though the proper cabling has been attached?

```
ALSwitch# show running-config
<output omitted>
Interface FastEthernet0/24 no ip address
<output omitted>
ALSwitch# show interfaces FastEthernet0/24 switchport
Name: Fa0/24
Switchport: Enabled
Administrative Mode: static access
Operation Mode: static access
Administrative Trunking Encapsulation: dot1q
Operation Trunking Encapsulation: native
Negotiation of Trunking: off
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Trunking VLANS Enabled: ALL
Pruning VLANS Enabled: 2-1001
Capture Mode Disabled
Capture VLANS Allowed: ALL

Protected: false

Voice VLAN: none (Inactive)
Appliance trust: none
```

- A. VLANs have not been created yet.
- B. An IP address must be configured for the port.
- C. The port is currently configured for access mode.
- D. The correct encapsulation type has not been configured.
- E. The no shutdown command has not been entered for the port.

Correct Answer: C

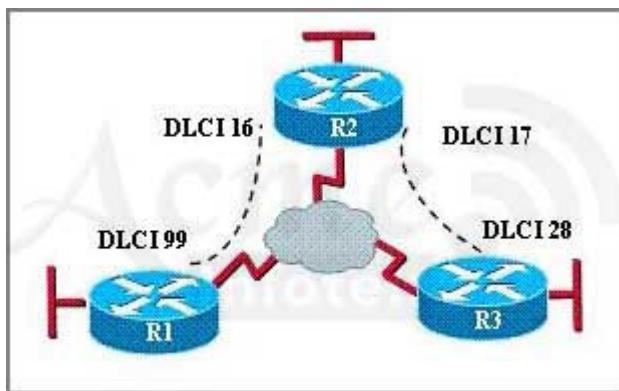
Section: VLAN

Explanation

Explanation/Reference:

QUESTION 210

Refer to the exhibit.



In the Frame Relay network, which IP addresses would be assigned to the interfaces with point-to-point PVCs?

- A. DLCI 16: 192.168.10.1 /24
DLCI 17: 192.168.10.1 /24
DLCI 99: 192.168.10.2 /24
DLCI 28: 192.168.10.3 /24
- B. DLCI 16: 192.168.10.1 /24
DLCI 17: 192.168.11.1 /24
DLCI 99: 192.168.12.1 /24
DLCI 28: 192.168.13.1 /24
- C. DLCI 16: 192.168.10.1 /24
DLCI 17: 192.168.10.2 /24
DLCI 99: 192.168.10.3 /24
DLCI 28: 192.168.10.4 /24
- D. DLCI 16: 192.168.10.1 /24
DLCI 17: 192.168.11.1 /24
DLCI 99: 192.168.10.2 /24
DLCI 28: 192.168.11.2 /24

Correct Answer: D

Section: WAN

Explanation

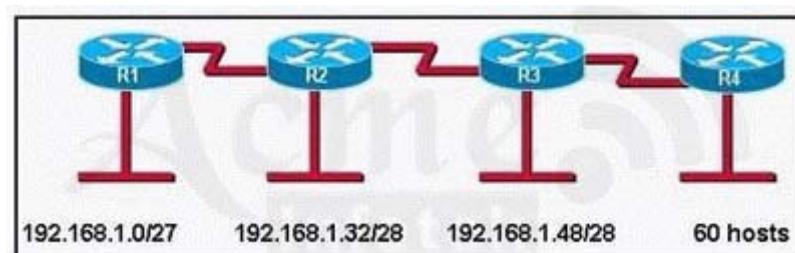
Explanation/Reference:

383

QUESTION 211

Refer to the exhibit. A new subnet with 60 hosts has been added to the network.

Which subnet address should this network use to provide enough usable addresses while wasting the fewest addresses?



- A. 192.168.1.56/27
- B. 192.168.1.64/26
- C. 192.168.1.64/27
- D. 192.168.1.56/26

Correct Answer: B

Section: IP Addressing / VLSM

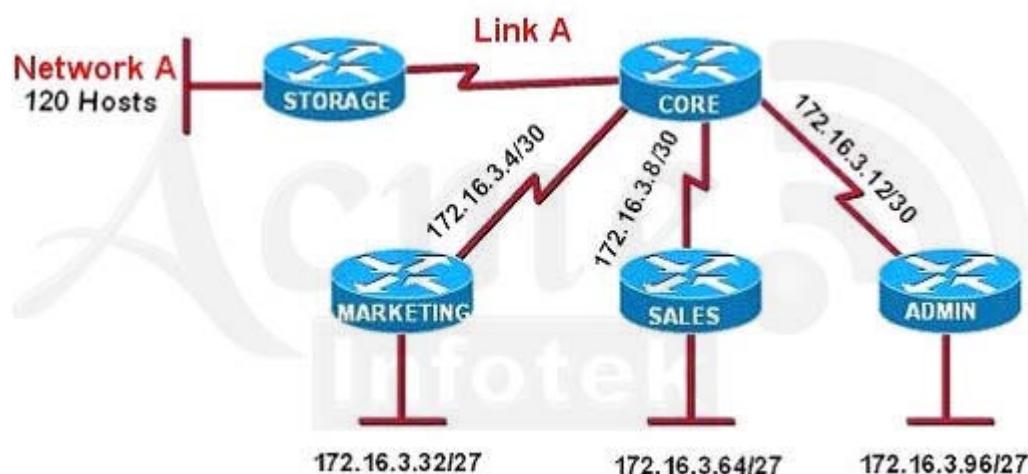
Explanation

Explanation/Reference:

QUESTION 212

Refer to the exhibit.

All of the routers in the network are configured with the `ip subnet-zero` command. Which network addresses should be used for Link A and Network A? (Choose two.)



- A. Network A - 172.16.3.48/26
- B. Network A - 172.16.3.128/25
- C. Network A - 172.16.3.192/26
- D. Link A - 172.16.3.0/30
- E. Link A - 172.16.3.40/30
- F. Link A - 172.16.3.112/30

Correct Answer: BD

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 213

A router has learned three possible routes that could be used to reach a destination network. One route is from EIGRP and has a composite metric of 20514560.

Another route is from OSPF with a metric of 782. The last is from RIPv2 and has a metric of 4. Which route or routes will the router install in the routing table?

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

Correct Answer: B

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 214

A network administrator needs to allow only one Telnet connection to a router.

For anyone viewing the configuration and issuing the show run command, the password for Telnet access should be encrypted.

Which set of commands will accomplish this task?

- A. service password-encryption
access-list 1 permit 192.168.1.0 0.0.0.255
line vty0 4
login
password cisco
access-class 1
- B. enable password secret
line vty0
login
password cisco
- C. service password-encryption
line vty1
login
password cisco
- D. service password-encryption
line vty0 4
login
password cisco

Correct Answer: C

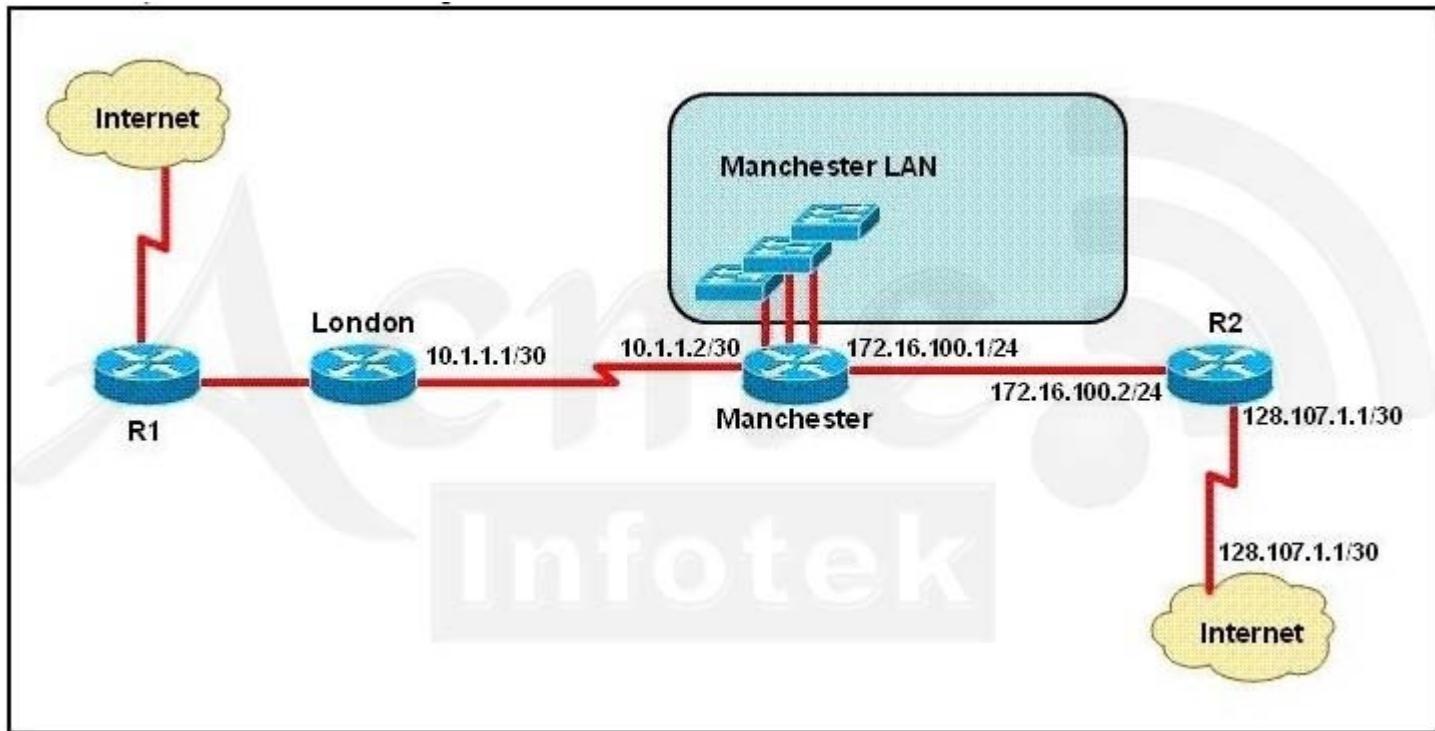
Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 215

Refer to the exhibit.



The speed of all serial links is E1 and the speed of the all Ethernet links is 100Mb/s.

A static route will be established on the Manchester router to the direct traffic toward the internet over the most direct path available.

What configuration on the Manchester router will establish a router toward the internet for traffic that originates from workstation on the Manchester LAN?

- A. ip route 0.0.0.0 255.255.255.0 172.16.100.2
- B. ip route 0.0.0.0 255.255.255.252 128.107.1.1
- C. ip route 0.0.0.0 0.0.0.0 128.107.1.1
- D. ip route 0.0.0.0 0.0.0.0 172.16.100.1
- E. ip route 0.0.0.0 255.255.255.255 172.16.100.2
- F. ip route 0.0.0.0 0.0.0.0 172.16.100.2

Correct Answer: F

Section: IP Routing

Explanation

Explanation/Reference:

We use default routing to send packets with a remote destination network not in the routing table to the next-hop router.

You should generally only use default routing on stub networks--those with only one exit path out of the network.

According to exhibit, all traffic towards Internet that originates from workstations should forward to Router R1.

Syntax for default route is:

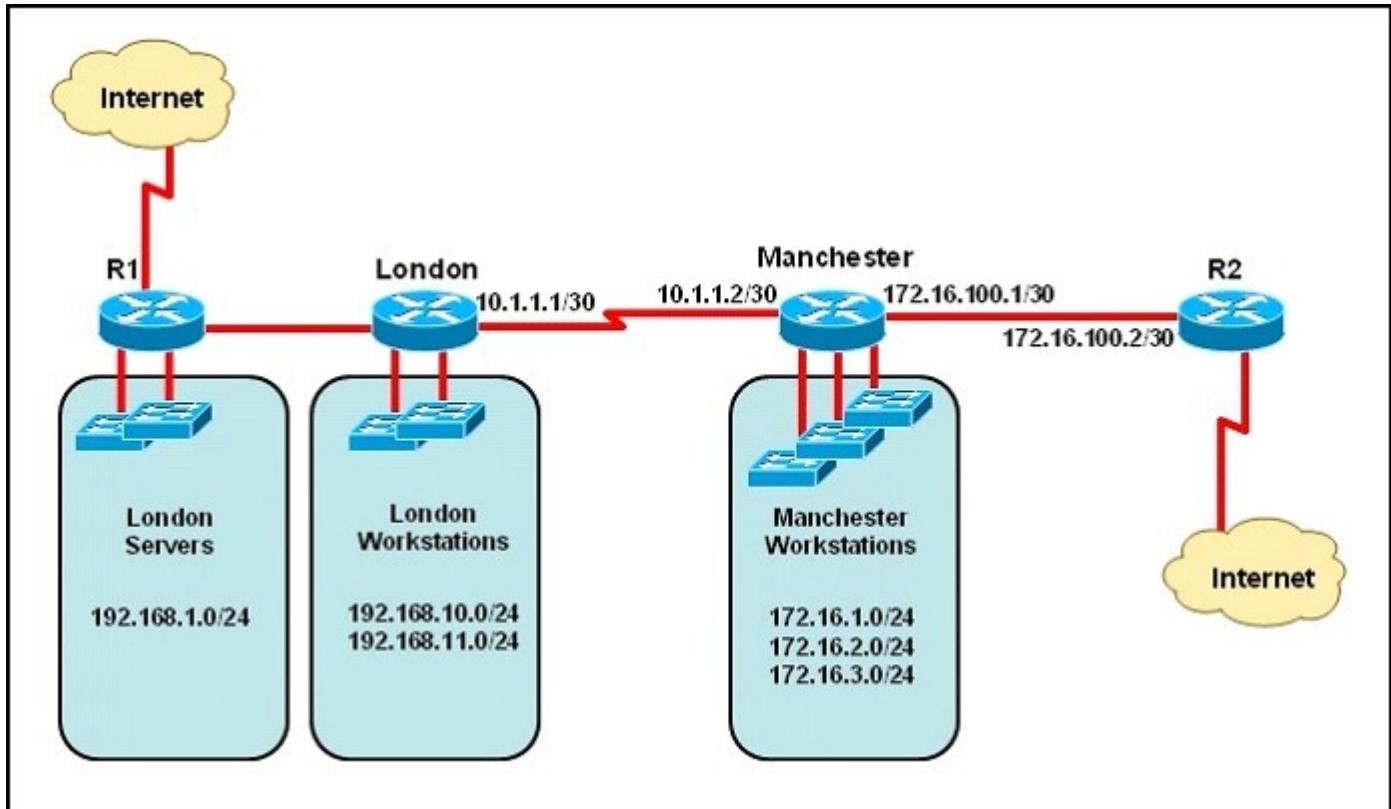
ip route <Remote_Network> <Netmask> <Next_Hop_Address>.

QUESTION 216

Refer to the exhibit.

The network administrator must establish a route by which London workstations can forward traffic to the Manchester workstations.

What is the simplest way to accomplish this?



- A. Configure a dynamic routing protocol on London to advertise all routes to Manchester.
- B. Configure a dynamic routing protocol on London to advertise summarized routes to Manchester.
- C. Configure a dynamic routing protocol on Manchester to advertise a default route to the London router.
- D. Configure a static default route on London with a next hop of 10.1.1.1.
- E. Configure a static route on London to direct all traffic destined for 172.16.0.0/22 to 10.1.1.2.
- F. Configure Manchester to advertise a static default route to London.

Correct Answer: E

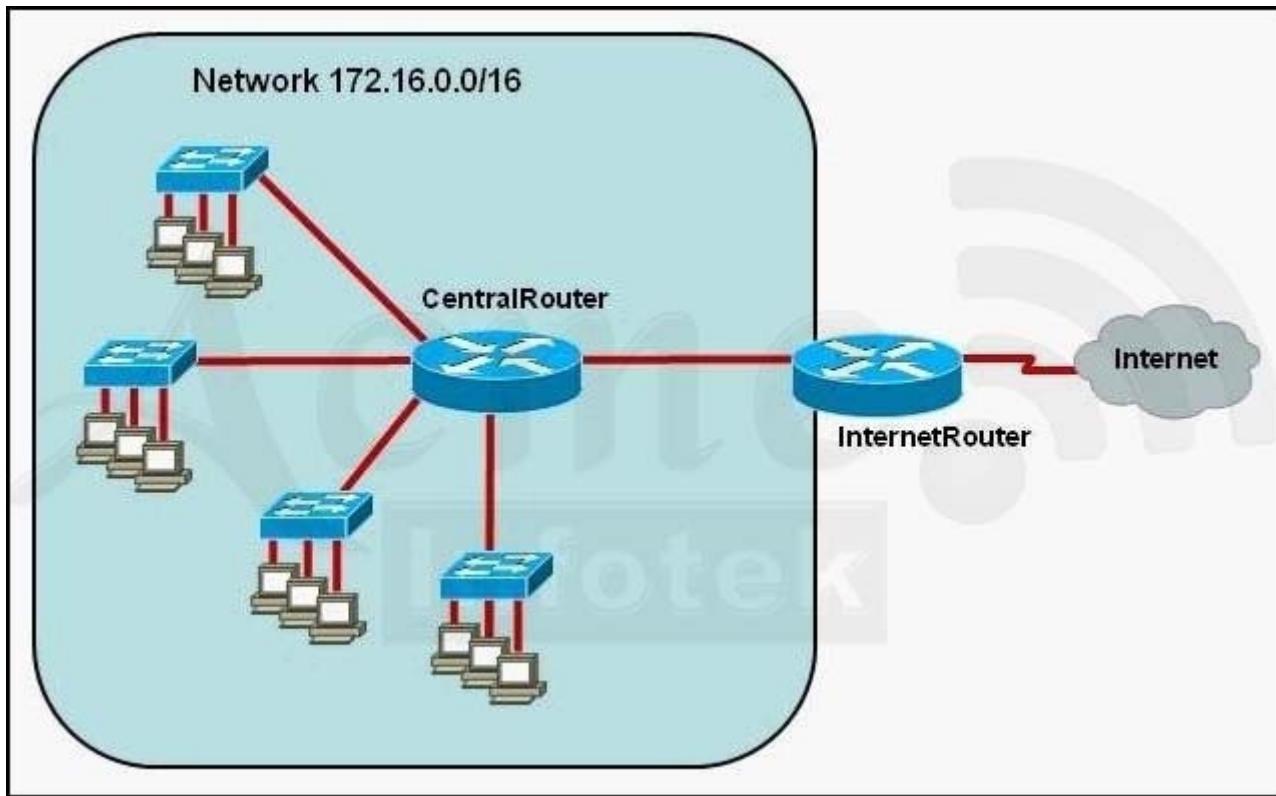
Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 217

Refer to the exhibit.



