Exam Questions 200-125

CCNA Cisco Certified Network Associate CCNA (v3.0)

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1.What is one benefit of PVST+?

A. PVST+ supports Layer 3 load balancing without loops.

B. PVST+ reduces the CPU cycles for all the switches in the network.

C. PVST+ allows the root switch location to be optimized per VLAN.

D. PVST+ automatically selects the root bridge location, to provide optimized bandwidth usage.

Answer: C

Explanation:

The PVST+ provides Layer 2 load-balancing for the VLAN on which it runs. You can create different logical topologies by using the VLANs on your network to ensure that all of your

links are used but that no one link is oversubscribed. Each instance of PVST+ on a VLAN has a single root switch. This root switch propagates the spanning-tree information

associated with that VLAN to all other switches in the network. Because each switch has the same information about the network, this process ensures that the network topology is

maintained and optimized per VLAN.

Reference:

http://www.cisco.com/en/US/docs/switches/lan/catalyst3750x_3560x/software/release/12.2_55_se/configuration/guide/swstp.html

2. Which feature facilitates the tagging of frames on a specific VLAN?

A. routing

B. hairpinning

C. switching

D. encapsulation

Answer: D

3. Which WAN topology provides a direct connection from each site to all other sites on the network?

A. single-homed

B. full mesh

C. point-to-point

D. hub-and-spoke

Answer: B

4. 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 and the MAC address table.

B. Unknown unicast frames are retransmitted only to the ports that belong to the same VLAN.

C. Broadcast and multicast frames are retransmitted to ports that are configured on different VLAN.

D. Ports between switches should be configured in access mode so that VLANs can span across the ports.

Answer: B

Explanation:

Each VLAN resides in its own broadcast domain, so incoming frames with unknown destinations are only transmitted to ports that reside in the same VLAN as the incoming frame.

5. 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 MAC address

C. the switch with the highest IP address

D. the switch with the lowest IP address

Answer: B

Explanation:

Each switch in your network will have a Bridge ID Priority value, more commonly referred to as a BID. This BID is a combination of a default priority value and the switch's MAC address, with the priority value listed first. The lowest BID will win the election process.

For example, if a Cisco switch has the default priority value of 32,768 and a MAC address of 11-22-33-44-55-66, the BID would be 32768:11-22-33-44-55-66. Therefore, if the switch priority is left at the default, the MAC address is the deciding factor in the root bridge election.

6. Which two options are primary responsibilities of the APIC-EM controller? (Choose two.)

A. It automates network actions between different device types.

B. It provides robust asset management.

C. It tracks license usage and Cisco IOS versions.

D. It automates network actions between legacy equipment.

E. It makes network functions programmable.

Answer: AE

7. Which command can you enter to troubleshoot the failure of address assignments?

A. show ip dhcp pool

B. show ip dhcp database

C. show ip dhcp import

D. clear ip dhcp server statistics

Answer: A

8. Which three options are the major components of a network virtualization architecture? (Choose three.)

A. virtual network services

B. authentication services

C. network access control

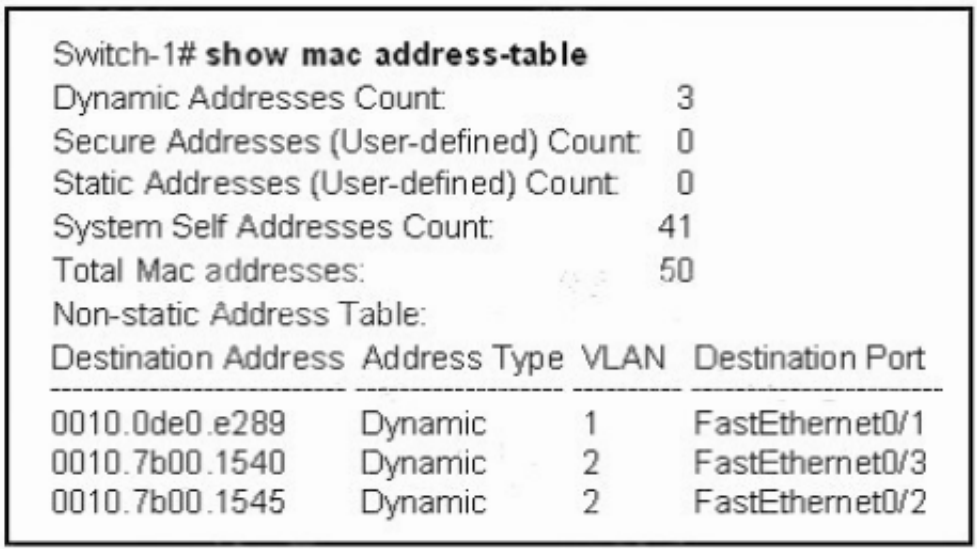
D. network resilience

E. path isolation

F. policy enforcement

Answer: CDE

9. Refer to the exhibit.



```
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
```

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?