The network administrator requires easy configuration options and minimal routing protocol traffic. What two options provide adequate routing table information for traffic that passes between the two routers and satisfy the requests of the network administrator? (Choose two)

- A. a dynamic routing protocol on InternetRouter to advertise all routes to CentralRouter.
- B. a dynamic routing protocol on InternetRouter to advertise summarized routes to CentralRouter.
- C. a static route on InternetRouter to direct traffic that is destined for 172.16.0.0/16 to CentralRouter.
- D. a dynamic routing protocol on CentralRouter to advertise all routes to InternetRouter.
- E. a dynamic routing protocol on CentralRouter to advertise summarized routes to InternetRouter.
- F. a static, default route on CentralRouter that directs traffic to InternetRouter.

Correct Answer: CF

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 218

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

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

Correct Answer: B

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 219

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

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

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

Correct Answer: B

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 220

Refer to the exhibit.

```
Router# show interface s0/0/0
Serial 0/0/0 is administratively down, line protocol is down
```

What is the reason that the interface status is "administratively down, line protocol down"?

- A. There is no encapsulation type configured.
- B. There is a mismatch in encapsulation types.
- C. The interface is not receiving any keepalives.
- D. The interface has been configured with the shutdown command.
- E. The interface needs to be configured as a DTE device.
- F. The wrong type of cable is connected to the interface.

Correct Answer: D

Section: Introduction to Cisco IOS

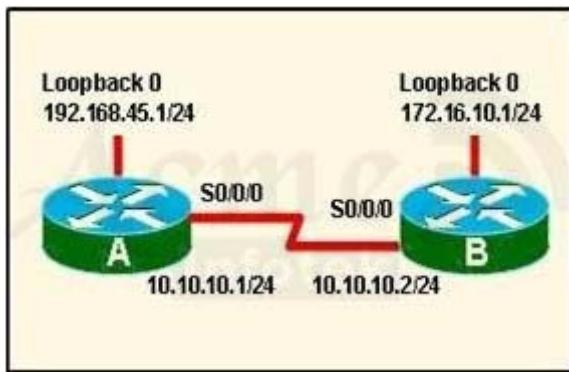
Explanation

Explanation/Reference:

QUESTION 221

Refer to the exhibit.

When running OSPF, What would cause router A not to form an adjacency with router B?



- A. The loopback addresses are on different subnets.
- B. The values of the dead timers on the routers are different.
- C. Route summarization is enabled on both routers.
- D. The process identifier on router A is different than the process identifier on router B.

Correct Answer: B

Section: IP Routing

Explanation

Explanation/Reference:

To form an adjacency (become neighbor), router A & B must have the same Hello interval, Dead interval and AREA number.

QUESTION 222

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

- A. There are four types of IPv6 addresses: unicast, multicast, anycast, and broadcast.
- B. A single interface may be assigned multiple IPv6 addresses of any type.
- C. Every IPv6 interface contains at least one loopback address.
- D. The first 64 bits represent the dynamically created interface ID.
- E. Leading zeros in an IPv6 16 bit hexadecimal field are mandatory.

Correct Answer: BC

Section: IPv6

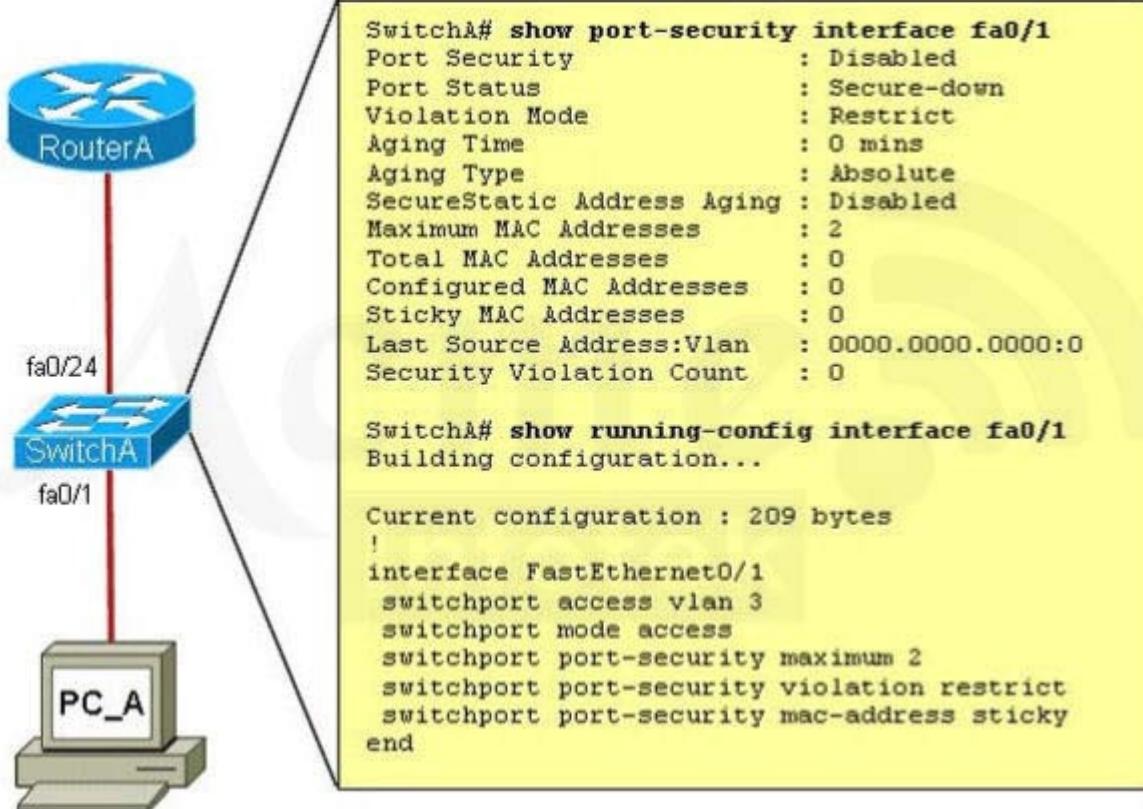
Explanation

Explanation/Reference:**QUESTION 223**

Refer to the exhibit.

A junior network administrator was given the task of configuring port security on SwitchA to allow only PC_A to access the switched network through port fa0/1.

If any other device is detected, the port is to drop frames from this device. The administrator configured the interface and tested it with successful pings from PC_A to RouterA, and then observes the output from these two show commands.



Which two of these changes are necessary for SwitchA to meet the requirements? (Choose two.)

- A. Configure port security to shut down the interface in the event of a violation.
- B. Port security needs to be enabled on the interface.
- C. Enable port security globally.
- D. Port security needs to be configured to allow only one learned MAC address.
- E. Port security interface counters need to be cleared before using the show command.
- F. The port security configuration needs to be saved to NVRAM before it can become active.

Correct Answer: BD

Section: Switching

Explanation:

Explanation/Reference:

QUESTION 224

Which set of commands is recommended to prevent the use of a hub in the access layer?

- A. switch(config-if)# switchport mode trunk
switch(config-if)# switchport port-security maximum 1
- B. switch(config-if)# switchport mode trunk
switch(config-if)# switchport port-security mac-address 1
- C. switch(config-if)# switchport mode access
switch(config-if)# switchport port-security maximum 1
- D. switch(config-if)# switchport mode access
switch(config-if)# switchport port-security mac-address 1

Correct Answer: C

Section: Switching

Explanation

Explanation/Reference:

QUESTION 225

What is known as "one-to-nearest" addressing in IPv6?

- A. global unicast
- B. anycast
- C. multicast
- D. unspecified address

Correct Answer: B

Section: IPv6

Explanation

Explanation/Reference:

QUESTION 226

What is the first 24 bits in a MAC address called?

- A. NIC
- B. BIA
- C. OUI
- D. VAI

Correct Answer: C

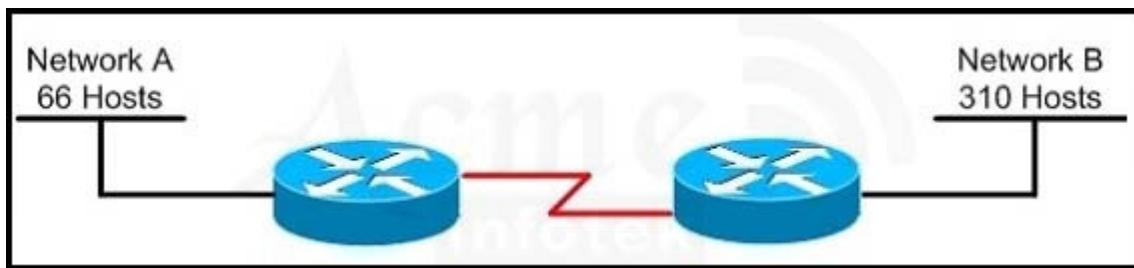
Section: Introduction

Explanation

Explanation/Reference:

QUESTION 227

Refer to the exhibit. Which subnet mask will place all hosts on Network B in the same subnet with the least amount of wasted addresses?



- A. 255.255.255.0
- B. 255.255.254.0
- C. 255.255.252.0
- D. 255.255.248.0

Correct Answer: B

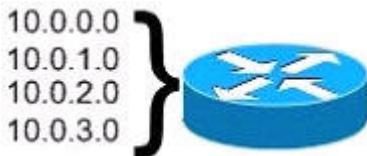
Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 228

Refer to the exhibit. What is the most appropriate summarization for these routes?



- A. 10.0.0.0 /21
- B. 10.0.0.0 /22
- C. 10.0.0.0 /23
- D. 10.0.0.0 /24

Correct Answer: B

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 229

What is the difference between a CSU/DSU and a modem?

- A. A CSU/DSU converts analog signals from a router to a leased line; a modem converts analog signals from a router to a leased line.
- B. A CSU/DSU converts analog signals from a router to a phone line; a modem converts digital signals from a router to a leased line.
- C. A CSU/DSU converts digital signals from a router to a phone line; a modem converts analog signals from a router to a phone line.
- D. A CSU/DSU converts digital signals from a router to a leased line; a modem converts digital signals from a router to a phone line.

Correct Answer: D

Section: WAN

Explanation

Explanation/Reference:

QUESTION 230

Which two are features of IPv6? (Choose two.)

- A. anycast
- B. broadcast
- C. multicast

- D. podcast
- E. allcast

Correct Answer: AC

Section: IPv6

Explanation

Explanation/Reference:

QUESTION 231

Which two are advantages of static routing when compared to dynamic routing? (Choose two.)

- A. Configuration complexity decreases as network size increases.
- B. Security increases because only the network administrator may change the routing table.
- C. Route summarization is computed automatically by the router.
- D. Routing tables adapt automatically to topology changes.
- E. An efficient algorithm is used to build routing tables, using automatic updates.
- F. Routing updates are automatically sent to neighbors.
- G. Routing traffic load is reduced when used in stub network links.

Correct Answer: BG

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 232

A network administrator needs to configure port security on a switch. Which two statements are true? (Choose two.)

- A. The network administrator can apply port security to dynamic access ports.
- B. The network administrator can apply port security to EtherChannels.
- C. When dynamic MAC address learning is enabled on an interface, the switch can learn new addresses, up to the maximum defined.
- D. The sticky learning feature allows the addition of dynamically learned addresses to the running configuration.
- E. The network administrator can configure static secure or sticky secure MAC addresses in the voice VLAN.

Correct Answer: CD

Section: Switching

Explanation

Explanation/Reference:

Explanation:

QUESTION 233

What are three features of the IPv6 protocol? (Choose three.)

- A. checksums
- B. optional IPsec
- C. autoconfiguration
- D. complicated header

- E. plug-and-play
- F. no broadcasts

Correct Answer: CEF

Section: IPv6

Explanation

Explanation/Reference:

QUESTION 234

Which command enables IPv6 forwarding on a Cisco router?

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

Correct Answer: C

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 235

Which command encrypts all plaintext passwords?

- A. Router# service password-encryption
- B. Router(config)# service password-encryption
- C. Router(config)# password-encryption
- D. Router# password-encryption

Correct Answer: B

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 236

You have been asked to come up with a subnet mask that will allow all three web servers to be on the same network while providing the maximum number of subnets.

Which network address and subnet mask meet this requirement?

- A. 192.168.252.8 255.255.255.252
- B. 192.168.252.16 255.255.255.252
- C. 192.168.252.8 255.255.255.248
- D. 192.168.252.0 255.255.255.252
- E. 192.168.252.16 255.255.255.240

Correct Answer: C

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 237

Given an IP address 172.16.28.252 with a subnet mask of 255.255.240.0, what is the correct network address?

- A. 172.16.16.0
- B. 172.16.24.0
- C. 172.16.0.0
- D. 172.16.28.0

Correct Answer: A

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 238

Which IPv6 address is the equivalent of the IPv4 interface loopback address 127.0.0.1?

- A. 0::/10
- B. 2000::/3
- C. ::
- D. ::1

Correct Answer: D

Section: IPv6

Explanation

Explanation/Reference:

QUESTION 239

You are working in a data center environment and are assigned the address range 10.188.31.0/23.

You are asked to develop an IP addressing plan to allow the maximum number of subnets with as many as 30 hosts each.

Which IP address range meets these requirements?

- A. 10.188.31.0/27
- B. 10.188.31.0/26
- C. 10.188.31.0/29
- D. 10.188.31.0/28
- E. 10.188.31.0/25

Correct Answer: A

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 240

Which parameter or parameters are used to calculate OSPF cost in Cisco routers?

- A. Bandwidth, Delay, and MTU
- B. Bandwidth, MTU, Reliability, Delay, and Load
- C. Bandwidth
- D. Bandwidth and Delay

Correct Answer: C

Section: WAN

Explanation

Explanation/Reference:

QUESTION 241

Why do large OSPF networks use a hierarchical design? (Choose three)

- A. to confine network instability to single areas of the network.
- B. to reduce the complexity of router configuration.
- C. to speed up convergence.
- D. to lower costs by replacing routers with distribution layer switches.
- E. to decrease latency by increasing bandwidth.
- F. to reduce routing overhead.

Correct Answer: ACF

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 242

Drag the security feature on the left to the specific security risks they help protect against on the right. (Not all options are used.)

access-group	remote access to device console
console password	access to the console 0 line
enable secret	access to connected network or resources
CHAP authentication	viewing of passwords
VTY password	access to privileged mode
service password-encryption	

Select and Place:

access-group	remote access to device console
console password	access to the console 0 line
enable secret	access to connected network or resources
CHAP authentication	viewing of passwords
VTY password	access to privileged mode
service password-encryption	

Correct Answer:

	VTY password
	console password
	access-group
CHAP authentication	service password-encryption
	enable secret

Section: Drag & Drop Explanation

Explanation/Reference:

QUESTION 243

Routing has been configured on the local router with these commands:

```
Local(config)#ip route 0.0.0.0 0.0.0.0 192.168.1.1
Local(config)#ip route 10.1.0.0 255.255.255.0 192.168.2.2
Local(config)#ip route 10.1.0.0 255.255.0.0 192.168.3.3
```

Drag each destination IP address on the left to its correct next hop address on the right

10.1.1.10

10.1.0.14

10.2.1.3

10.1.4.6

10.1.0.123

10.6.8.4

Next hop 192.168.1.1

Next hop 192.168.2.2

Next hop 192.168.3.3

Select and Place:

10.1.1.10

10.1.0.14

10.2.1.3

10.1.4.6

10.1.0.123

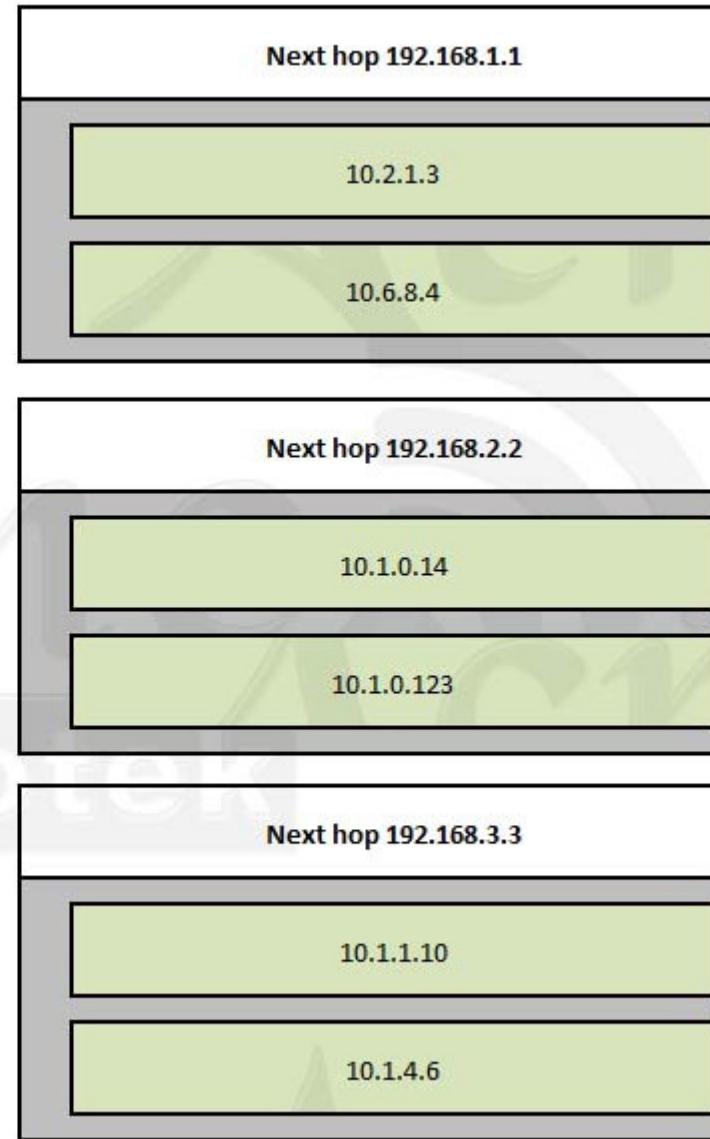
10.6.8.4

Next hop 192.168.1.1

Next hop 192.168.2.2

Next hop 192.168.3.3

Correct Answer:



Section: Drag & Drop Explanation

Explanation/Reference:

QUESTION 244

The left describes the types of cables, while the right describes the purposes of the cables.
Drag the items on the left to the proper locations. (Not all items can be used.)

crossover	switch access port to router
null modem	switch to switch
straight-through	PC COM to Switch Console Port
rollover	
9-25 pin serial	

Select and Place:

crossover	switch access port to router
null modem	switch to switch
straight-through	PC COM to Switch Console Port
rollover	
9-25 pin serial	

Correct Answer:

	straight-through
null modem	crossover
	rollover
9-25 pin serial	

**Section: Drag & Drop
Explanation**

Explanation/Reference:

QUESTION 245

Drag each category on the left to its corresponding router output on the right. Each router output line is in the result of a show ip interface command. (Not all categories are used.)

- Layer 1 problem
- Layer 2 problem
- Layer 3 problem
- Port operational
- port disabled

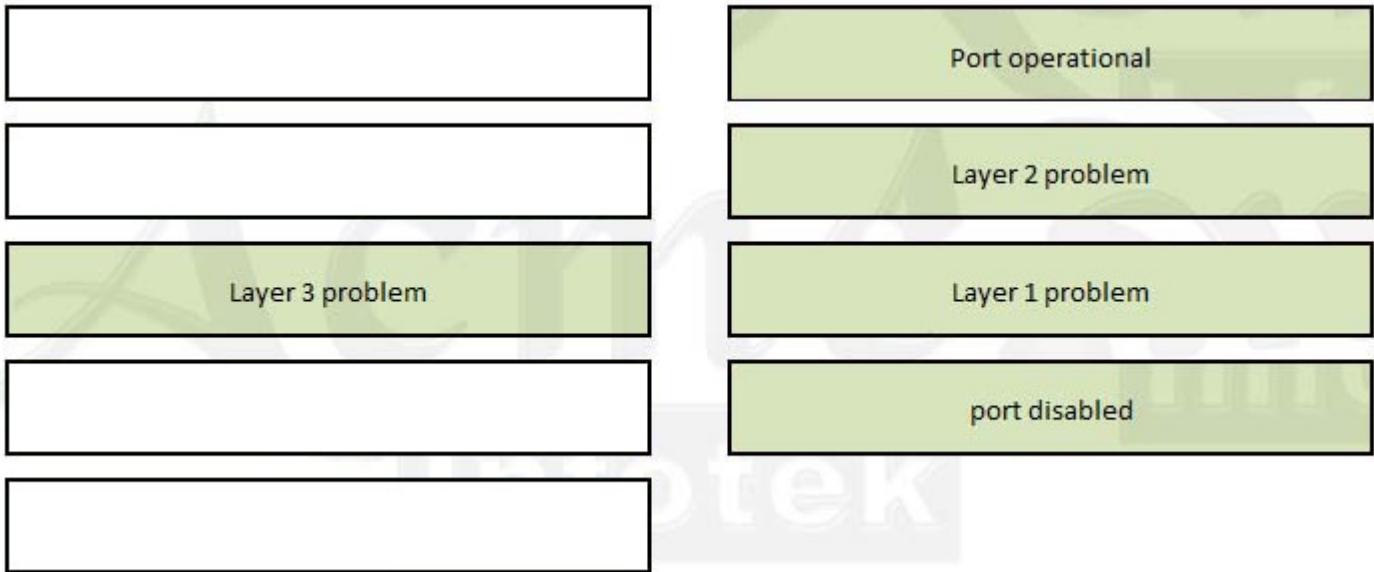
- Serial0/1 is up, line protocol is up
- Serial0/1 is up, line protocol is down
- Serial0/1 is down, line protocol is down
- Serial0/1 is administratively down, line protocol is down

Select and Place:

- Layer 1 problem
- Layer 2 problem
- Layer 3 problem
- Port operational
- port disabled

- Serial0/1 is up, line protocol is up
- Serial0/1 is up, line protocol is down
- Serial0/1 is down, line protocol is down
- Serial0/1 is administratively down, line protocol is down

Correct Answer:



**Section: Drag & Drop
Explanation**

Explanation/Reference:

QUESTION 246

Drag the Cisco default administrative distance to the appropriate routing protocol or route (Not all options are used.)

0	RIP
1	OSPF
20	static route referencing IP address of next hop
90	internal EIGRP route
100	directly connected network
110	
120	
130	

Select and Place:

0	RIP
1	OSPF
20	static route referencing IP address of next hop
90	internal EIGRP route
100	directly connected network
110	
120	
130	

Correct Answer:

	120
	110
20	1
	90
100	0
130	

**Section: Drag & Drop
Explanation**

Explanation/Reference:

QUESTION 247

Drag the Frame Relay acronym on the left to match its definition on the right. (Not all acronyms are used.)

CIR

DCE

DTE

LMI

PVC

SVC

DLCI

a router is this type of device

the most common type of virtual circuit

provides status message between DTE and DCE devices

identifies the virtual connection between DTE and the switch

Select and Place:

CIR

DCE

DTE

LMI

PVC

SVC

DLCI

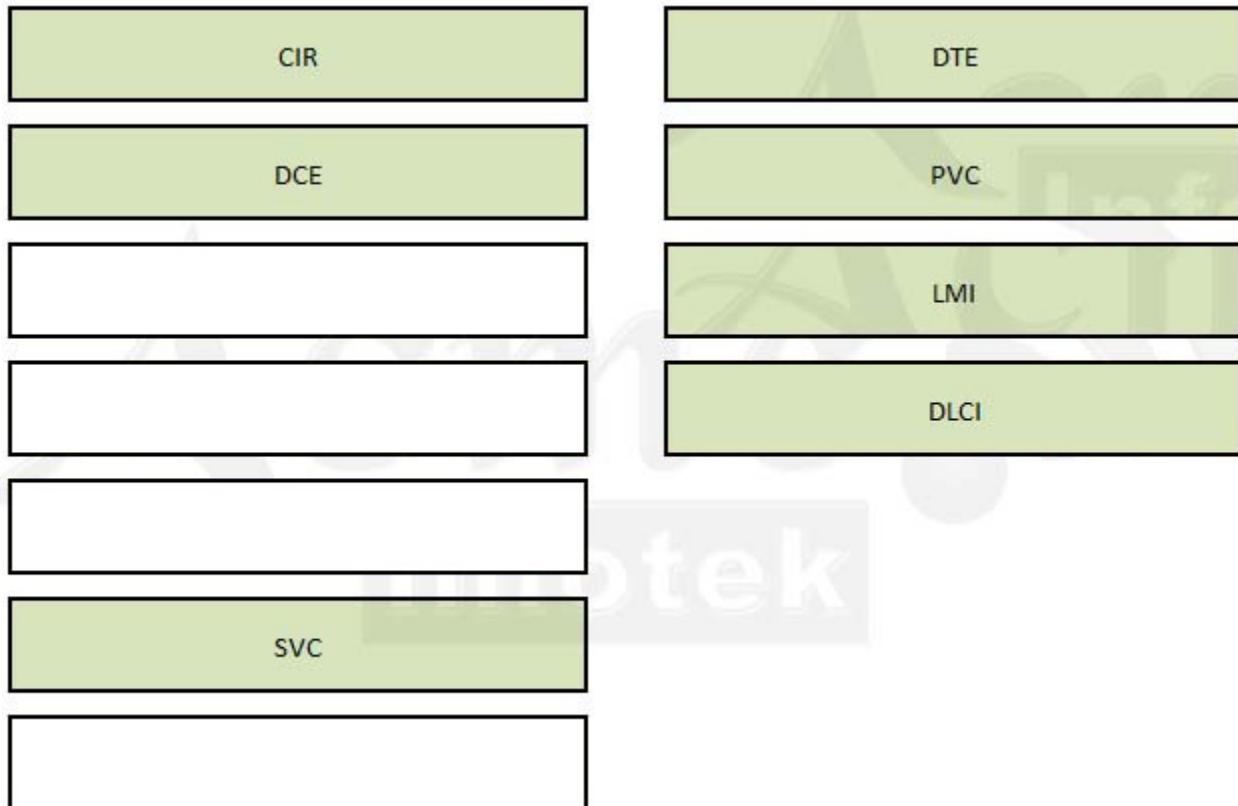
a router is this type of device

the most common type of virtual circuit

provides status message between DTE and DCE devices

identifies the virtual connection between DTE and the switch

Correct Answer:

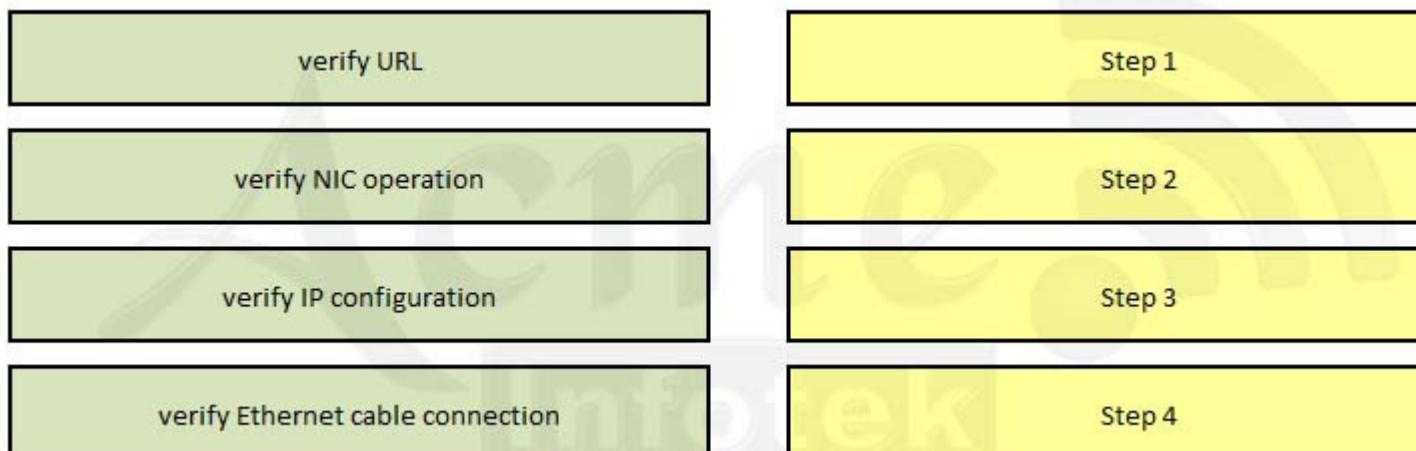


**Section: Drag & Drop
Explanation**

Explanation/Reference:

QUESTION 248

A user is unable to connect to the Internet. Based on the layered approach to troubleshooting and beginning with lowest layer, follow the guide and drag the contents to relevant modules



Select and Place:

verify URL	Step 1
verify NIC operation	Step 2
verify IP configuration	Step 3
verify Ethernet cable connection	Step 4

Correct Answer:

	verify Ethernet cable connection
	verify NIC operation
	verify IP configuration
	verify URL

**Section: Drag & Drop
Explanation**

Explanation/Reference:

QUESTION 249

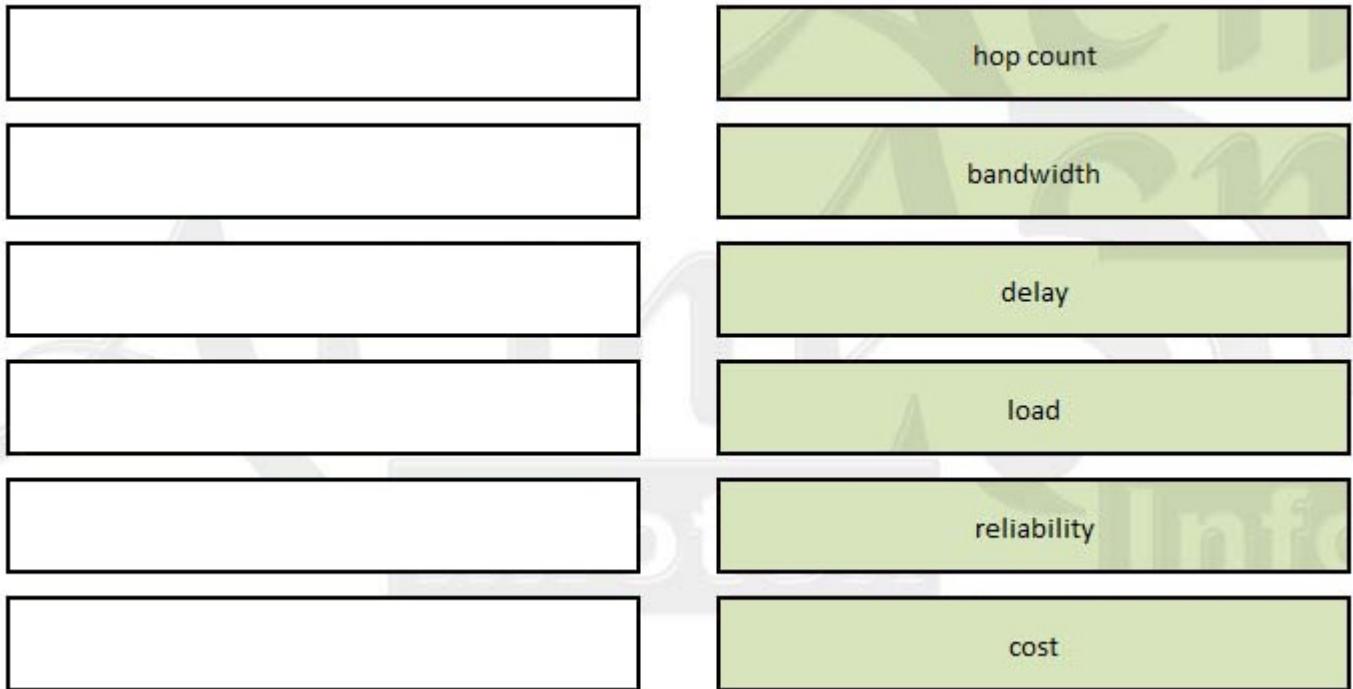
Drag and drop. Match the items on the left with its corresponding definition on the right.

cost	the number of point-to-point links in a transmission path
load	the data capacity of a link
bandwidth	the amount of time required to move a packet from source to destination
hop count	the amount of activity on a network resource
reliability	usually refers to the bit error rate of each network link
delay	a configurable value based by default on the bandwidth of the interface

Select and Place:

cost	the number of point-to-point links in a transmission path
load	the data capacity of a link
bandwidth	the amount of time required to move a packet from source to destination
hop count	the amount of activity on a network resource
reliability	usually refers to the bit error rate of each network link
delay	a configurable value based by default on the bandwidth of the interface

Correct Answer:

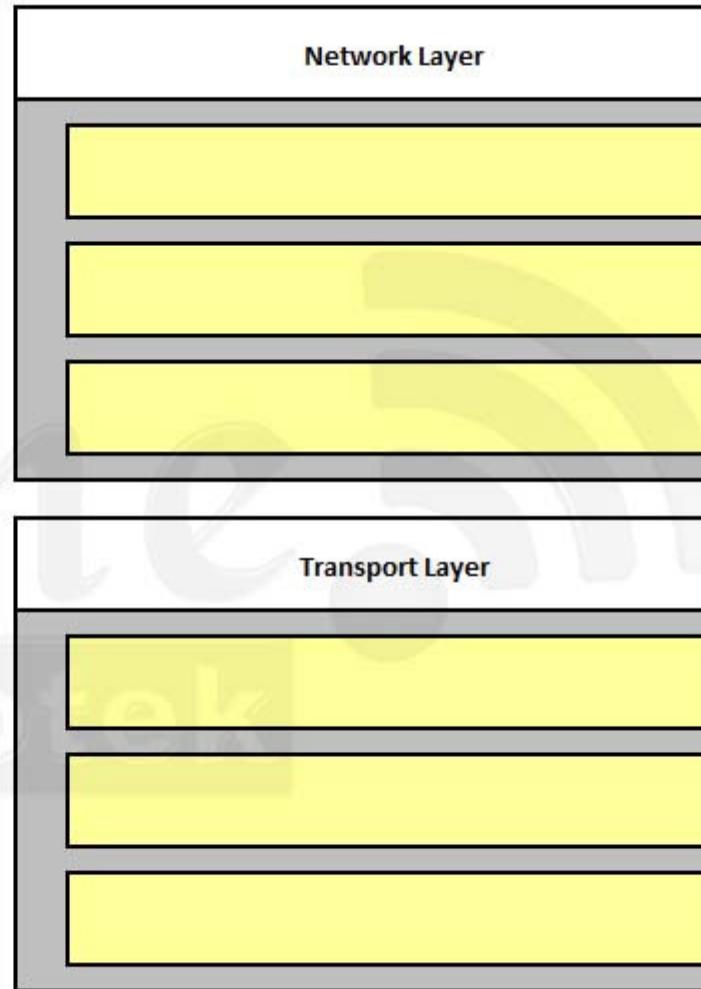
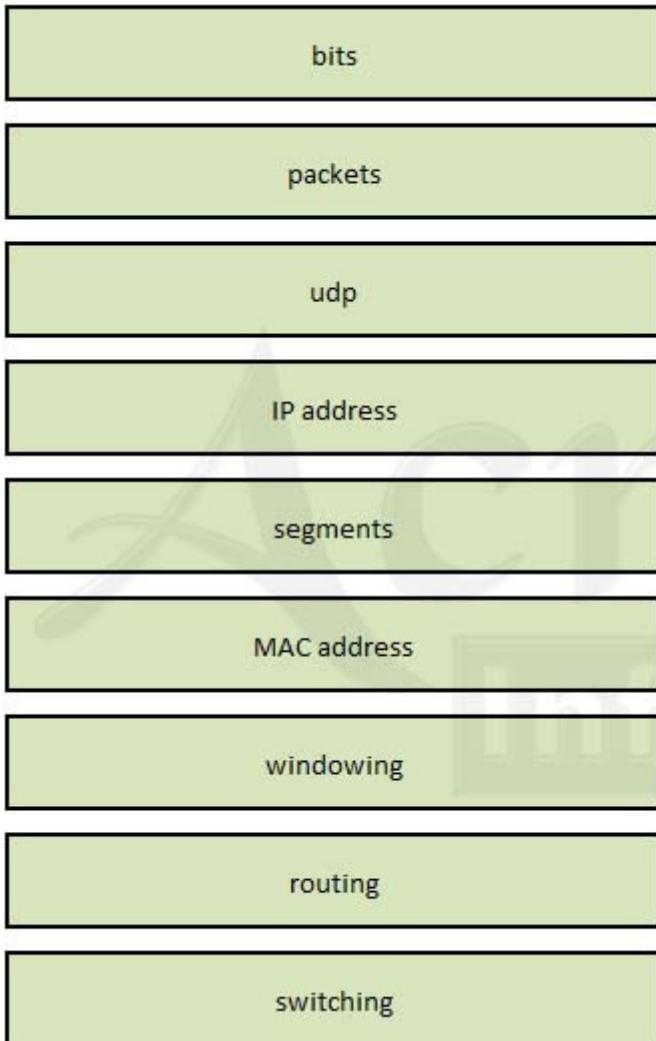