A. Switch-1 will drop the data because it does not have an entry for that MAC address.

B. Switch-1 will flood the data out all of its ports except the port from which the data originated.

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

D. Switch-1 will forward the data to its default gateway.

Answer: B

Explanation:

This question tests the operating principles of the Layer 2 switch. Check the MAC address table of Switch1 and find that the MAC address of the host does not exist in the table.

Switch1 will flood the data out all of its ports except the port from which the data originated to determine which port the host is located in.

Switches work as follows:

Switches learn the MAC addresses of PCs or workstations that are connected to their switch ports by examining the source address of frames that are received on that port.

Machines may have been removed from a port, turned off, or moved to another port on the same switch or a different switch.

This could cause confusion in frame forwarding.

The MAC address entry is automatically discarded or aged out after 300 seconds

If there is not MAC address of destination host in MAC table, switch sends broadcast to all ports except the source to find out the destination host.

In output there is no MAC address of give host so switch floods to all ports except the source port.

10. 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

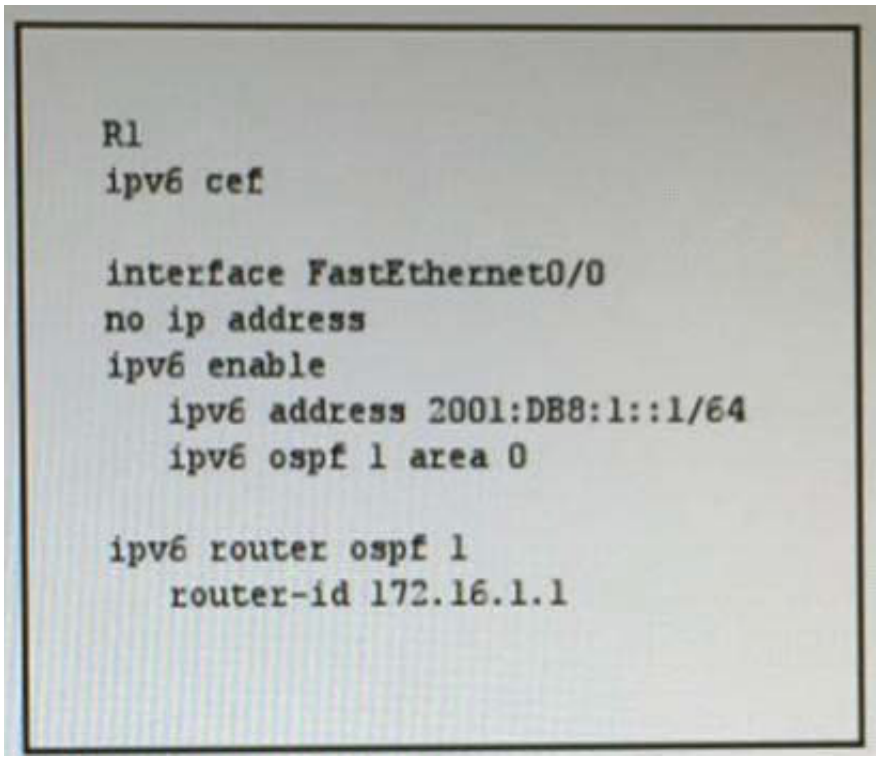
Answer: A

Explanation:

ICMP pings are used to verify connectivity between two IP hosts. Traceroute is used to verify the router hop path traffic will take but in this case since the hosts are in the same

LAN there will be no router hops involved.

11. Refer to the exhibit.



After you apply the given configuration to R1, you notice that it failed to enable OSPF Which action can you take to correct the problem?