**Section: Drag & Drop
Explanation**

Explanation/Reference:

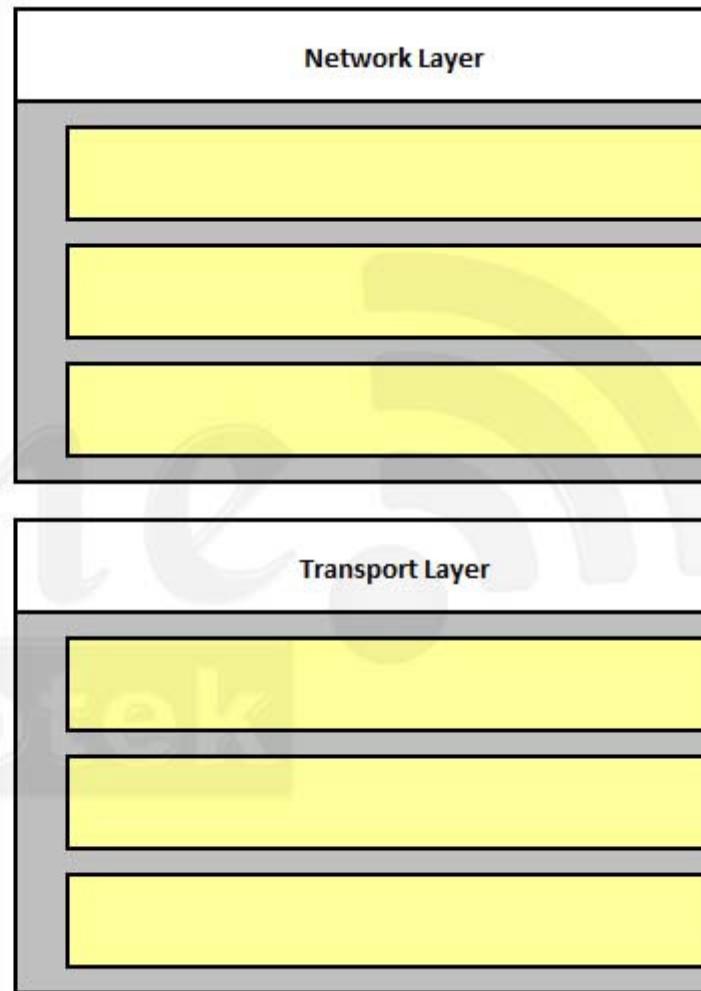
QUESTION 250

Match the items on the left with appropriate OSI layer on the right. (Not all options are used.)

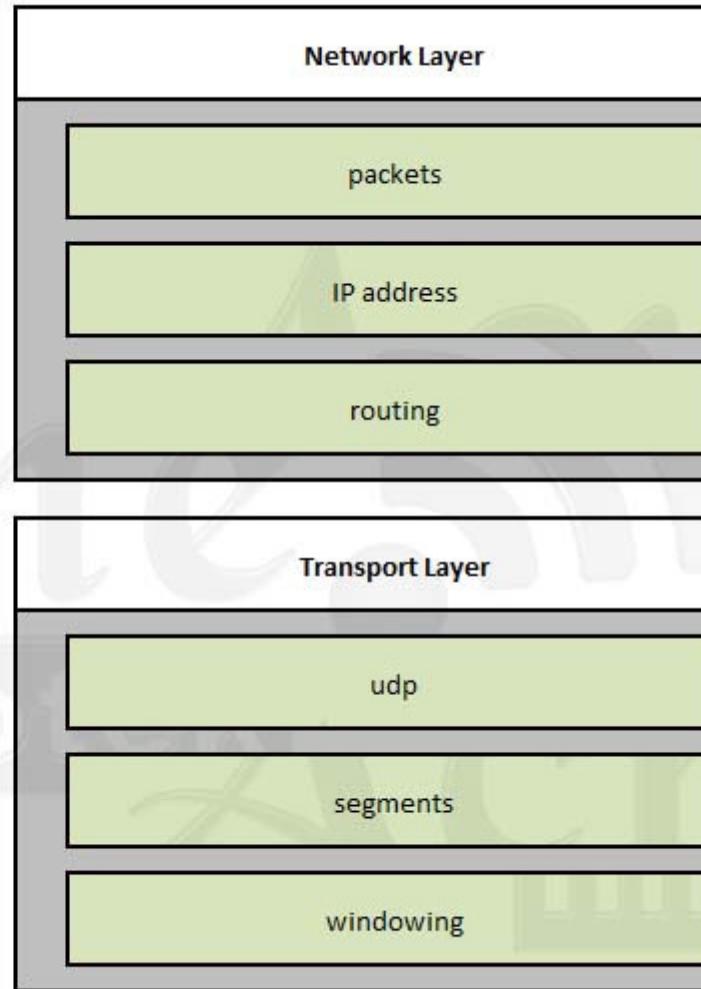
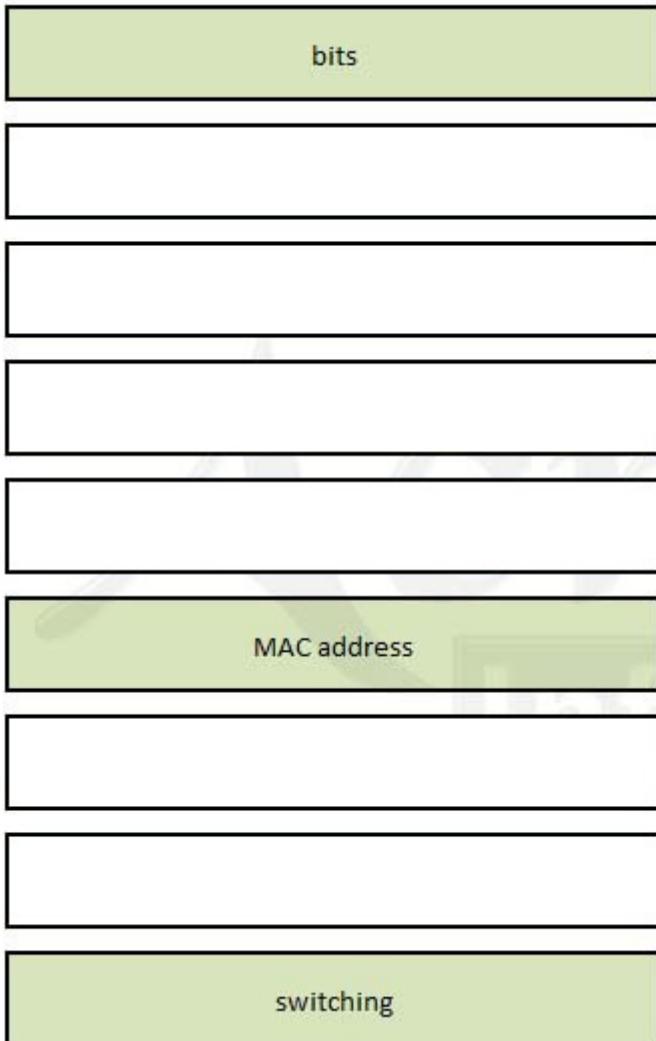


Select and Place:

bits
packets
udp
IP address
segments
MAC address
windowing
routing
switching



Correct Answer:



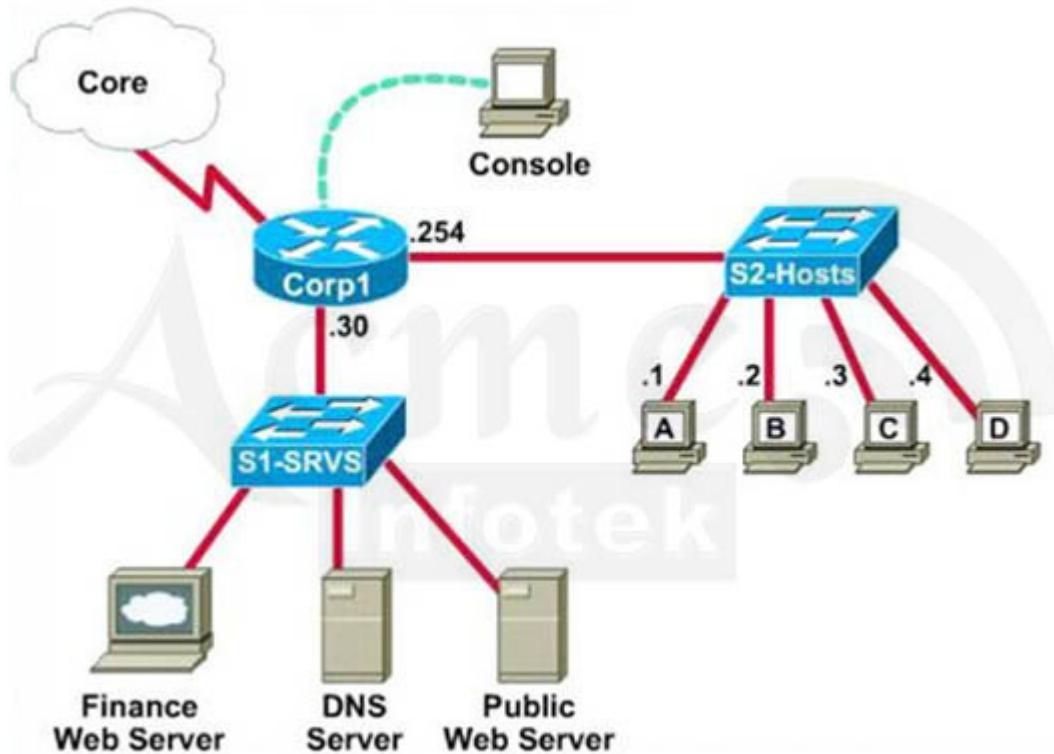
Section: Drag & Drop Explanation

Explanation/Reference:

QUESTION 251

A network associate is adding security to the configuration of the Corp1 router. The user on host C should be able to use a web browser to access financial information from the Finance Web Server. No other hosts from the LAN nor the Core should be able to use a web browser to access this server. Since there are multiple resources for the corporation at this location including other resources on the Finance Web Server, all other traffic should be allowed.

The task is to create and apply a numbered access-list with no more than three statements that will allow ONLY host C web access to the Finance Web Server. No other hosts will have web access to the Finance Web Server. All other traffic is permitted.



Access to the Router CLI can be gained by clicking on the appropriate host.

All passwords have been temporarily set to “cisco”.

The Core connection uses an IP address of 198.18.196.65

The computers in the Hosts LAN have been assigned addresses of 192.168.33.1 – 192.168.33.254

Host A 192.168.33.1
 Host B 192.168.33.2
 Host C 192.168.33.3
 Host D 192.168.33.4

The servers in the Server LAN have been assigned addresses of 172.22.242.17 – 172.22.242.30

The Finance Web Server is assigned an IP address of 172.22.242.23.

The Public Web Server is assigned an IP address of 172.22.242.17

A. Select to answer this question

Correct Answer: A
Section: Simulation
Explanation

Explanation/Reference:

Click the console PC and enter the following commands.

```
Corp1>enable
Password: cisco
```

We should create an access-list and apply it to the interface which is connected to the Server LAN because it can filter out traffic from both Sw-Hosts and Core networks. The Server LAN network has been assigned addresses of 172.22.242.17 - 172.22.242.30 so we can guess the interface connected to them has an IP address of 172.22.242.30 (.30 is the number shown in the figure). Use the "**show ip int brief**" command to check which interface has the IP address of 172.22.242.30.

```
Corp1# show ip int brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	192.168.33.254	YES	manual	up	up
FastEthernet0/1	172.22.242.30	YES	manual	up	up
Serial0/0	198.18.196.65	YES	manual	up	up

We learn that interface FastEthernet0/1 is the interface connected to Server LAN network. It is the interface we will apply our access-list (for outbound direction)

```
Corp1# configure terminal
```

Our access-list needs to allow host C - 192.168.33.3 to the Finance Web Server 172.22.242.23 via web (port 80)

```
Corp1(config)# access-list 100 permit tcp host 192.168.33.3 host 172.22.242.23 eq 80
```

Deny other hosts access to the Finance Web Server via web

```
Corp1(config)# access-list 100 deny tcp any host 172.22.242.23 eq 80
```

All other traffic is permitted

```
Corp1(config)# access-list 100 permitip any any
```

Apply this access-list to Fa0/1 interface (outbound direction)