A. Configure a loopback interface on R1

B. Enable lPv6 unicast routing on R1.

C. Configure an lPv4 address on interface FO/O.

D. Configure an autonomous system number on OSPF.

Answer: C

12. Which type of MAC address is aged automatically by the switch?

A. automatic

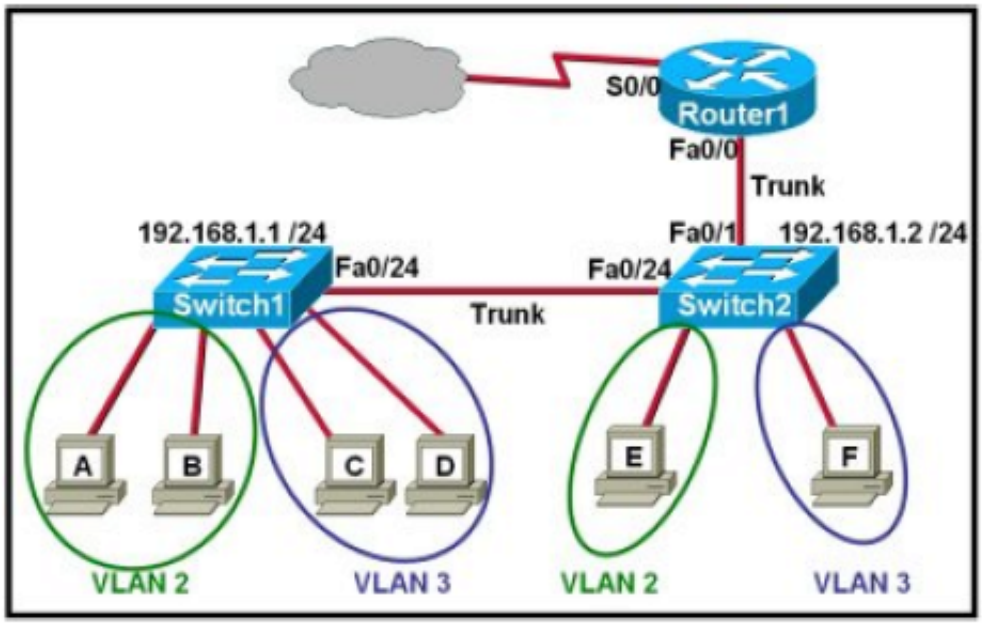
B. manual

C. dynamic

D. static

Answer: C

13. 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 the FastEthernet 0/1 interface on Switch2 trunk ports must be configured using the same encapsulation type.

Answer: D,F

Explanation:

In order for multiple VLANs to connect to a single physical interface on a Cisco router, subinterfaces must be used, one for each VLAN. This is known as the router on a stick

configuration. Also, for any trunk to be formed, both ends of the trunk must agree on the encapsulation type, so each one must be configured for 802.1q or ISL.

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

A. path cost

B. lowest port MAC address

C. VTP revision number

D. highest port priority number

E. port priority number and MAC address

Answer: A

Explanation:

The path cost to the root bridge is the most important value to determine which port will become the root port on each non-root switch. In particular, the port with lowest cost to the root bridge will become root port (on non-root switch).

15. 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

Answer: A,D

Explanation:

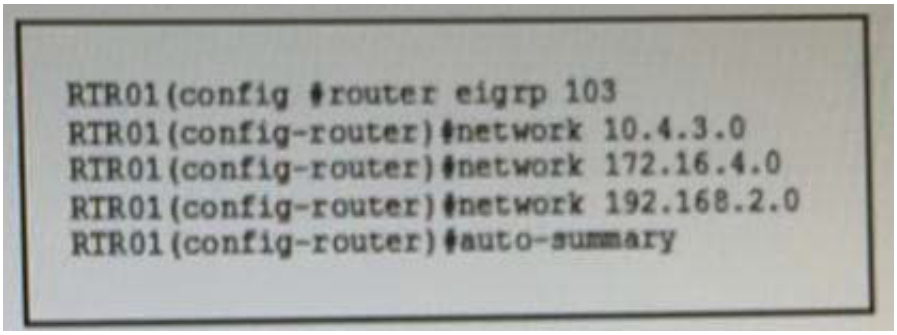
This question is to examine the STP protocol.

STP (802.1d) is used to prevent Layer 2 loops.

802.1q is a Frame Relay protocol which belongs to VLAN.

SAP is a concept of the OSI model.

16. Refer to the exhibit.



If RTRO1 as configured as shown, which three addresses will be received by other routers that are running ElGRP on the network? (Choose three.)