```
Corp1(config)# int fa0/1
Corp1(config-if)# ip access-group 100 out
Corp1(config-if)# end
```

Notice:

We have to apply the access-list to Fa0/1 interface (not Fa0/0 interface) so that the access-list can filter traffic coming from the Core network.

Click on host C and open its web browser. In the address box type **http://172.22.242.23** to check if you are allowed to access Finance Web Server or not. If your configuration is correct then you can access it.

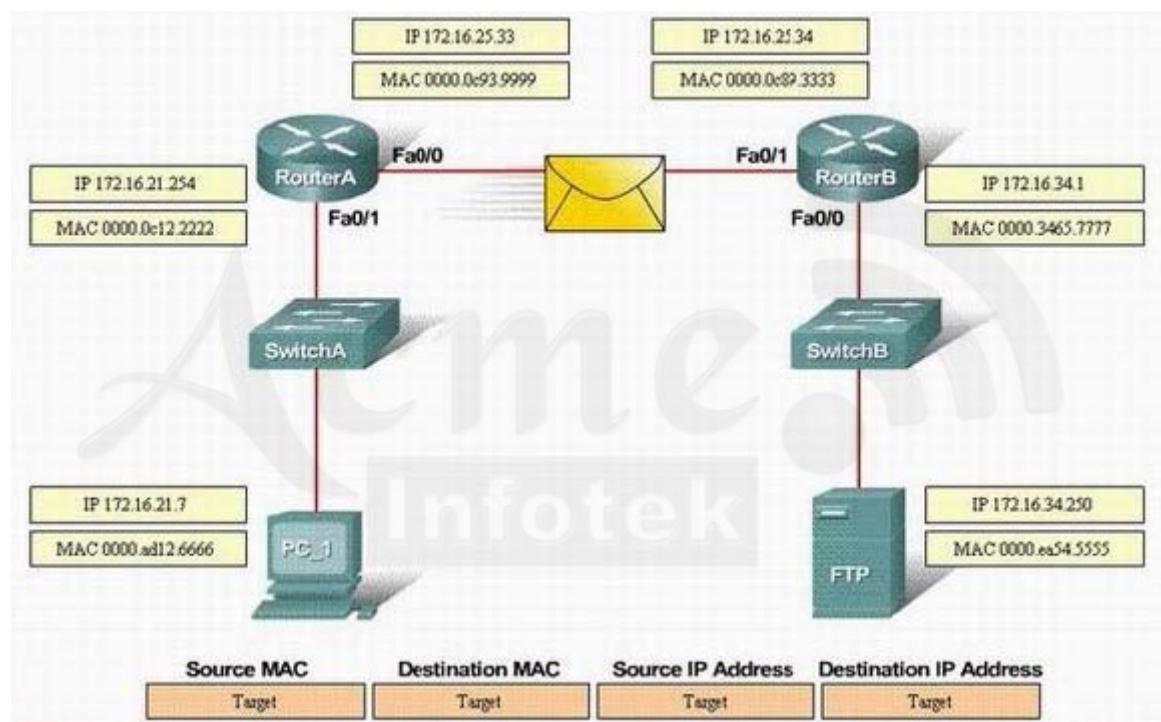
Click on other hosts (A, B and D) and check to make sure you can't access Finance Web Server from these hosts.

Finally, save the configuration

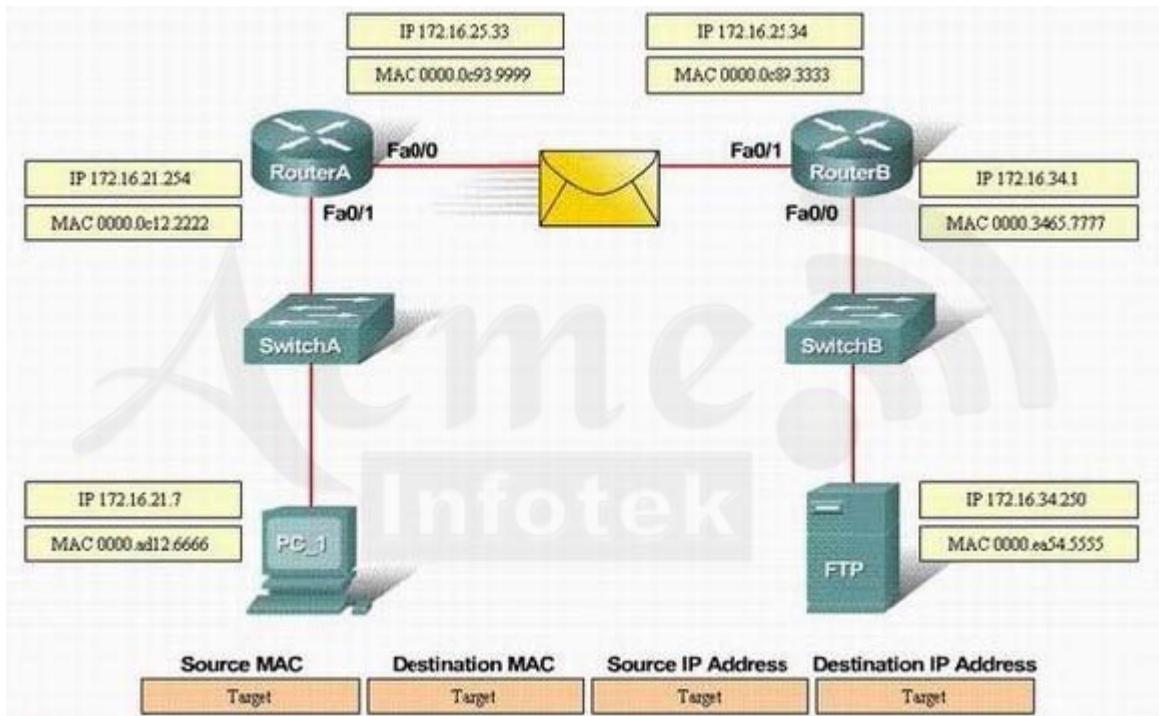
```
Corp1# copy run start
Destination filename [startup-config]?<ctrl-Z>
Building configuration...
[OK]
Corp1#
```

QUESTION 252

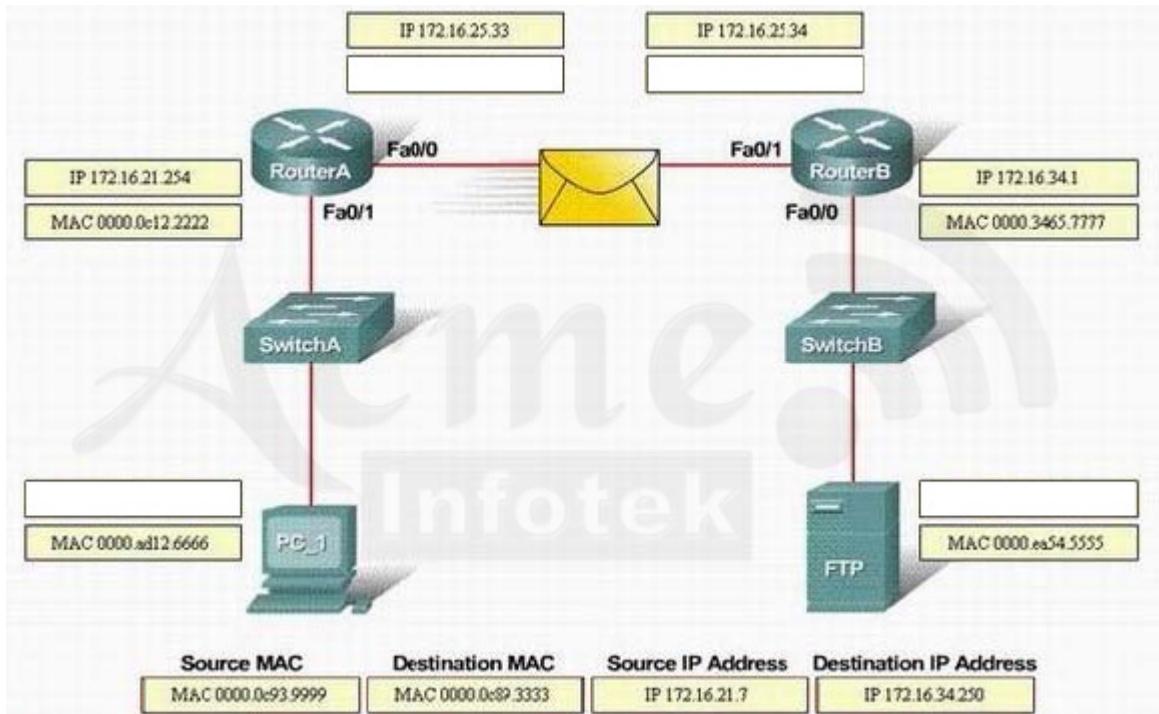
Refer to the exhibit. PC_1 is sending packets to the FTP server. Consider the packets as they leave RouterA interface Fa0/0 towards RouterB. Drag the correct frame and packet address to their place in the table.



Select and Place:



Correct Answer:



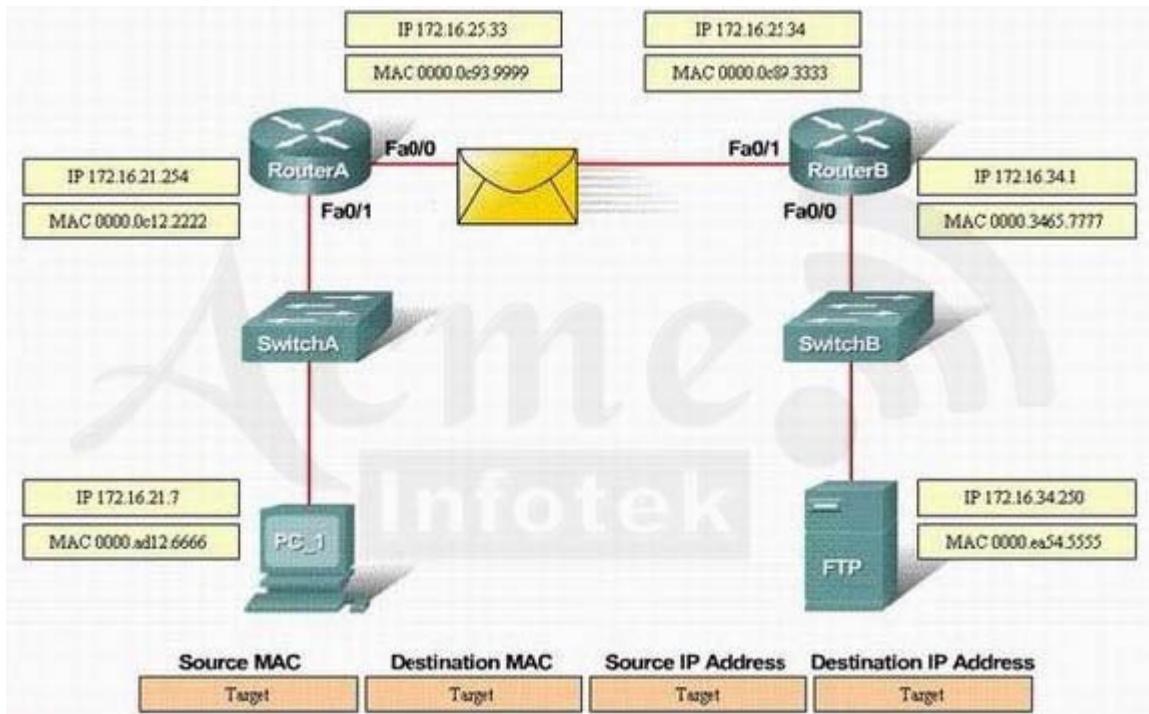
**Section: Drag & Drop
Explanation**

Explanation/Reference:

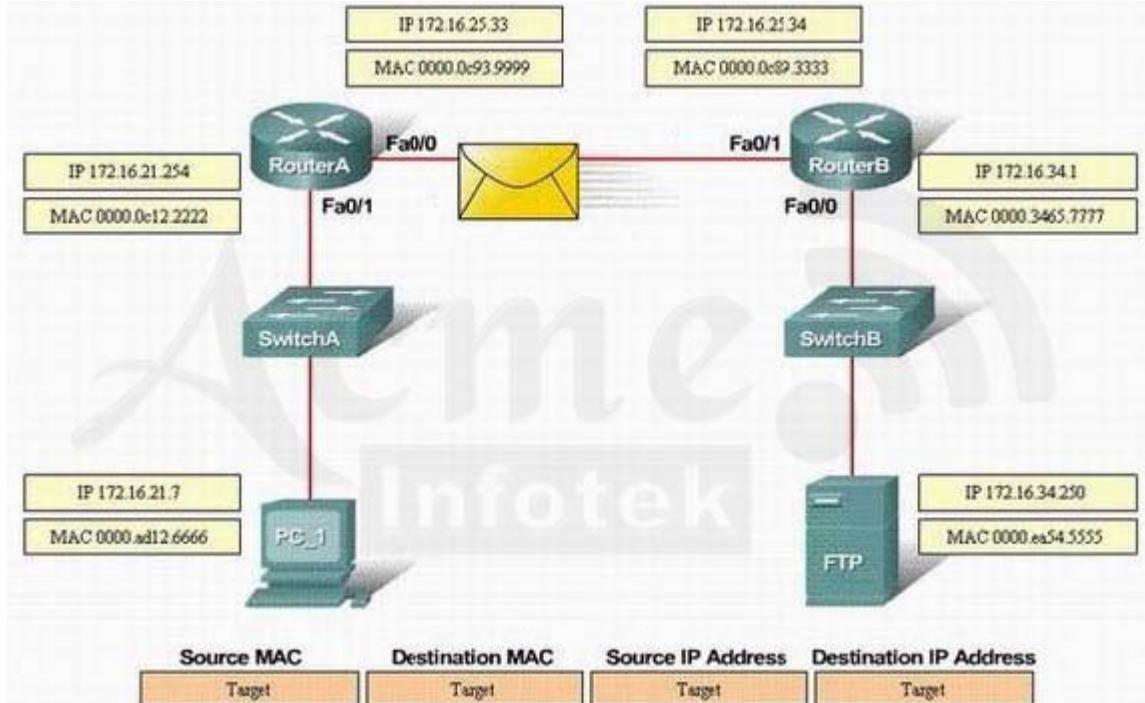
QUESTION 253

Refer to the exhibit. FTP Server is sending packets to the PC_1. Consider the packets as they leave RouterB

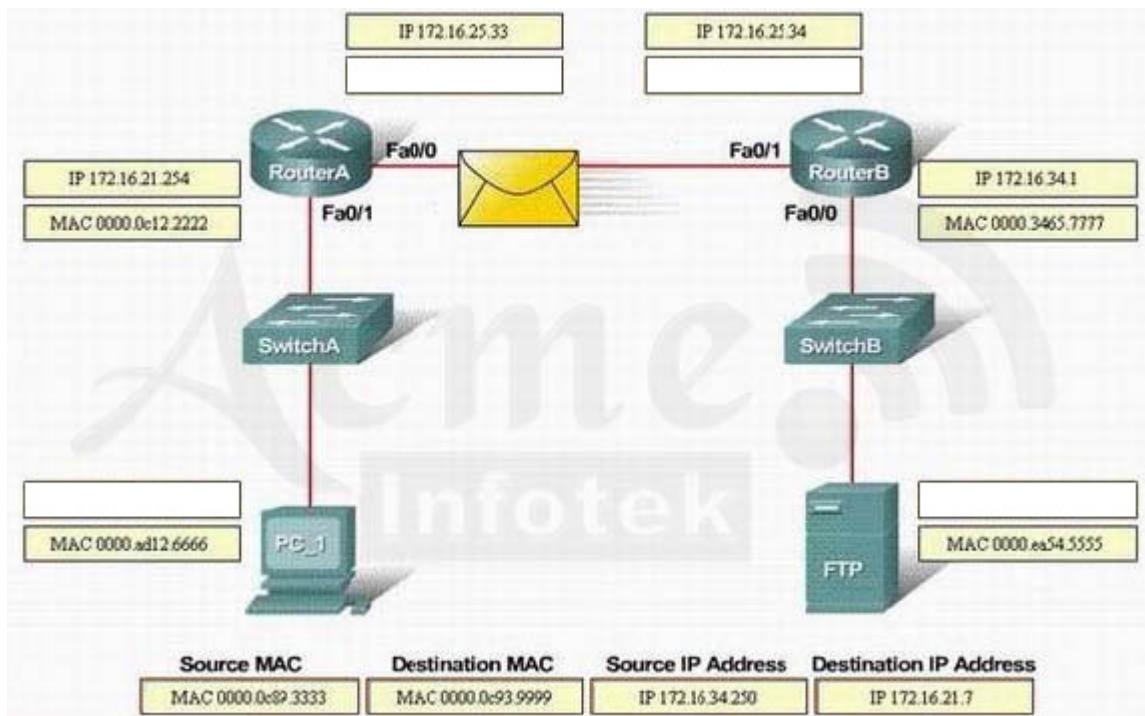
interface Fa0/0 towards RouterA. Drag the correct frame and packet address to their place in the table.



Select and Place:



Correct Answer:

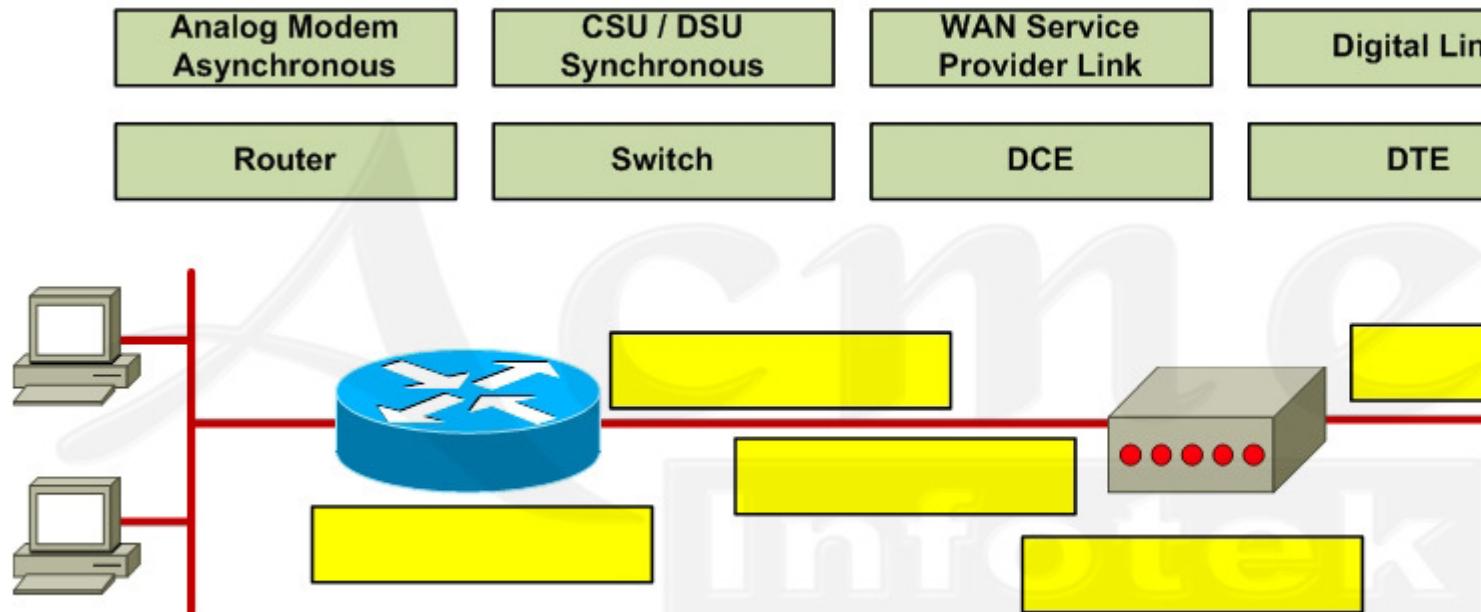


Section: Drag & Drop Explanation

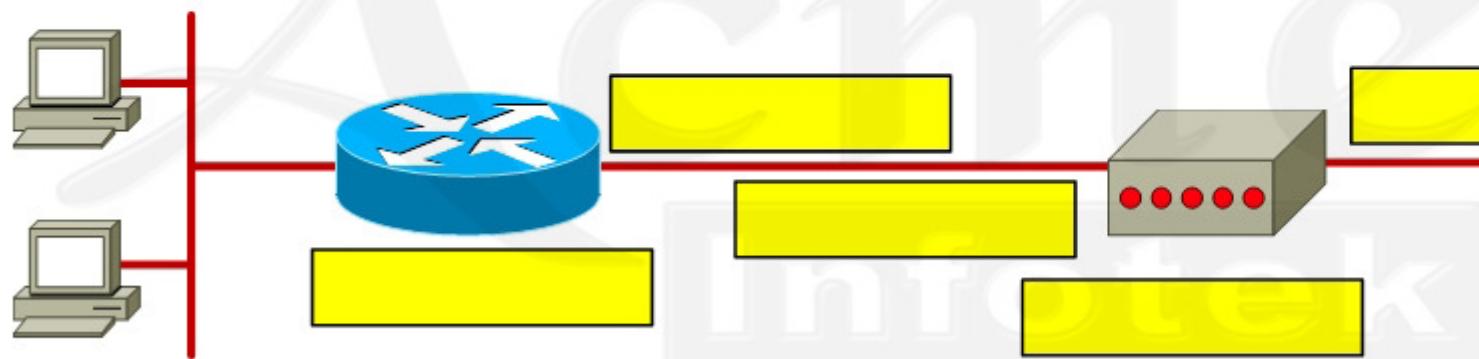
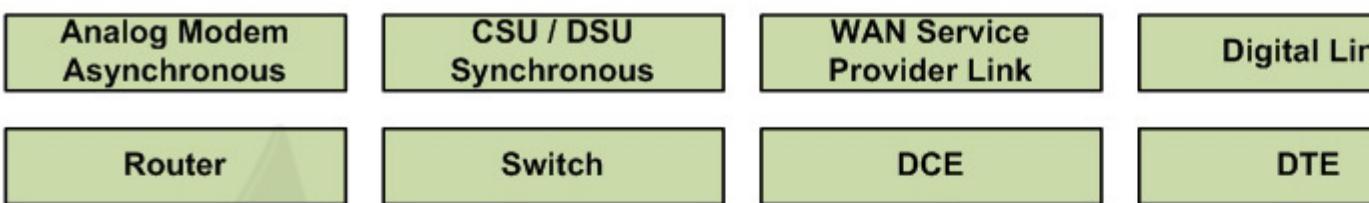
Explanation/Reference:

QUESTION 254

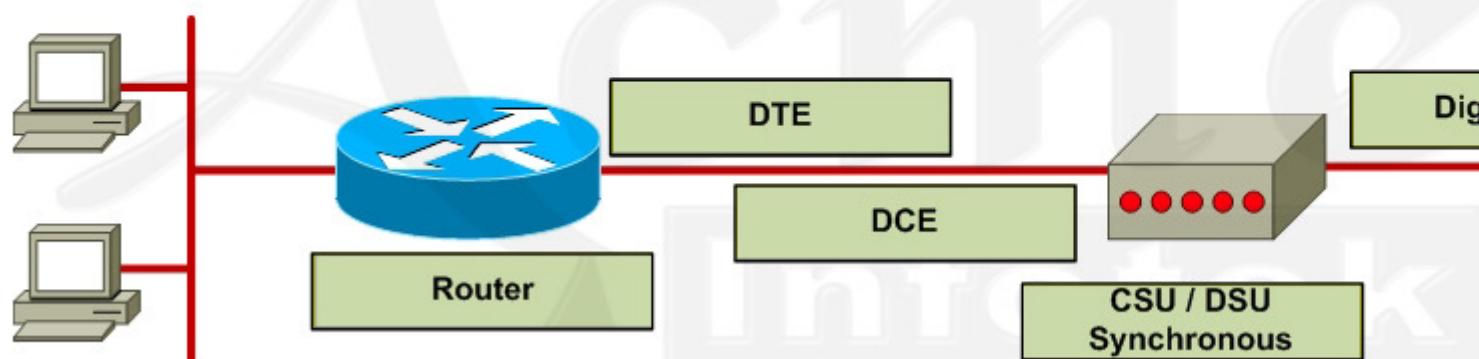
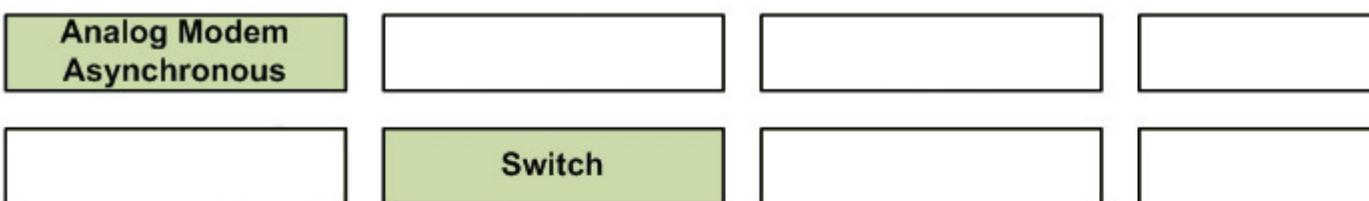
Refer to the exhibit. Complete the network diagram by dragging the correct device name or description to the correct location. Not all the names or descriptions will be used.



Select and Place:



Correct Answer:



Section: Drag & Drop
Explanation

Explanation/Reference:

QUESTION 255

The network administrator needs to address seven LANs. RIP version 1 is the only routing protocol in use on the network and subnet 0 is not being used. What is the maximum number of usable IP addresses that can be supported on each LAN if the organization is using one class C address block?

- A. 8
- B. 6
- C. 30
- D. 32
- E. 14
- F. 16

Correct Answer: C

Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 256

In a switched environment, what does the IEEE 802.1Q standard describe?

- A. the operation of VTP
- B. a method of VLAN trunking
- C. an approach to wireless LAN communication
- D. the process for root bridge selection
- E. VLAN pruning

Correct Answer: B

Section: VLAN

Explanation

Explanation/Reference:

QUESTION 257

What is a global command?

- A. a command that is set once and affects the entire router.
- B. a command that is implemented in all foreign and domestic IOS versions.
- C. a command that is universal in application and supports all protocols.
- D. a command that is available in every release of IOS, regardless of the version or deployment status.
- E. a command that can be entered in any configuration mode.

Correct Answer: A

Section: Introduction to Cisco IOS

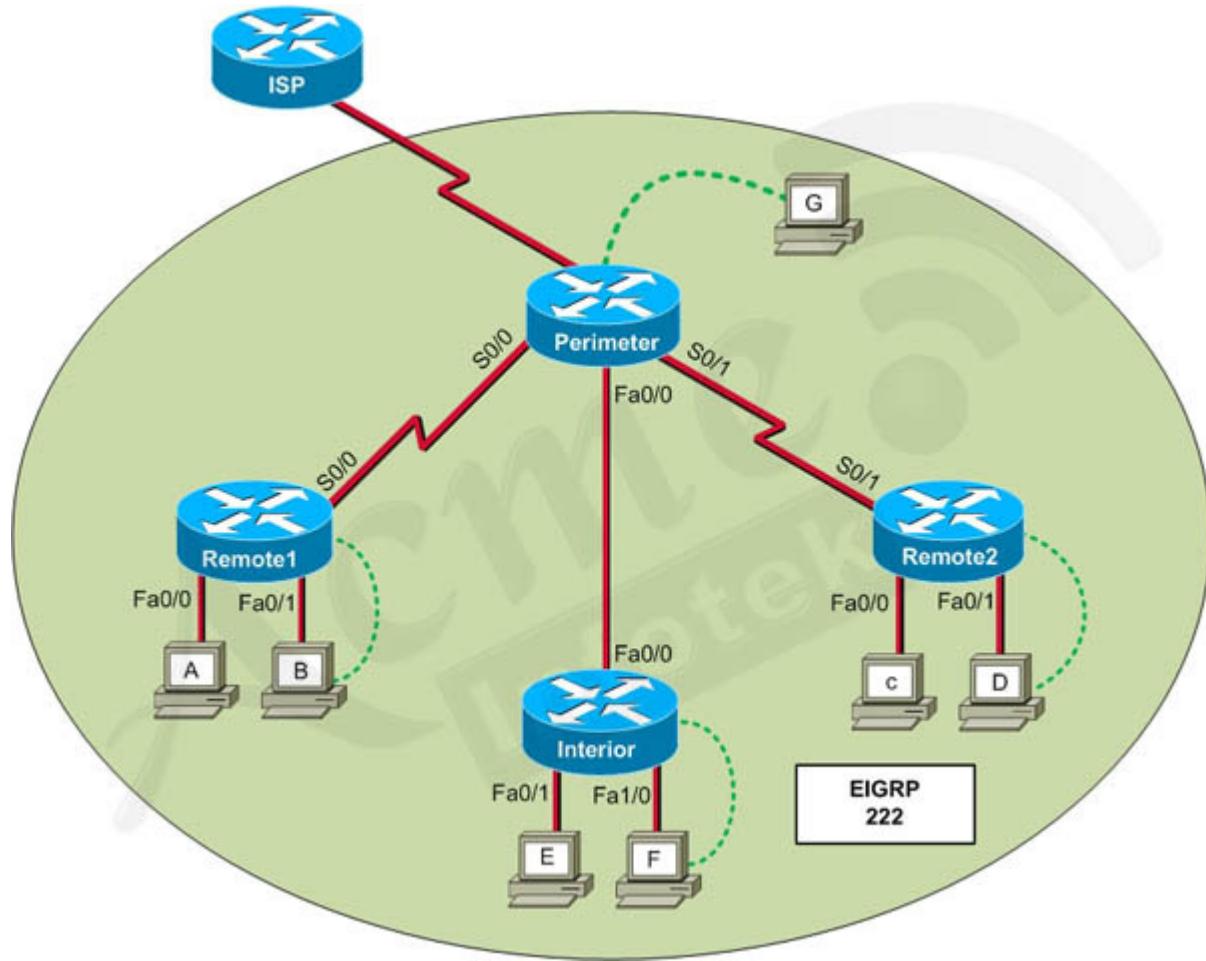
Explanation

Explanation/Reference:

QUESTION 258

EIGRP Simulation

After adding Interior router, no routing updates are being exchanged between Perimeter and the new location. All other inter connectivity and Internet access for the existing locations of the company are working properly.



The Task is to identify the fault(s) and correct the router configurations to provide full connectivity between the routers.

Access to the router CLI can be gained by clicking on the appropriate host.

All passwords on all routers are cisco.

IP Address are listed in the chart below

Perimeter	
Fa0/0	192.168.77.33
S1/0	198.0.18.6
S1/1	192.168.60.25

Interior	
Fa0/0	192.168.77.34
Fa1/0	192.168.60.81
Fa0/1	192.168.60.65

Remote1	
Fa0/0	192.168.60.97
Fa0/1	192.168.60.113
S0/0	192.168.36.14

Remote2	
Fa0/0	192.168.60.129
Fa0/1	192.168.60.145
S0/1	192.168.60.26

A. Click here to answer this question

Correct Answer: A

Section: Simulation

Explanation

Explanation/Reference:

Commands

First we should check the configuration of the **Interior** Router.

Click the console PC “F” and enter the following commands.