A. 172.16.4.O

B. 1O.O.O.O

C. 172.16.O.O

D. 192.168.2.O

E. 192.168.O.O

F. 1O.4.3.O

Answer: ACD

17. Which two statements about TACACS+ are true? (Choose two.)

A. lt can run on a UNIX server.

B. lt authenticates against the user database on the local device.

C. lt is more secure than AAA authentication.

D. lt is enabled on Cisco routers by default.

E. lt uses a managed database.

Answer: BC

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

A. It is used exclusively for tagging VLAN frames and does not address network reconvergence following switched network topology changes.

B. It modifies the 802.3 frame header, and thus requires that the FCS be recomputed.

C. It is a Layer 2 messaging protocol which maintains VLAN configurations across networks.

D. It includes an 8-bit field which specifies the priority of a frame.

E. It is a trunking protocol capable of carrying untagged frames.

Answer: B,E

Explanation:

802.1Q protocol, or Virtual Bridged Local Area Networks protocol, mainly stipulates the realization of the VLAN. 802.1Q is a standardized relay method that inserts 4 bytes field into the original Ethernet frame and re-calculate the FCS. 802.1Q frame relay supports two types of frame: marked and non-marked. Non-marked frame carries no VLAN identification information.

19. Which command enables RSTP on a switch?

A. spanning-tree uplinkfast

B. spanning-tree mode rapid-pvst

C. spanning-tree backbonefast

D. spanning-tree mode mst

Answer: B

Explanation:

Rapid Spanning Tree Protocol (RSTP) is an enhancement of the original STP 802.1D protocol. The RSTP 802.1w protocol is an IEEE open implementation. Cisco has its own proprietary implementation of RSTP, that includes the benefits of its Per-VLAN spanning tree protocols, called Rapid-PVST+.

To activate the Rapid-PVST+ protocol:

switch(config)#spanning-tree mode rapid-pvst

20. A switch is configured with all ports assigned to VLAN 2 with full duplex FastEthernet to segment existing departmental traffic. What is the effect of adding switch ports to a new VLAN on the switch?

A. More collision domains will be created.

B. IP address utilization will be more efficient.

C. More bandwidth will be required than was needed previously.

D. An additional broadcast domain will be created.

Answer: D

Explanation:

Each VLAN creates its own broadcast domain. Since this is a full duplex switch, each port is a separate collision domain.

21. Refer to the exhibit.

```
ALSwitch1# show running-config
«output omitted»
interface FastEthernet0/24 no ip address
«output omitted»
ALSwitch1# show interfaces FastEthernet0/24 switchport
Name: Fa0/24
Switchport: Enable
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
Operation private-vlan: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL

Protected: false

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

Switch port FastEthernet 0/24 on ALSwitch1 will be used to create an IEEE 802.1Qcompliant trunk to another

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

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.

Answer: C

Explanation:

According to the output shown the switchport (layer 2 Switching) is enabled and the port is in access mode. To make a trunk link the port should configured as a trunk port, not an access port, by using the following command: (Config-if)#switchport mode trunk.

22. 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 rejected.

B. The port turns amber.

C. The command is accepted and the respective VLAN is added to vlan.dat.

D. The command is accepted and you must configure the VLAN manually.

Answer: C

Explanation:

The "switchport access vlan 3"will put that interface as belonging to VLAN 3 while also updated the VLAN database automatically to include VLAN 3.

23. 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 giants 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.

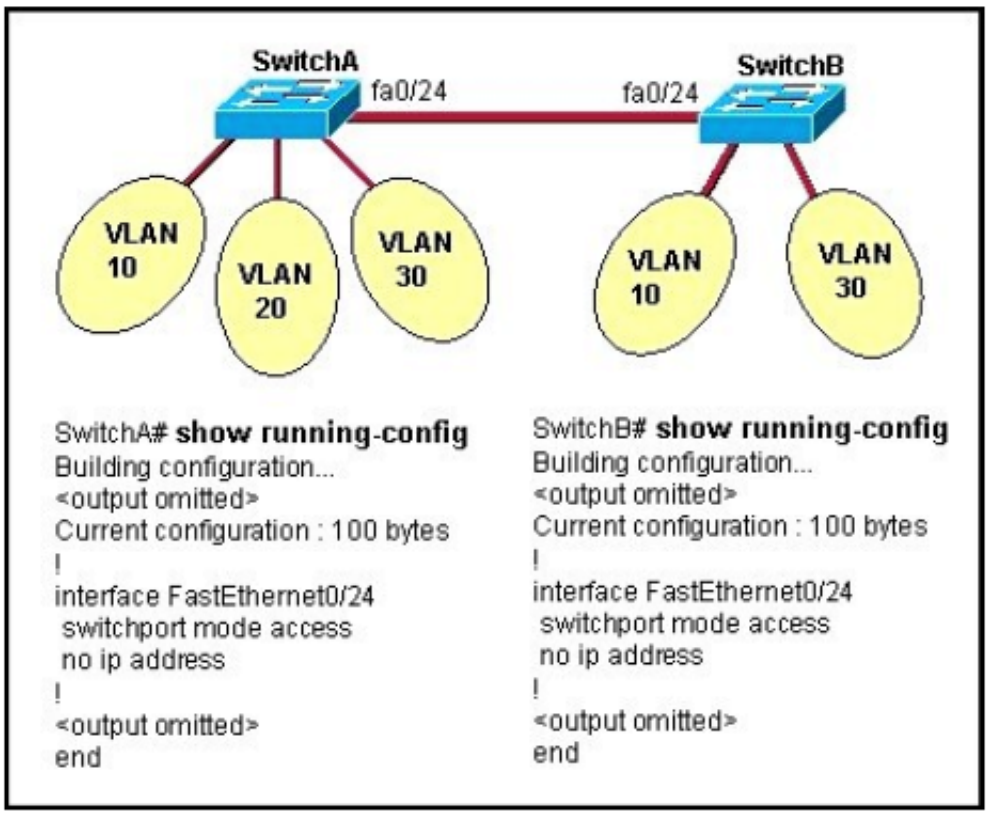