```
Interior> enable
Password: cisco
Interior# show running-config
Building configuration...

Current configuration : 770 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Interior
!
enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!
interface FastEthernet0/0
 ip address 192.168.77.34 255.255.255.252
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 192.168.60.65 255.255.255.240
 duplex auto
 speed auto
!
interface FastEthernet1/0
```

```

ip address 192.168.60.81 255.255.255.240
duplex auto
speed auto
!
router eigrp 22
  network 192.168.77.0
  network 192.168.60.0
  no auto-summary
!
ip classless
!
line con 0
line vty 0 4
  login
!
end
Interior#

```

From the output above, we know that this router was wrongly configured with an autonomous number (AS) of 22. When the AS numbers among routers are mismatched, no adjacency is formed.
(You should check the AS numbers on other routers for sure)

To solve this problem, we simply re-configure router Interior router with the following commands:

```

Interior# conf t
Interior(config)# no router eigrp 22
Interior(config)# router eigrp 222
Interior(config-router)# network 192.168.60.0
Interior(config-router)# network 192.168.77.0
Interior(config-router)# no auto-summary
Interior(config-router)# end
Interior# copy running-config startup-config

```

Second we should check the configuration of the **Perimeter** Router.

Click the console PC “G” and enter the following commands.

```

Perimeter> enable
Password: cisco
Perimeter# show running-config
Building configuration...

Current configuration : 1029 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Perimeter
!
enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!
interface FastEthernet0/0
  ip address 192.168.77.33 255.255.255.252
  duplex auto

```

```

speed auto
!
interface Serial0/0
 ip address 192.168.36.13 255.255.255.252
 clock rate 64000
!
interface Serial0/1
 ip address 192.168.60.25 255.255.255.252
 clock rate 64000
!
interface Serial1/0
 ip address 198.0.18.6 255.255.255.0
!
interface Serial1/1
 no ip address
 shutdown
!
interface Serial1/2
 no ip address
 shutdown
!
interface Serial1/3
 no ip address
 shutdown
!
router eigrp 222
 network 192.168.36.0
 network 192.168.60.0
 network 192.168.85.0
 network 198.0.18.0
 no auto-summary
!
ip classless
ip route 0.0.0.0 0.0.0.0 198.0.18.5
!
line con 0
line vty 0 4
 login
!
end
Perimeter#

```

Notice that it is missing a definition to the network Interior. Therefore we have to add it so that it can recognize Interior router

```

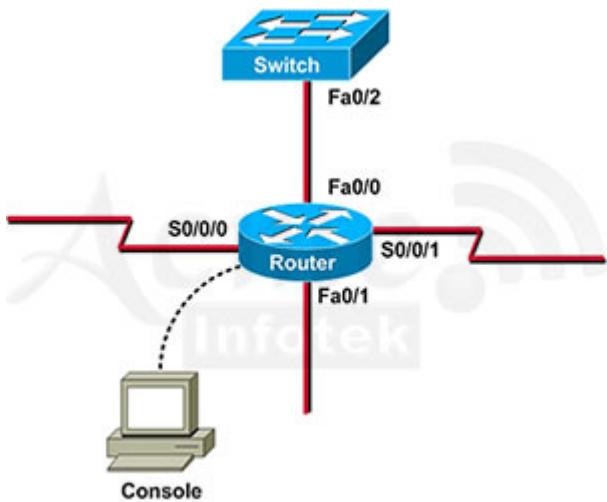
Perimeter# conf t
Perimeter(config)# router eigrp 222
Perimeter(config-router)# network 192.168.77.0
Perimeter(config-router)# end
Perimeter# copy running-config startup-config

```

Now the whole network will work well. You should check again with ping command from router Interior to other routers!

QUESTION 259

Access Control List (ACL) Simlet



An administrator is trying to ping and telnet from Switch to Router with the results shown below:

```

Switch>ping 10.4.4.3
Type escape sequence to abort.
Sending 5, 100-bytes ICMP Echos to 10.4.4.3, timeout is 2 seconds:
.U.U.U.
Success rate is 0 percent (0/5)

Switch>telnet 10.4.4.3
Trying 10.4.4.3...
%Destination unreachable; gateway or host down
Switch>

```

For this question we only need to use the show running-config command to answer all the questions below:

```

Router>enable
Router#show running-config

```

```
Building configuration...

Current configuration : 807 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname Weaver
!
!
!
enable password cisco
!
!
!
!
```

```
!
interface Loopback1
 ip address 172.16.4.1 255.255.255.0
!

interface Loopback2
 ip address 10.145.145.1 255.255.255.0
 ipv6 address 2001:410:2:3:164 eui-64
!

interface FastEthernet0/0
 ip address 10.4.4.3 255.255.255.0
 ip access-group 106 in
 duplex auto
 speed auto
!

interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!

interface Serial0/0/0
 bandwidth 64
 no ip address
 ip access-group 102 out
 encapsulation frame-relay
 ip ospf authentication
 ip ospf authentication-key san-fran
!

interface Serial0/0/0.1 point-to-point
 ip address 10.140.3.2 255.255.255.0
 ip authentication mode eigrp 100 md5
 ip authentication key-chain eigrp 100 icndchain
 frame-relay interface-dlci 120
!

interface Serial0/0/1
 bandwidth 64
 ip address 10.45.45.1 255.255.255.0
 ip access-group 102 in
 ip authentication mode eigrp 100 md5
 ip authentication key-chain eigrp 100 icndchain
 ip ospf authentication
 ip ospf authentication-key san-fran
 ipv6 address 2001:410:2:10::/64 eui-64
!
```

```
router eigrp 100
network 10.0.0.0
network 172.16.0.0
network 192.168.2.0
no auto-summary
!
router ospf 100
log-adjacency-changes
network 10.4.4.3 0.0.0.0 area 0
network 10.45.45.1 0.0.0.0 area 0
network 10.140.3.2 0.0.0.0 area 0
network 192.168.2.62 0.0.0.0 area 0
!
router rip
version 2
network 10.0.0.0
network 172.16.0.0
!
ip default-gateway 40.1.1.2
!
ip http server
no ip http secure-server
!
```

```
!
access-list 102 permit tcp any any eq ftp
access-list 102 permit tcp any any eq ftp-data
access-list 102 deny tcp any any eq telnet
access-list 102 deny icmp any any echo-reply
access-list 102 permit ip any any
!
access-list 104 permit tcp any any eq ftp
access-list 104 permit tcp any any eq ftp-data
access-list 104 deny tcp any any eq telnet
access-list 104 permit icmp any any echo
access-list 104 deny icmp any any echo-reply
access-list 104 permit ip any any
!
access-list 106 permit tcp any any eq ftp
access-list 106 permit tcp any any eq ftp-data
access-list 106 deny tcp any any eq telnet
access-list 106 permit icmp any any echo-reply
!
access-list 110 permit udp any any eq domain
access-list 110 permit udp any eq domain any
access-list 110 permit tcp any any eq domain
access-list 110 permit tcp any eq domain any
access-list 110 permit tcp any any
!
access-list 114 permit ip 10.4.4.0 0.0.0.255 any
!
access-list 115 permit ip 0.0.0.0 255.255.255.0 any
!
access-list 122 deny tcp any any
access-list 122 deny icmp any any echo-reply
access-list 122 permit ip any any
!
```

Question 1

Which will fix the issue and allow ONLY ping to work while keeping telnet disabled?

- A. Correctly assign an IP address to interface fa0/1
- B. Change the ip access-group command on fa0/0 from “in” to “out”
- C. Remove access-group 106 in from interface fa0/0 and add access-group 115 in.
- D. Remove access-group 102 out from interface s0/0/0 and add access-group 114 in
- E. Remove access-group 106 in from interface fa0/0 and add access-group 104 in

Answer : E

Explanation:

The question was not about FTP so skip line #1 and line #2.

The line #3 denies telnet traffic and line #4 permits icmp-echo traffic.

Line #5 denies echo-reply traffic. If any device pings a device that attached to Fa0/0, the packet will be denied.

Line #6 permits all other traffic.

Question 2:

What would be the effect of issuing the command **ip access-group 114 in** to the fa0/0 interface?

- A. Attempts to telnet to the router would fail
- B. It would allow all traffic from the 10.4.4.0 network
- C. IP traffic would be passed through the interface but TCP and UDP traffic would not
- D. Routing protocol updates for the 10.4.4.0 network would not be accepted from the fa0/0 interface

Answer: B

Explanation:

There is only one command that is associated with access-list 114 and it is **access-list 114 permit ip 10.4.4.0 0.0.0.255 any**. This command will permit traffic from 10.4.4.0 /24 network.

Question 3:

What would be the effect of issuing the command **access-group 115 in** on the s0/0/1 interface?

- A. No host could connect to Router through s0/0/1

- B. Telnet and ping would work but routing updates would fail.
- C. FTP, FTP-DATA, echo, and www would work but telnet would fail
- D. Only traffic from the 10.4.4.0 network would pass through the interface

Answer: A

Explanation:

The above command will only the IP (0.0.0.0). Also there is no such IP address exists.

The wildcard mask of access-list 115 is 255.255.255.0, means that only host with IP addresses x.x.x.0 will be accepted. If the 4th part of an IP address is 0, then definitely it would be a network address. So no host can communicate with other network using S0/0/1 interface.

But it will accept the packet with source IP address – 10.10.0.0/8. The 4th octet is 0, and is not a network address but a valid IP address. So confusion... confusion... Anyhow other 3 choices (B, C, D) will definitely not the answer and Choice A is closest to the result, So the Answer is A.

A. ACL Simlet

Correct Answer: A

Section: Simulation

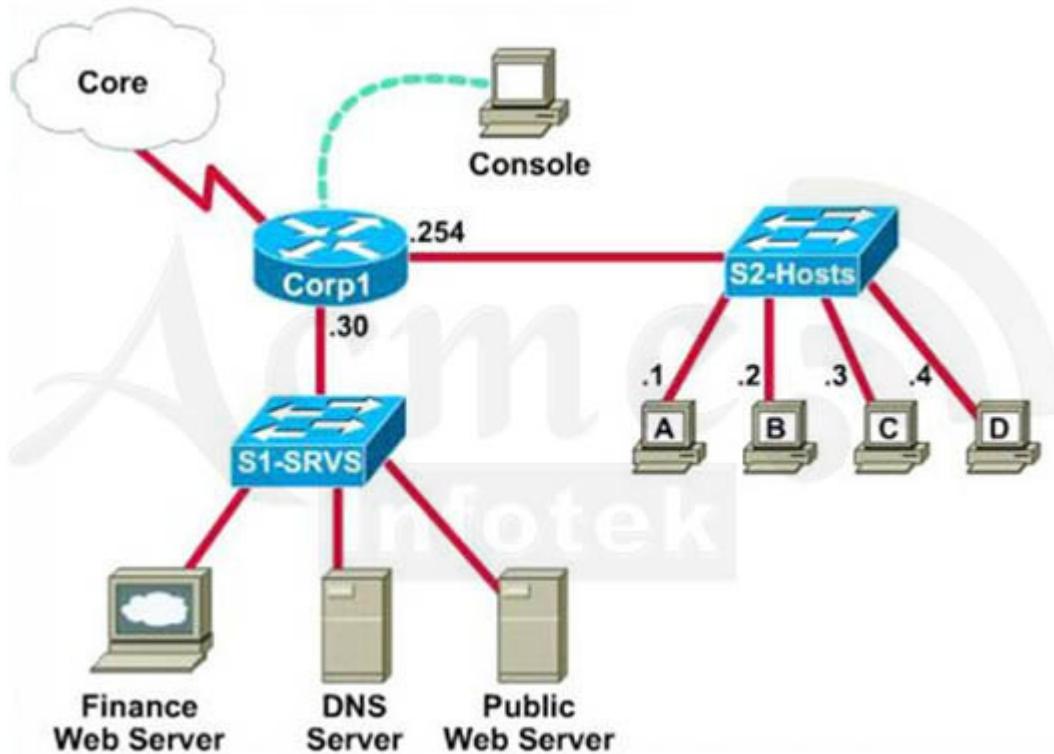
Explanation

Explanation/Reference:

QUESTION 260

A network associate is adding security to the configuration of the Corp1 router. The user on host C should be able to use a web browser to access financial information from the Finance Web Server. No other hosts from the LAN nor the Core should be able to use a web browser to access this server. Since there are multiple resources for the corporation at this location including other resources on the Finance Web Server, all other traffic should be allowed.

The task is to create and apply a numbered access-list with no more than three statements that will allow ONLY host C web access to the Finance Web Server. No other hosts will have web access to the Finance Web Server. All other traffic is permitted.



Access to the Router CLI can be gained by clicking on the appropriate host.

All passwords have been temporarily set to “cisco”.

The Core connection uses an IP address of 198.18.196.65

The computers in the Hosts LAN have been assigned addresses of 192.168.33.1 – 192.168.33.254

Host A 192.168.33.1
 Host B 192.168.33.2
 Host C 192.168.33.3
 Host D 192.168.33.4

The servers in the Server LAN have been assigned addresses of 172.22.242.17 – 172.22.242.30

The Finance Web Server is assigned an IP address of 172.22.242.23.

The Public Web Server is assigned an IP address of 172.22.242.17

A. Select to answer this question

Correct Answer: A
Section: Simulation
Explanation

Explanation/Reference:

Click the console PC and enter the following commands.