D. VLAN 10 on CAT1 and VLAN 1 on CAT2 will send tagged frames.

Answer: C

Explanation:

A "native VLAN mismatch" error will appear by CDP if there is a native VLAN mismatch on an 802.1Q link. “VLAN mismatch” can cause traffic from one vlan to leak into another vlan.

24. 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.

Answer: C

Explanation:

In order to pass traffic from VLANs on different switches, the connections between the switches must be configured as trunk ports.

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

A. It creates a VLAN 999 interface.

B. It designates VLAN 999 for untagged traffic.

C. It blocks VLAN 999 traffic from passing on the trunk.

D. It designates VLAN 999 as the default for all unknown tagged traffic.

Answer: B

Explanation:

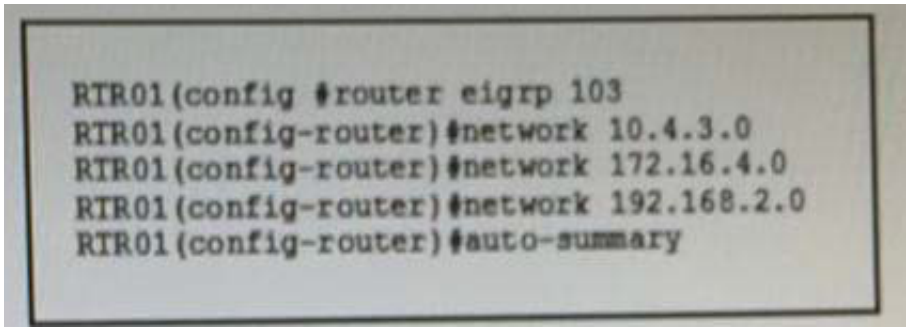
Configuring the Native VLAN for Untagged Traffic

A trunk port configured with 802.1Q tagging can receive both tagged and untagged traffic.

By default, the switch forwards untagged traffic in the native VLAN configured for the port.

The native VLAN is VLAN 1 by default.

26. Refer to the exhibit.



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B. 1O.O.O.O

C. 172.16.O.O

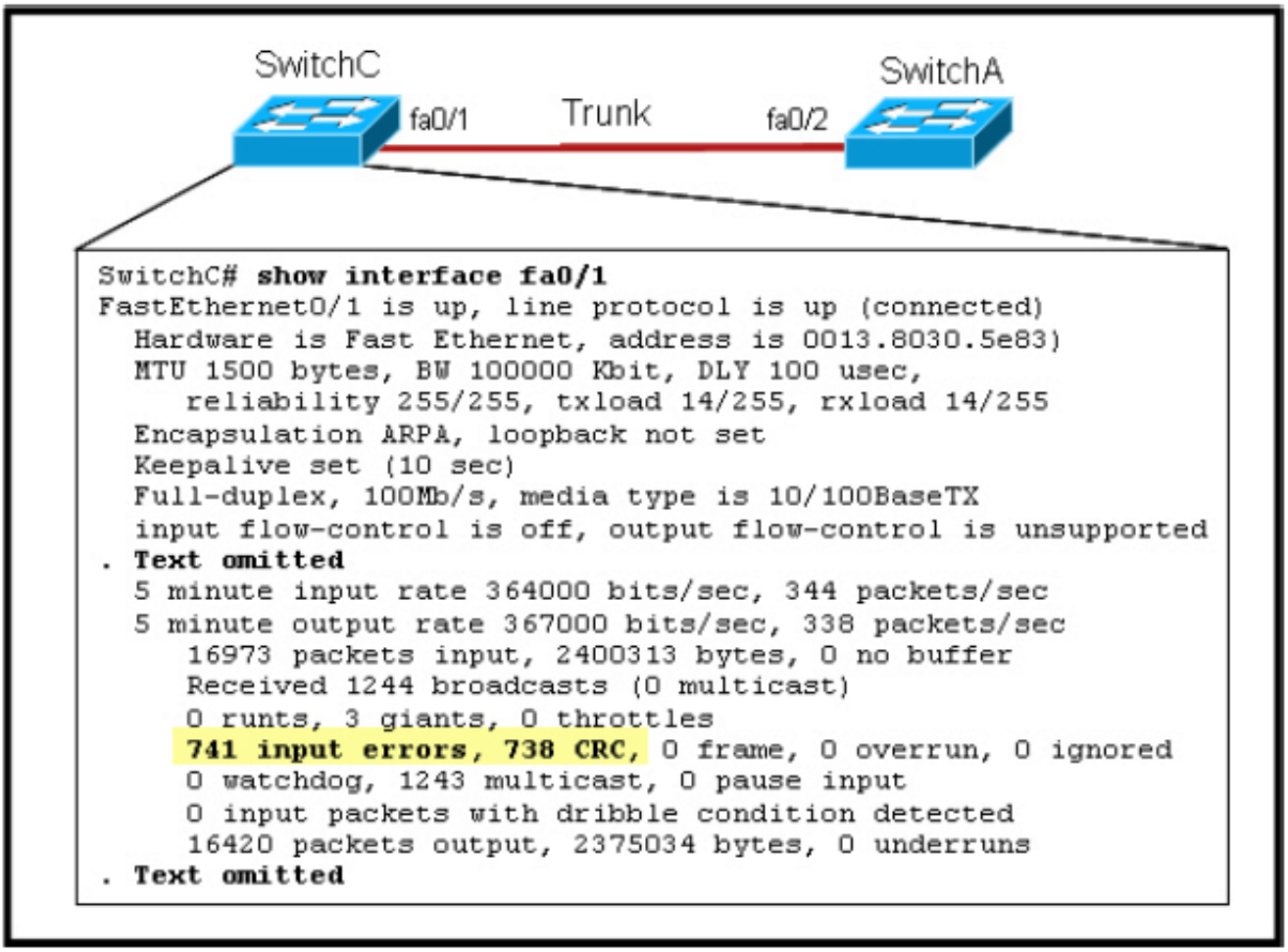
D. 192.168.2.O

E. 192.168.O.O

F. 1O.4.3.O

Answer: ACD

27. 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 duplex mode for SwitchC's fa0/1 port.

C. Check the duplex mode for SwitchA's fa0/2 port.

D. Check the trunk encapsulation mode for SwitchA's fa0/2 port.

Answer: C