```
Corp1>enable
Password: cisco
```

We should create an access-list and apply it to the interface which is connected to the Server LAN because it can filter out traffic from both Sw-Hosts and Core networks. The Server LAN network has been assigned addresses of 172.22.242.17 - 172.22.242.30 so we can guess the interface connected to them has an IP address of 172.22.242.30 (.30 is the number shown in the figure). Use the "**show ip int brief**" command to check which interface has the IP address of 172.22.242.30.

```
Corp1# show ip int brief
```

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	192.168.33.254	YES	manual	up	up
FastEthernet0/1	172.22.242.30	YES	manual	up	up
Serial0/0	198.18.196.65	YES	manual	up	up

We learn that interface FastEthernet0/1 is the interface connected to Server LAN network. It is the interface we will apply our access-list (for outbound direction)

```
Corp1# configure terminal
```

Our access-list needs to allow host C - 192.168.33.3 to the Finance Web Server 172.22.242.23 via web (port 80)

```
Corp1(config)# access-list 100 permit tcp host 192.168.33.3 host 172.22.242.23 eq 80
```

Deny other hosts access to the Finance Web Server via web

```
Corp1(config)# access-list 100 deny tcp any host 172.22.242.23 eq 80
```

All other traffic is permitted

```
Corp1(config)# access-list 100 permitip any any
```

Apply this access-list to Fa0/1 interface (outbound direction)

```
Corp1(config)# int fa0/1
Corp1(config-if)# ip access-group 100 out
Corp1(config-if)# end
```

Notice:

We have to apply the access-list to Fa0/1 interface (not Fa0/0 interface) so that the access-list can filter traffic coming from the Core network.

Click on host C and open its web browser. In the address box type **http://172.22.242.23** to check if you are allowed to access Finance Web Server or not. If your configuration is correct then you can access it.

Click on other hosts (A, B and D) and check to make sure you can't access Finance Web Server from these hosts.

Finally, save the configuration

```
Corp1# copy run start
Destination filename [startup-config]?<ctrl-Z>
Building configuration...
[OK]
Corp1#
```

QUESTION 261

On a corporate network, hosts on the same VLAN can communicate with each other, but they are unable to communicate with hosts on different VLANs. What is needed to allow communication between the VLANs?

- A. a router with subinterfaces configured on the physical interface that is connected to the switch.
- B. a router with an IP address on the physical interface connected to the switch.
- C. a switch with an access link that is configured between the switches.
- D. a switch with a trunk link that is configured between the switches.

Correct Answer: A

Section: Switching

Explanation

Explanation/Reference:

Explanation:

QUESTION 262

The left provides some routing protocols, while the right gives several Cisco default administrator distances. Drag the items on the right to the proper locations.



Select and Place:

RIP	110
OSPF	1
static route reference IP address of next hop	120
internal EIGRP route	90
directly connected network	0

Correct Answer:

	120	
	110	
static route reference IP address of next hop	1	
	90	
	0	

Section: IP Routing Explanation

Explanation/Reference:

QUESTION 263

What are three approaches that are used when migrating from an IPv4 addressing scheme to an IPv6 scheme.
(Choose three.)

- A. enable dual-stack routing.

- B. configure IPv6 directly.
- C. configure IPv4 tunnels between IPv6 islands.
- D. use proxying and translation to translate IPv6 packets into IPv4 packets.
- E. statically map IPv4 addresses to IPv6 addresses.
- F. use DHCPv6 to map IPv4 addresses to IPv6 addresses.

Correct Answer: ACD

Section: IPv6

Explanation

Explanation/Reference:

Explanation:

QUESTION 264

What command is used to verify the DLCI destination address in a Frame Relay static configuration?

- A. show frame-relay pvc
- B. show frame-relay lmi
- C. show frame-relay map
- D. show frame relay end-to-end

Correct Answer: C

Section: WAN

Explanation

Explanation/Reference:

Explanation:

QUESTION 265

Which will fix the issue and allow ONLY ping to work while keeping telnet disabled?

Exhibit:

<output omitted>

```
interface Loopback1
  ip address 172.16.4.1 255.255.255.0
!
interface Loopback2
  ip address 10.145.145.1 255.255.255.0
  ipv6 address 2001:410:2:3::/64 eui-64
!
interface FastEthernet0/0
  ip address 10.4.4.3 255.255.255.0
  ip access-group 106 in
  duplex auto
  speed auto
!
interface FastEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface Serial0/0/0
  bandwidth 64
  no ip address
  ip access-group 102 out
  encapsulation frame-relay
  ip ospf authentication
  ip ospf authentication-key san-fran
!
interface Serial0/0/0.1 point-to-point
  ip address 10.140.3.2 255.255.255.0
  ip authentication mode eigrp 100 md5
  ip authentication key-chain eigrp 100 icndchain
  frame-relay interface-dlci 120
!
interface Serial0/0/1
  bandwidth 64
  ip address 10.45.45.1 255.255.255.0
  ip access-group 102 in
  ip authentication mode eigrp 100 md5
  ip authentication key-chain eigrp 100 icndchain
  ip ospf authentication
  ip ospf authentication-key san-fran
  ipv6 address 2001:410:2:10::/64 eui-64
!
router eigrp 100
  network 10.0.0.0
  network 172.16.0.0
  network 192.168.2.0
  no auto-summary
!
router ospf 100
```

- A. Correctly assign an IP address to interface fa0/1.
- B. Change the ip access-group command on fa0/0 from "in*" to "our.
- C. Remove access-group 106 in from interface fa0/0 and add access-group 115 in.
- D. Remove access-group 102 out from interface s0/0/0 and add access-group 114 in
- E. Remove access-group 106 in from interface fa0/0 and add access-group 104 in.

Correct Answer: E

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

Explanation: Let's have a look at the access list 104:

```
access-list 104 permit tcp any any eq ftp
access-list 104 permit tcp any any eq ftp-data
access-list 104 deny tcp any any eq telnet
access-list 104 permit icmp any any echo
access-list 104 permit icmp any any echo-reply
access-list 104 permit ip any any
```

The question does not ask about ftp traffic so we don't care about the two first lines. The 3rd line denies all telnet traffic and the 4th line allows icmp traffic to be sent (ping). Remember that the access list 104 is applied on the inbound direction so the 5th line "access-list 104 deny icmp any any echo-reply" will not affect our icmp traffic because the "echo-reply" message will be sent over the outbound direction.

QUESTION 266

Which are valid modes for a switch port used as a VLAN trunk? (Choose three.)

- A. transparent
- B. auto
- C. on
- D. desirable
- E. blocking
- F. forwarding

Correct Answer: BCD

Section: Switching

Explanation

Explanation/Reference:

Explanation:

QUESTION 267

What would be the effect of issuing the command `ip access-group 114 in` to the fa0/0 interface?

Exhibit:

<output omitted>

```
interface Loopback1
  ip address 172.16.4.1 255.255.255.0
!
interface Loopback2
  ip address 10.145.145.1 255.255.255.0
  ipv6 address 2001:410:2:3::/64 eui-64
!
interface FastEthernet0/0
  ip address 10.4.4.3 255.255.255.0
  ip access-group 106 in
  duplex auto
  speed auto
!
interface FastEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface Serial0/0/0
  bandwidth 64
  no ip address
  ip access-group 102 out
  encapsulation frame-relay
  ip ospf authentication
  ip ospf authentication-key san-fran
!
interface Serial0/0/0.1 point-to-point
  ip address 10.140.3.2 255.255.255.0
  ip authentication mode eigrp 100 md5
  ip authentication key-chain eigrp 100 icndchain
  frame-relay interface-dlci 120
!
interface Serial0/0/1
  bandwidth 64
  ip address 10.45.45.1 255.255.255.0
  ip access-group 102 in
  ip authentication mode eigrp 100 md5
  ip authentication key-chain eigrp 100 icndchain
  ip ospf authentication
  ip ospf authentication-key san-fran
  ipv6 address 2001:410:2:10::/64 eui-64
!
router eigrp 100
  network 10.0.0.0
  network 172.16.0.0
  network 192.168.2.0
  no auto-summary
!
router ospf 100
```

- A. Attempts to telnet to the router would fail.
- B. It would allow all traffic from the 10.4.4.0 network.
- C. IP traffic would be passed through the interface but TCP and UDP traffic would not.
- D. Routing protocol updates for the 10.4.4.0 network would not be accepted from the fa0/0 interface.

Correct Answer: B

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

Explanation: From the output of access-list 114: access-list 114 permit ip 10.4.4.0 0.0.0.255 any we can easily understand that this access list allows all traffic (ip) from 10.4.4.0/24 network

QUESTION 268

Which three are the components of SNMP? (Choose three)

- A. MIB
- B. SNMP Agent
- C. SysLog Server
- D. SNMP Manager
- E. Set

Correct Answer: ABD

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 269

What are the popular destinations for Syslog messages to be saved?

- A. Flash
- B. Syslog server
- C. The logging buffer .RAM
- D. The console terminal
- E. Other terminals

Correct Answer: BCD

Section: Syslog

Explanation

Explanation/Reference:

QUESTION 270

Syslog was configured with a level 3 trap. Which 3 types of logs would be generated (choose three)

- A. Emergencies
- B. Alerts
- C. Errors
- D. Critical
- E. Warnings

Correct Answer: ABD

Section: Syslog

Explanation

Explanation/Reference:

QUESTION 271

What are the benefits of using Netflow? (Choose three.)

- A. Network, Application & User Monitoring
- B. Network Planning
- C. Security Analysis
- D. Accounting/Billing

Correct Answer: ACD

Section: Netflow

Explanation

Explanation/Reference:

QUESTION 272

Which protocol can cause overload on a CPU of a managed device?

- A. Netflow
- B. WCCP
- C. IP SLA
- D. SNMP

Correct Answer: D

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 273

Which one of these is a valid HSRP Virtual Mac Address?

- A. 0000.0C07.AC01
- B. 0000.5E00.0110
- C. 0007.B400.1203
- D. 0000.C007.0201

Correct Answer: A

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 274

What are the three things that the Netflow uses to consider the traffic to be in a same flow?

- A. IP address
- B. Interface name
- C. Port numbers
- D. L3 protocol type
- E. MAC address

Correct Answer: ACD

Section: Netflow

Explanation

Explanation/Reference:

QUESTION 275

What is the alert message generated by SNMP agents called ?

- A. SET
- B. TRAP
- C. GET
- D. INFORM

Correct Answer: BD

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 276

Which three features are added in SNMPv3 over SNMPv2?

- A. Message Integrity
- B. Compression
- C. Authentication
- D. Encryption
- E. Error Detection

Correct Answer: ACD

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 277

In a GLBP network, who is responsible for the arp request?

- A. AVF
- B. AVG
- C. Active Router
- D. Standby Router

Correct Answer: B

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 278

What levels will be trapped if the administrator executes the command
router(cfg) # logging trap 4

- A. Emergency
- B. Notice
- C. Alert
- D. Error
- E. Warning

Correct Answer: ACDE

Section: Syslog

Explanation

Explanation/Reference:

QUESTION 279

Which is true about OSPF router-id? (Choose two .)

- A. It is used for type 1 router LSA
- B. router-id needs to be matched on OSPF neighbors
- C. Highest IP address of the loopback is used
- D. router-id is 16 bit

Correct Answer: AC

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 280

In GLBP, which router will respond to client ARP requests?

- A. The active virtual gateway will reply with one of four possible virtual MAC addresses.
- B. All GLBP member routers will reply in round-robin fashion.
- C. The active virtual gateway will reply with its own hardware MAC address.
- D. The GLBP member routers will reply with one of four possible burned in hardware addresses.

Correct Answer: A

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 281

Which statement describes VRRP object tracking?

- A. It monitors traffic flow and link utilization.
- B. It ensures the best VRRP router is the virtual router master for the group.
- C. It causes traffic to dynamically move to higher bandwidth links
- D. It thwarts man-in-the-middle attacks.

Correct Answer: B

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 282

What are three benefits of GLBP? (Choose three.)

- A. GLBP supports up to eight virtual forwarders per GLBP group.
- B. GLBP supports clear text and MD5 password authentication between GLBP group members.
- C. GLBP is an open source standardized protocol that can be used with multiple vendors.
- D. GLBP supports up to 1024 virtual routers.
- E. GLBP can load share traffic across a maximum of four routers.
- F. GLBP elects two AVGs and two standby AVGs for redundancy.

Correct Answer: BDE

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 283

Which three statements about HSRP operation are true? (Choose three.)

- A. The virtual IP address and virtual MA+K44C address are active on the HSRP Master router.
- B. The HSRP default timers are a 3 second hello interval and a 10 second dead interval.
- C. HSRP supports only clear-text authentication.
- D. The HSRP virtual IP address must be on a different subnet than the routers' interfaces on the same LAN.
- E. The HSRP virtual IP address must be the same as one of the router's interface addresses on the LAN.
- F. HSRP supports up to 255 groups per interface, enabling an administrative form of load balancing.

Correct Answer: ABF

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 284

Which three statements about Syslog utilization are true? (Choose three.)

- A. Utilizing Syslog improves network performance.
- B. The Syslog server automatically notifies the network administrator of network problems.
- C. A Syslog server provides the storage space necessary to store log files without using router disk space.
- D. There are more Syslog messages available within Cisco IOS than there are comparable SNMP trap

- messages.
- E. Enabling Syslog on a router automatically enables NTP for accurate time stamping.
 - F. A Syslog server helps in aggregation of logs and alerts.

Correct Answer: CDF

Section: Syslog

Explanation

Explanation/Reference:

QUESTION 285

A network administrator enters the following command on a router: logging trap 3. What are three message types that will be sent to the Syslog server? (Choose three.)

- A. informational
- B. emergency
- C. warning
- D. critical
- E. debug
- F. error

Correct Answer: BDF

Section: Syslog

Explanation

Explanation/Reference:

QUESTION 286

What is the default Syslog facility level?

- A. local4
- B. local5
- C. local6
- D. local7

Correct Answer: D

Section: Syslog

Explanation

Explanation/Reference:

QUESTION 287

What command instructs the device to timestamp Syslog debug messages in milliseconds?

- A. service timestamps log datetime localtime
- B. service timestamps debug datetime msec
- C. service timestamps debug datetime localtime
- D. service timestamps log datetime msec

Correct Answer: B

Section: Syslog

Explanation

Explanation/Reference:

QUESTION 288

Which three statements about the features of SNMPv2 and SNMPv3 are true? (Choose three.)

- A. SNMPv3 enhanced SNMPv2 security features
- B. SNMPv3 added the Inform protocol message to SNMP.
- C. SNMPv2 added the Inform protocol message to SNMP.
- D. SNMPv3 added the GetBulk protocol messages to SNMP.
- E. SNMPv2 added the GetBulk protocol message to SNMP.
- F. SNMPv2 added the GetNext protocol message to SNMP.

Correct Answer: ACE

Section: SNMP/HSRP/GLBP

Explanation

Explanation/Reference:

QUESTION 289

What are three reasons to collect Netflow data on a company network? (Choose three.)

- A. To identify applications causing congestion.
- B. To authorize user network access.
- C. To report and alert link up / down instances.
- D. To diagnose slow network performance, bandwidth hogs, and bandwidth utilization.
- E. To detect suboptimal routing in the network.
- F. To confirm the appropriate amount of bandwidth that has been allocated to each Class of Service.

Correct Answer: ADF

Section: Netflow

Explanation

Explanation/Reference:

QUESTION 290

What Netflow component can be applied to an interface to track IPv4 traffic?

- A. flow monitor
- B. flow record
- C. flow sampler
- D. flow exporter

Correct Answer: A

Section: Netflow

Explanation

Explanation/Reference:

QUESTION 291

What Cisco IOS feature can be enabled to pinpoint an application that is causing slow network performance?

- A. SNMP
- B. Netflow
- C. WCCP
- D. IP SLA

Correct Answer: B

Section: Netflow

Explanation

Explanation/Reference:

QUESTION 292

What command visualizes the general NetFlow data on the command line?

- A. show ip flow export
- B. show ip flow top-talkers
- C. show ip cache flow
- D. show mls sampling
- E. show mls netflow ip

Correct Answer: C

Section: Netflow

Explanation

Explanation/Reference:

QUESTION 293

What are three values that must be the same within a sequence of packets for Netflow to consider them a network flow? (Choose three.)

- A. source IP address
- B. source MAC address
- C. egress interface
- D. ingress interface
- E. destination IP address
- F. IP next-hop

Correct Answer: ADE

Section: Netflow

Explanation

Explanation/Reference:

QUESTION 294

What are three factors a network administrator must consider before implementing Netflow in the network? (Choose three.)

- A. CPU utilization
- B. where Netflow data will be sent
- C. number of devices exporting Netflow data

- D. port availability
- E. SNMP version
- F. WAN encapsulation

Correct Answer: ABC

Section: Netflow

Explanation

Explanation/Reference:

QUESTION 295

When a router undergoes the exchange protocol within OSPF, in what order does it pass through each state?

- A. exstart state > loading state > exchange state > full state
- B. exstart state > exchange state > loading state > full state
- C. exstart state > full state > loading state > exchange state
- D. loading state > exchange state > full state > exstart state

Correct Answer: B

Section: WAN

Explanation

Explanation/Reference:

QUESTION 296

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