Explanation:

Here we can see that this port is configured for full duplex, so the next step would be to check the duplex setting of the port on the other switch. A mismatched trunk encapsulation would not result in input errors and CRC errors.

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

A. Bandwidth

B. Bandwidth and Delay

C. Bandwidth, Delay, and MTU

D. Bandwidth, MTU, Reliability, Delay, and Load

Answer: A

Explanation:

The well-known formula to calculate OSPF cost is Cost = 108 / Bandwidth

29. Which command shows your active Telnet connections?

A. show cdp neigbors

B. show session

C. show users

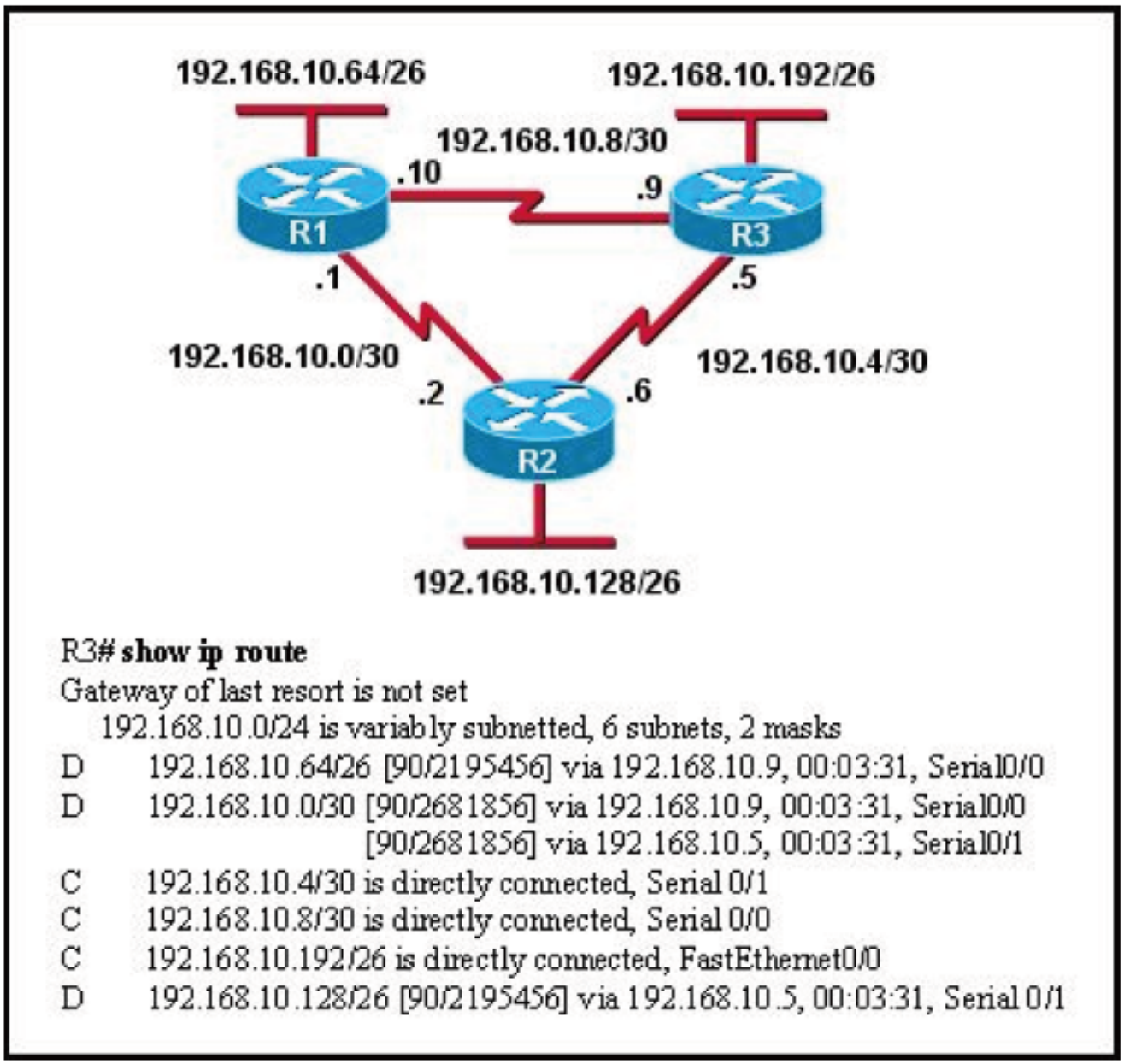
D. show vty logins

Answer: B

Explanation:

The "show users" shows telnet/ssh connections to your router while "show sessions" shows telnet/ssh connections from your router (to other devices). The question asks about "your active Telnet connections", meaning connections from your router so the answer should be A.

30. Refer to the exhibit.



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 R2 to R1.

B. The router will forward packets from R3 to R1 to R2.

C. The router will forward packets from R3 to R2 to R1 AND from R3 to R1.

D. The router will forward packets from R3 to R1.

Answer: C

Explanation:

From the routing table we learn that network 192.168.10.0/30 is learned via 2 equal-cost paths (192.168.10.9

&192.168.10.5) -> traffic to this network will be load-balancing.

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