```
Router1# show interfaces serial 0/0

Serial0/0 is down, line protocol is down
Hardware is MK5025
Serial Internet address is 10.1.1.2/24
MTU 1500 bytes, BW 1544 Kbits, DLY 20000 usec, rely 255/255 load 9/255
Encapsulation PPP, loopback not set, keepalive set (10 sec)
```

- 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.

Correct Answer: AD

Section: WAN

Explanation

Explanation/Reference:

QUESTION 297

Before installing a new, upgraded version of the IOS, what should be checked on the router, and which

command should be used to gather this information? (Choose two.)

- A. the amount of available ROM.
- B. the amount of available flash and RAM memory.
- C. the version of the bootstrap software present on the router.
- D. show version
- E. show processes
- F. show running-config

Correct Answer: BD

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 298

A network administrator is explaining VTP configuration to a new technician. What should the network administrator tell the new technician about VTP configuration? (Choose three.)

- A. A switch in the VTP client mode cannot update its local VLAN database.
- B. A trunk link must be configured between the switches to forward VTP updates.
- C. A switch in the VTP server mode can update a switch in the VTP transparent mode.
- D. A switch in the VTP transparent mode will forward updates that it receives to other switches.
- E. A switch in the VTP server mode only updates switches in the VTP client mode that have a higher VTP revision number.
- F. A switch in the VTP server mode will update switches in the VTP client mode regardless of the configured VTP domain membership.

Correct Answer: ABD

Section: Switching

Explanation

Explanation/Reference:

QUESTION 299

Which two locations can be configured as a source for the IOS image in the boot system command? (Choose two.)

- A. RAM
- B. NVRAM
- C. flash memory
- D. HTTP server
- E. TFTP server
- F. Telnet server

Correct Answer: CE

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 300

A company is installing IP phones. The phones and office computers connect to the same device. To ensure maximum throughput for the phone data, the company needs to make sure that the phone traffic is on a different network from that of the office computer data traffic. What is the best network device to which to directly connect the phones and computers, and what technology should be implemented on this device? (Choose two.)

- A. hub
- B. router
- C. switch
- D. STP
- E. subinterfaces
- F. VLAN

Correct Answer: CF

Section: Switching

Explanation

Explanation/Reference:

QUESTION 301

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

Correct Answer: BC

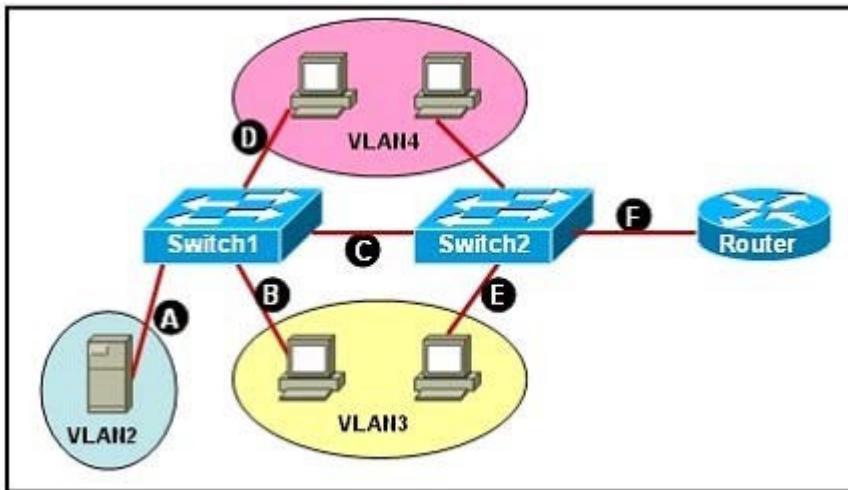
Section: Switching

Explanation

Explanation/Reference:

QUESTION 302

Refer to the exhibit. A network associate needs to configure the switches and router in the graphic so that the hosts in VLAN3 and VLAN4 can communicate with the enterprise server in VLAN2. Which two Ethernet segments would need to be configured as trunk links? (Choose two.)



- A. A
- B. B
- C. C
- D. D
- E. E
- F. F

Correct Answer: CF

Section: Switching

Explanation

Explanation/Reference:

QUESTION 303

A network administrator changes the configuration register to 0x2142 and reboots the router. What are two results of making this change? (Choose two.)

- A. The IOS image will be ignored.
- B. The router will prompt to enter initial configuration mode.
- C. The router will boot to ROM.
- D. Any configuration entries in NVRAM will be ignored.
- E. The configuration in flash memory will be booted.

Correct Answer: BD

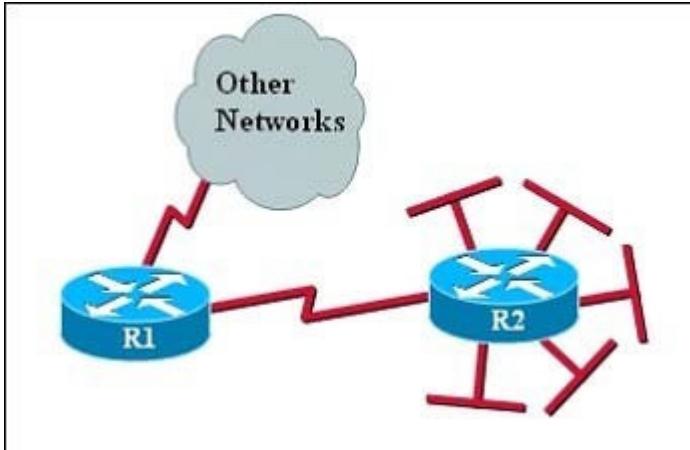
Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 304

Refer to the exhibit. The networks connected to router R2 have been summarized as a 192.168.176.0/21 route and sent to R1. Which two packet destination addresses will R1 forward to R2? (Choose two.)



- A. 192.168.194.160
- B. 192.168.183.41
- C. 192.168.159.2
- D. 192.168.183.255
- E. 192.168.179.4
- F. 192.168.184.45

Correct Answer: BE

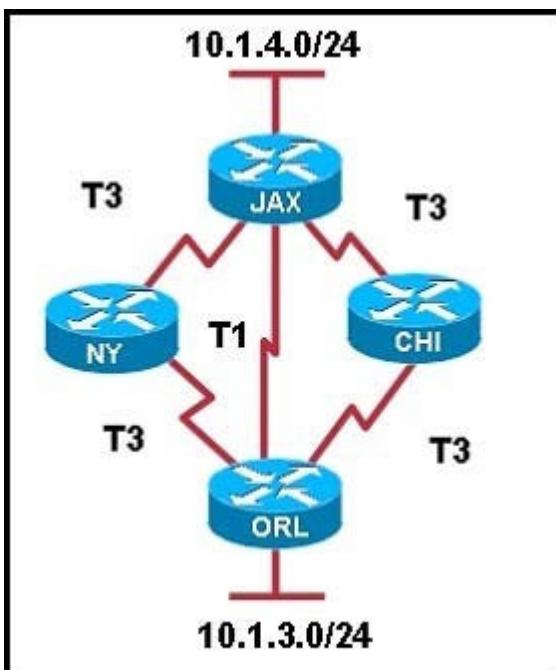
Section: IP Addressing / VLSM

Explanation

Explanation/Reference:

QUESTION 305

Refer to the exhibit. Which three statements are true about how router JAX will choose a path to the 10.1.3.0/24 network when different routing protocols are configured? (Choose three.)



- A. By default, if RIPv2 is the routing protocol, only the path JAX-ORL will be installed into the routing table.
- B. The equal cost paths JAX-CHI-ORL and JAX- NY-ORL will be installed in the routing table if RIPv2 is the routing protocol.
- C. When EIGRP is the routing protocol, only the path JAX-ORL will be installed in the routing table by default.
- D. When EIGRP is the routing protocol, the equal cost paths JAX-CHI-ORL, and JAX-NY- ORL will be installed in the routing table by default.
- E. With EIGRP and OSPF both running on the network with their default configurations, the EIGRP paths will be installed in the routing table.
- F. The OSPF paths will be installed in the routing table, if EIGRP and OSPF are both running on the network with their default configurations.

Correct Answer: ADE

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 306

Switch ports operating in which two roles will forward traffic according to the IEEE 802.1w standard? (Choose two.)

- A. alternate
- B. backup
- C. designated
- D. disabled
- E. root

Correct Answer: CE

Section: Switching

Explanation

Explanation/Reference:

QUESTION 307

Refer to the exhibit. Given the output shown from this Cisco Catalyst 2950, what is the most likely reason that interface FastEthernet 0/10 is not the root port for VLAN 2?

```
Switch# show spanning-tree interface fastethernet0/10
Vlan      Role Sts Cost    Prio.Nbr Type
-----  -----
VLAN0001   Root FWD 19    128.1    P2p
VLAN0002   Altn BLK 19    128.2    P2p
VLAN0003   Root FWD 19    128.2    P2p
```

- A. This switch has more than one interface connected to the root network segment in VLAN 2.
- B. This switch is running RSTP while the elected designated switch is running 802.1d Spanning Tree.
- C. This switch interface has a higher path cost to the root bridge than another in the topology.
- D. This switch has a lower bridge ID for VLAN 2 than the elected designated switch.

Correct Answer: C

Section: Switching

Explanation

Explanation/Reference:

QUESTION 308

Lab Simulation Question - CLI

Central Florida Widgets recently installed a new router in their office. Complete the network installation by performing the initial router configurations and configuring R1PV2 routing using the router command line interface (CLI) on the RC.

Configure the router per the following requirements:

Name of the router is R2

Enable secret password is cisco

The password to access user EXEC mode using the console is cisco2 The password to allow telnet access to the router is cisco3 IPv4 addresses must be configured as follows:

Ethernet network 209.165.201.0/27 - router has fourth assignable host address in subnet Serial network is 192.0.2.176/28 - router has last assignable host address in the subnet.

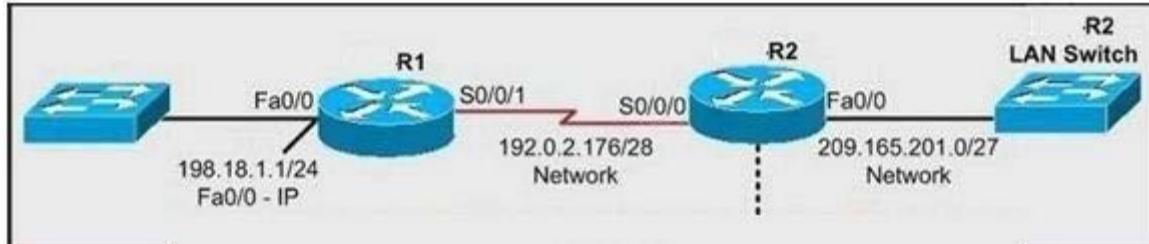
Interfaces should be enabled.

Router protocol is RIPV2

Attention:

In practical examinations, please note the following, the actual information will prevail.

1. Name or the router is xxx
2. Enable secret password is xxx
3. Password In access user EXEC mode using the console is xxx
4. The password to allow telnet access to the router is xxx
5. IP information



A.

B.

C.

D.

Correct Answer:

Section: Simulation

Explanation

Explanation/Reference:

```
Router> enable
Router# config terminal
Router(config)# hostname R2
R2(config)# enable secret Cisco 1
R2(config)# line console 0
R2(config-line)# password Cisco 2
R2(config-line)# exit
R2(config)# line vty 0 4
R2(config-line)# password Cisco 3
```

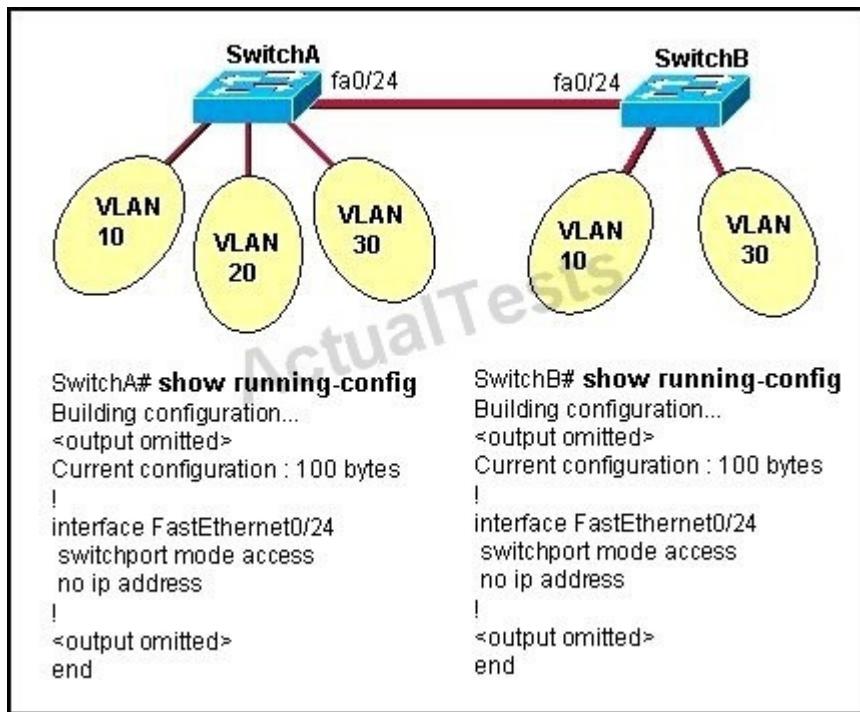
```

R2(config-line)# login
R2(config-line)# exit
R2(config)# interface fa0/0
R2(config-if)# ip address 209.165.201.1 255.255.255.224
R2(config)# interface s0/0/0
R2(config-if)# ip address 192.0.2.176 255.255.255.240
R2(config-if)# no shutdown
R2(config-if)# exit
R2(config)# router rip
R2(config-router)# version 2
R2(config-router)# network 209.165.201.0
R2(config-router)# network 192.0.2.176
R2(config-router)# end
R2# copy run start

```

QUESTION 309

Refer to the exhibit.



All switch ports are assigned to the correct VLANs, but none of the hosts connected to SwitchA can communicate with hosts in the same VLAN connected to SwitchB. Based on the output shown, what is the most likely problem?

- A. The access link needs to be configured in multiple VLANs.
- B. The link between the switches is configured in the wrong VLAN.
- C. The link between the switches needs to be configured as a trunk.
- D. VTP is not configured to carry VLAN information between the switches.
- E. Switch IP addresses must be configured in order for traffic to be forwarded between the switches.

Correct Answer: C

Section: Switching

Explanation

Explanation/Reference:

Explanation:

QUESTION 310

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

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

Correct Answer: AD

Section: IPv6

Explanation

Explanation/Reference:

Explanation:

QUESTION 311

What will be the result if the following configuration commands are implemented on a Cisco switch?

```
Switch(config-if)# switchport port-security  
Switch(config-if)# switchport port-security mac-address sticky
```

- A. A dynamically learned MAC address is saved in the startup-configuration file.
- B. A dynamically learned MAC address is saved in the running-configuration file.
- C. A dynamically learned MAC address is saved in the VLAN database.
- D. Statically configured MAC addresses are saved in the startup-configuration file if frames from that address are received.
- E. Statically configured MAC addresses are saved in the running-configuration file if frames from that address are received.

Correct Answer: B

Section: Switching

Explanation

Explanation/Reference:

Explanation:

QUESTION 312

List 3 components of SNMP ?

- A. MIB
- B. NMS (Manager)
- C. Agent
- D. SET

Correct Answer: ABC

Section: Managing Cisco IOS

Explanation

Explanation/Reference:

QUESTION 313

Refer to the exhibit.

```
*Mar 01, 00:37:57.3737: %SYS-5-CONFIG_I: Configured from console by console
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to administratively down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 10.10.11.2 (FastEthernet0/1) is down: interface down
```

What is the cause of the Syslog output messages?

- A. The EIGRP neighbor on Fa0/1 went down due to a failed link.
- B. The EIGRP neighbor connected to Fa0/1 is participating in a different EIGRP process, causing the adjacency to go down.
- C. A shut command was executed on interface Fa0/1, causing the EIGRP adjacency to go down.
- D. Interface Fa0/1 has become error disabled, causing the EIGRP adjacency to go down.

Correct Answer: C

Section: IP Routing

Explanation

Explanation/Reference:

QUESTION 314

What are two enhancements that OSPFv3 supports over OSPFv2? (Choose two.)

- A. It requires the use of ARP.
- B. It can support multiple IPv6 subnets on a single link.
- C. It supports up to 2 instances of OSPFv3 over a common link.
- D. It routes over links rather than over networks.

Correct Answer: BD

Section: IP Routing

Explanation

Explanation/Reference: