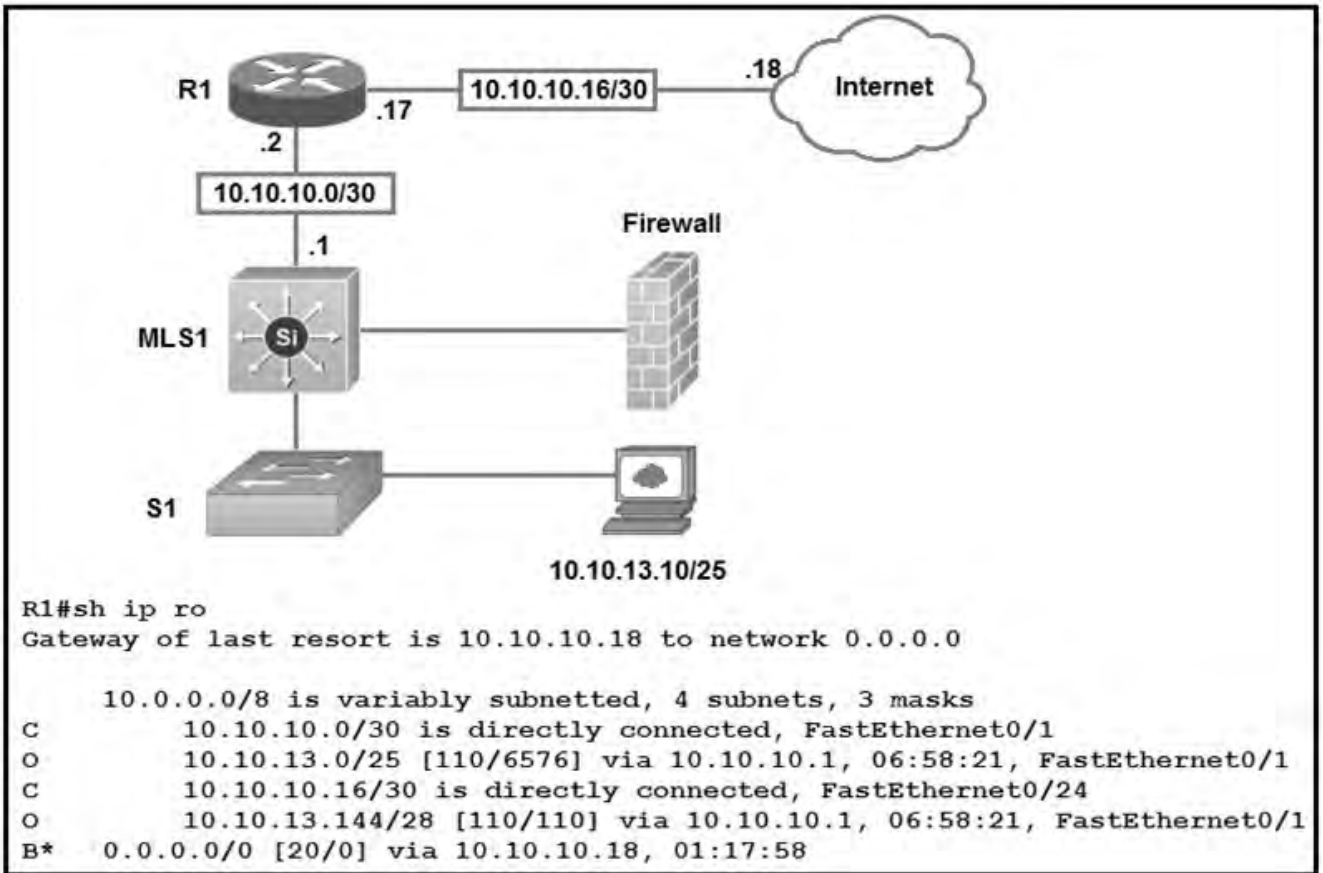


Exam A

QUESTION 1

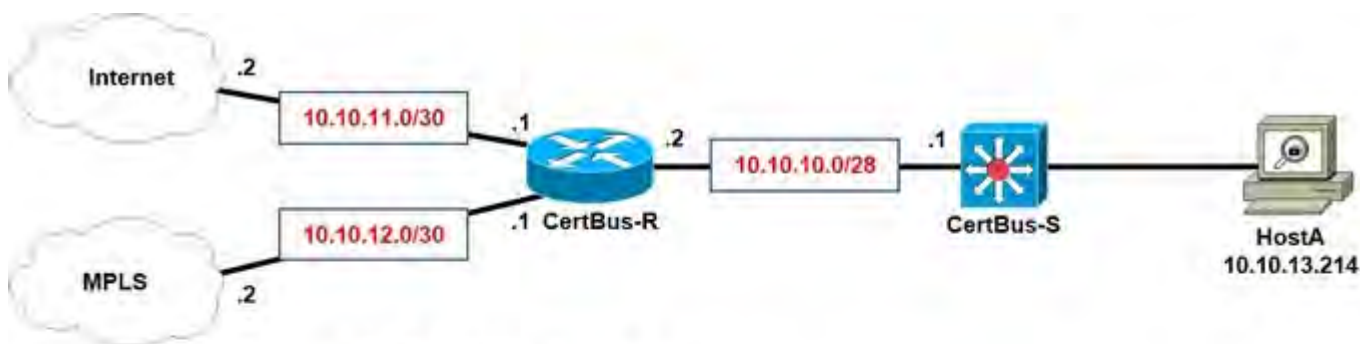


Refer to the exhibit. Which type of route does R1 use to reach host 10.10.13.10/32?

- A. default route
- B. network route
- C. host route
- D. floating static route

Correct Answer: B
Explanation

QUESTION 2



```

CertBus-R#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0

    209.165.200.0/27 is subnetted, 1 subnets
B       209.165.200.224[20/0] via 10.10.12.2, 03:22:14
    209.165.201.0/27 is subnetted, 1 subnets
B       209.165.201.0[20/0] via 10.10.12.2, 02:26:33
    209.165.202.0/27 is subnetted, 1 subnets
B       209.165.202.128[20/0] via 10.10.12.2, 02:26:03
    10.0.0.0/8 is variably subnetted, 8 subnets, 4 masks
C       10.10.10.0/28 is directly connected, GigabitEthernet0/0
C       10.10.11.0/30 is directly connected, FastEthernet0/1
C       10.10.12.0/30 is directly connected, GigabitEthernet0/1
O       10.10.13.0/25 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
O       10.10.13.128/28 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
O       10.10.13.144/28 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
O       10.10.13.160/29 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
O       10.10.13.208/29 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
S*      0.0.0.0 [1/0] via 10.10.11.2

```

Refer to the exhibit. Which prefix does CertBus-R use to Host A?

- A. 10.10.10.0/28
- B. 10.10.13.0/25
- C. 10.10.13.144/28
- D. 10.10.13.208/29

Correct Answer: D

Explanation

Explanation/Reference:

Host A address fall within the address range. However, if more than one route to the same subnet exist (router will use the longest stick match, which match more specific route to the subnet). If there are route 10.10.13.192/26 and 10.10.13.208/29, the router will forward the packet to /29 rather than /28.

QUESTION 3

A frame that enters a switch fails the Frame Check Sequence. Which two interface counters are incremented? (Choose two.)

- A. input errors
- B. frame
- C. giants
- D. CRC
- E. runts

Correct Answer: AD

Explanation

Explanation/Reference:

Whenever the physical transmission has problems, the receiving device might receive a frame whose bits

have changed values. These frames do not pass the error detection logic as implemented in the FCS field in the Ethernet trailer. The receiving device discards the frame and counts it as some kind of input error. Cisco switches list this error as a CRC error. Cyclic redundancy check (CRC) is a term related to how the FCS math detects an error.

The “input errors” includes runts, giants, no buffer, CRC, frame, overrun, and ignored counts.

The output below show the interface counters with the “show interface s0/0/0” command:

```
Router#show interface s0/0/0
Serial0/0/0 is up, line protocol is up
  Hardware is M4T
  Description: Link to R2
  Internet address is 10.1.1.1/30
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  --output omitted--
  5 minute output rate 0 bits/sec, 0 packets/sec
    268 packets input, 24889 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    251 packets output, 23498 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 output buffer failures, 0 output buffers swapped out
    0 carrier transitions      DCD=up DSR=up DTR=up RTS=up CTS=up
```

QUESTION 4

How do TCP and UDP differ in the way that they establish a connection between two endpoints?

- A. TCP uses the three-way handshake, and UDP does not guarantee message delivery.
- B. TCP uses synchronization packets, and UDP uses acknowledgement packets.
- C. UDP provides reliable message transfer, and TCP is a connectionless protocol.
- D. UDP uses SYN, SYN ACK, and FIN bits in the frame header while TCP uses SYN, SYN ACK, and ACK bits.

Correct Answer: A

Explanation

QUESTION 5

Which 802.11 frame type is association response?

- A. management
- B. protected frame
- C. action
- D. control

Correct Answer: A

Explanation

Explanation/Reference:

Reference: https://en.wikipedia.org/wiki/802.11_Frame_Types

QUESTION 6

In which way does a spine-and-leaf architecture allow for scalability in a network when additional access ports are required?

- A. A spine switch and a leaf switch can be added with redundant connections between them.

- B. A spine switch can be added with at least 40 GB uplinks.
- C. A leaf switch can be added with connections to every spine switch.
- D. A leaf switch can be added with a single connection to a core spine switch.

Correct Answer: C

Explanation

Explanation/Reference:

Spine-leaf architecture is typically deployed as two layers: spines (such as an aggregation layer), and leaves (such as an access layer). Spine-leaf topologies provide high-bandwidth, low-latency, nonblocking server-to-server connectivity.

Leaf (aggregation) switches are what provide devices access to the fabric (the network of spine and leaf switches) and are typically deployed at the top of the rack. Generally, devices connect to the leaf switches. Devices can include servers, Layer 4-7 services (firewalls and load balancers), and WAN or Internet routers. Leaf switches do not connect to other leaf switches. In spine-and-leaf architecture, every leaf should connect to every spine in a full mesh.

Spine (aggregation) switches are used to connect to all leaf switches and are typically deployed at the end or middle of the row. Spine switches do not connect to other spine switches.

QUESTION 7

Which statement identifies the functionality of virtual machines?

- A. The hypervisor communicates on Layer 3 without the need for additional resources.
- B. Each hypervisor can support a single virtual machine and a single software switch.
- C. The hypervisor can virtual physical components including CPU, memory, and storage.
- D. Virtualized servers run most efficiently when they are physically connected to a switch that is separate from the hypervisor.

Correct Answer: C

Explanation

QUESTION 8

Which command automatically generates an IPv6 address from a specified IPv6 prefix and MAC address of an interface?

- A. ipv6 address dhcp
- B. ipv6 address 2001:DB8:5:112::/64 eui-64
- C. ipv6 address autoconfig
- D. ipv6 address 2001:DB8:5:112::2/64 link-local

Correct Answer: C

Explanation

Explanation/Reference:

The “ipv6 address autoconfig” command causes the device to perform IPv6 stateless address auto-configuration to discover prefixes on the link and then to add the EUI-64 based addresses to the interface. Addresses are configured depending on the prefixes received in Router Advertisement (RA) messages.

The device will listen for RA messages which are transmitted periodically from the router (DHCP Server).

This RA message allows a host to create a global IPv6 address from:

1. Its interface identifier (EUI-64 address)
2. Link Prefix (obtained via RA)

Note: Global address is the combination of Link Prefix and EUI-64 address

QUESTION 9

When configuring IPv6 on an interface, which two IPv6 multicast groups are joined? (Choose two.)

- A. 2000::/3
- B. 2002::/5
- C. FC00::/7

- D. FF02::1
- E. FF02::2

Correct Answer: DE

Explanation

Explanation/Reference:

When an interface is configured with IPv6 address, it automatically joins the all nodes (FF02::1) and solicited-node (FF02::1:FFxx:xxxx) multicast groups. The all-node group is used to communicate with all interfaces on the local link, and the solicited-nodes multicast group is required for link-layer address resolution. Routers also join a third multicast group, the all-routers group (FF02::2).

Reference:

<https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipv6/configuration/xr-3s/ipv6-xr-36s-book/ipv6-multicast.html>

QUESTION 10

What is the default behavior of a Layer 2 switch when a frame with an unknown destination MAC address is received?

- A. The Layer 2 switch forwards the packet and adds the destination MAC address to its MAC address table.
- B. The Layer 2 switch sends a copy of a packet to CPU for destination MAC address learning.
- C. The Layer 2 switch floods packets to all ports except the receiving port in the given VLAN.
- D. The Layer 2 switch drops the received frame.

Correct Answer: C

Explanation

Explanation/Reference:

If the destination MAC address is not in the CAM table (unknown destination MAC address), the switch sends the frame out all other ports that are in the same VLAN as the received frame. This is called flooding. It does not flood the frame out the same port on which the frame was received.

QUESTION 11

An engineer must configure a /30 subnet between two routes. Which usable IP address and subnet mask combination meets this criteria?

- A. interface e0/0
description to HQ-A370:98968
ip address 10.2.1.3 255.255.255.252
- B. interface e0/0
description to HQ-A370:98968
ip address 192.168.1.1 255.255.255.248
- C. interface e0/0
description to HQ-A370:98968
ip address 172.16.1.4 255.255.255.248
- D. interface e0/0
description to HQ-A370:98968
ip address 209.165.201.2 225.255.255.252

Correct Answer: D

Explanation

QUESTION 12

Which network allows devices to communicate without the need to access the Internet?

- A. 172.9.0.0/16
- B. 172.28.0.0/16

- C. 192.0.0.0/8
- D. 209.165.201.0/24

Correct Answer: B
Explanation

Explanation/Reference:

This question asks about the private ranges of IPv4 addresses. The private ranges of each class of IPv4 are listed below:

1. Class A private IP address ranges from 10.0.0.0 to 10.255.255.255
2. Class B private IP address ranges from 172.16.0.0 to 172.31.255.255
3. Class C private IP address ranges from 192.168.0.0 to 192.168.255.255

Only the network 172.28.0.0/16 belongs to the private IP address (of class B).

QUESTION 13

Refer to exhibit.

```
CertBus-Router(config)#interface GigabitEthernet 1/0/1
CertBus-Router(config-if)#ip address 192.168.16.143 255.255.255.240
Bad mask /28 for address 192.168.16.143
```

Which statement explains the configuration error message that is received?

- A. It belongs to a private IP address range.
- B. The router does not support /28 mask.
- C. It is a network IP address.
- D. It is a broadcast IP address.

Correct Answer: D
Explanation

Explanation/Reference:

QUESTION 14

Which IPv6 address type communication between subnets and cannot route on the Internet?

- A. link-local
- B. unique local
- C. multicast
- D. global unicast

Correct Answer: B
Explanation

Explanation/Reference:

A IPv6 Unique Local Address is an IPv6 address in the block FC00::/7. It is the approximate IPv6 counterpart of the IPv4 private address. It is not routable on the global Internet.

Note: In the past, Site-local addresses (FEC0::/10) are equivalent to private IP addresses in IPv4 but now they are deprecated.

Link-local addresses only used for communications within the local subnet. It is usually created dynamically using a link-local prefix of FE80::/10 and a 64-bit interface identifier (based on 48-bit MAC address).

QUESTION 15

Which IPv6 address block sends packets to a group address rather than a single address?

- A. 2000::/3
- B. FC00::/7
- C. FE80::/10
- D. FF00::/8

Correct Answer: D

Explanation

QUESTION 16

What are two reasons that cause late collisions to increment on an Ethernet interface? (Choose two.)

- A. when Carrier Sense Multiple Access/Collision Detection is used
- B. when one side of the connection is configured for half-duplex
- C. when the sending device waits 15 seconds before sending the frame again
- D. when a collision occurs after the 32nd byte of a frame has been transmitted
- E. when the cable length limits are exceeded

Correct Answer: BE

Explanation

Explanation/Reference:

A late collision is defined as any collision that occurs after the first 512 bits (or 64th byte) of the frame have been transmitted. The usual possible causes are full-duplex/half-duplex mismatch, exceeded Ethernet cable length limits, or defective hardware such as incorrect cabling, non-compliant number of hubs in the network, or a bad NIC.

Late collisions should never occur in a properly designed Ethernet network. They usually occur when Ethernet cables are too long or when there are too many repeaters in the network.

Reference: <https://www.cisco.com/en/US/docs/internetworking/troubleshooting/guide/tr1904.html>

QUESTION 17

What is a benefit of using a Cisco Wireless LAN Controller?

- A. It eliminates the need to configure each access point individually.
- B. Central AP management requires more complex configurations.
- C. Unique SSIDs cannot use the same authentication method.
- D. It supports autonomous and lightweight APs.

Correct Answer: A

Explanation

QUESTION 18

Which action is taken by switch port enabled for PoE power classification override?

- A. If a monitored port exceeds the maximum administrative value for power, the port is shutdown and err-disabled.
- B. When a powered device begins drawing power from a PoE switch port, a syslog message is generated.
- C. As power usage on a PoE switch port is checked, data flow to the connected device is temporarily paused.
- D. If a switch determines that a device is using less than the minimum configured power, it assumes the device has failed and disconnects it.

Correct Answer: A

Explanation

Explanation/Reference:

PoE monitoring and policing compares the power consumption on ports with the administrative maximum value (either a configured maximum value or the port's default value). If the power consumption on a monitored port exceeds the administrative maximum value, the following actions occur:

- A syslog message is issued.
- The monitored port is shut down and error-disabled.
- The allocated power is freed.

Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst6500/ios/12-2SX/configuration/guide/book/power_over_ethernet.pdf

QUESTION 19

Which statement about Link Aggregation when implementing on a Cisco Wireless LAN Controller is true?

- A. The EtherChannel must be configured in "mode active".
- B. When enabled, the WLC bandwidth drops to 500 Mbps.
- C. To pass client traffic, two or more ports must be configured.
- D. One functional physical port is needed to pass client traffic.

Correct Answer: D

Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/wireless/controller/8-2/config-guide/b_cg82/b_cg82_chapter_010101011.html

QUESTION 20

Which two conditions must be met before SSH can operate normally on a Cisco IOS switch? (Choose two.)

- A. IP routing must be enabled on the switch.
- B. A console password must be configured on the switch.
- C. Telnet must be disabled on the switch.
- D. The switch must be running a k9 (crypto) IOS image.
- E. The ip domain-name command must be configured on the switch.

Correct Answer: DE

Explanation

Explanation/Reference:

Reference: <https://www.cisco.com/c/en/us/support/docs/security-vpn/secure-shell-ssh/4145-ssh.html>

QUESTION 21

Refer to the exhibit.


```

CertBus-Atlanta#conf t
Enter configuration commands, one per line. End with CNTL/Z.
CertBus-Atlanta(config)#aaa new-model
CertBus-Atlanta(config)#aaa authentication login default local
CertBus-Atlanta(config)#line vty 0 4
CertBus-Atlanta(config-line)#login authentication default
CertBus-Atlanta(config-line)#exit
CertBus-Atlanta(config)#username ciscoadmin password adminadmin123
CertBus-Atlanta(config)#username ciscoadmin privilege 15
CertBus-Atlanta(config)#enable password cisco123
CertBus-Atlanta(config)#enable secret testing1234
CertBus-Atlanta(config)#end

```

Which password must an engineer use to enter the enable mode?

- A. adminadmin123
- B. cisco123
- C. default
- D. testing1234

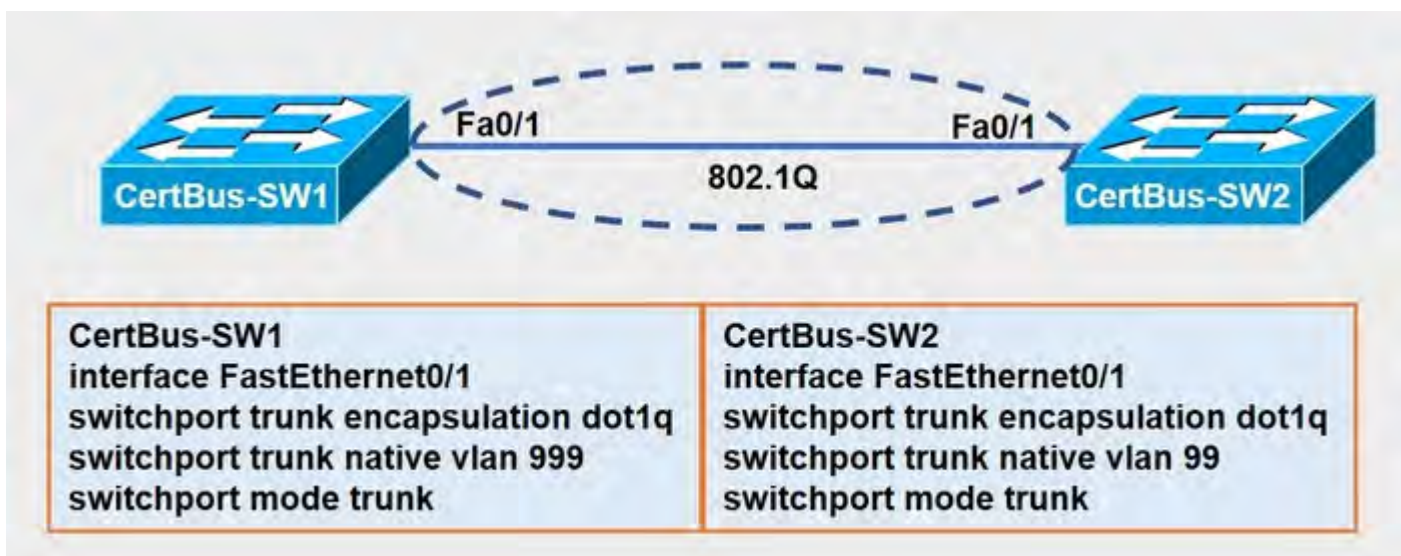
Correct Answer: D
Explanation

Explanation/Reference:

If neither the enable password command nor the enable secret command is configured, and if there is a line password configured for the console, the console line password serves as the enable password for all VTY sessions -> The "enable secret" will be used first if available, then "enable password" and line password.

QUESTION 22

Refer to Exhibit.



Which action do the switches take on the trunk link?

- A. The trunk does not form, and the ports go into an err-disabled status.

- B. The trunk forms, but the mismatched native VLANs are merged into a single broadcast domain.
- C. The trunk forms, but VLAN 99 and VLAN 999 are in a shutdown state.
- D. The trunk does not form, but VLAN 99 and VLAN 999 are allowed to traverse the link.

Correct Answer: B

Explanation

Explanation/Reference:

The trunk still forms with mismatched native VLANs and the traffic can actually flow between mismatched switches. But it is absolutely necessary that the native VLANs on both ends of a trunk link match; otherwise a native VLAN mismatch occurs, causing the two VLANs to effectively merge. For example with the above configuration, SW1 would send untagged frames for VLAN 999. SW2 receives them but would think they are for VLAN 99 so we can say these two VLANs are merged.

QUESTION 23

What is the primary effect of the spanning-tree portfast command?

- A. It immediately enables the port in the listening state.
- B. It immediately puts the port into the forwarding state when the switch is reloaded.
- C. It enabled BPDU messages.
- D. It minimizes spanning-tree convergence time.

Correct Answer: D

Explanation

Explanation/Reference:

Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst3560/software/release/12-2_55_se/configuration/guide/3560_scg/swstpopt.html

QUESTION 24

Which result occurs when PortFast is enabled on an interface that is connected to another switch?

- A. Root port choice and spanning tree recalculation are accelerated when a switch link goes down.
- B. After spanning tree converges, PortFast shuts down any port that receives BPDUs.
- C. VTP is allowed to propagate VLAN configuration information from switch to switch automatically.
- D. Spanning tree may fail to detect a switching loop in the network that causes broadcast storms.

Correct Answer: D

Explanation

Explanation/Reference:

Enabling the PortFast feature causes a switch or a trunk port to enter the STP forwarding-state immediately or upon a linkup event, thus bypassing the listening and learning states.

Note: To enable portfast on a trunk port you need the trunk keyword "spanning-tree portfast trunk"

QUESTION 25

Which QoS Profile is selected in the GUI when configuring a voice over WLAN deployment?

- A. Platinum
- B. Bronze
- C. Gold
- D. Silver

Correct Answer: A

Explanation

Explanation/Reference:

Cisco Unified Wireless Network solution WLANs support four levels of QoS: Platinum/Voice, Gold/Video,

Silver/Best Effort (default), and Bronze/Background.

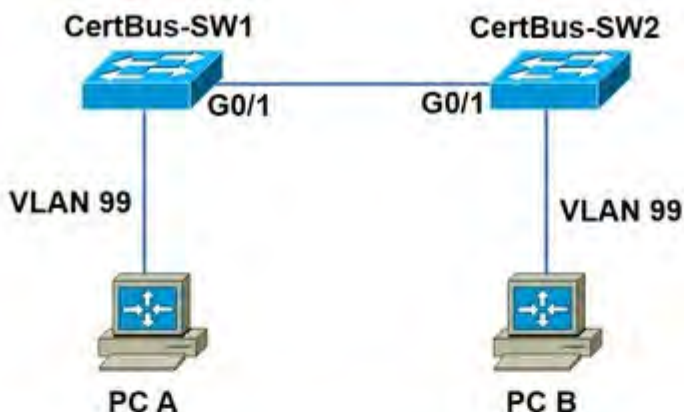
Reference:

<https://www.cisco.com/c/en/us/support/docs/wireless-mobility/wireless-lan-wlan/81831-qos-wlc-lap.html>

https://www.cisco.com/c/en/us/td/docs/wireless/controller/7-4/configuration/guides/consolidated/b_cg74_CONSOLIDATED/b_cg74_CONSOLIDATED_chapter_01010111.html

QUESTION 26

Refer to the exhibit.



```
CertBus-SW1:
Name: Gi0/1
Switchport: Enabled
Administrative Mode: Trunk
Operational Mode: Trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: Off
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Administrative Native VLAN tagging: enabled
Voice VLAN: none
[output omitted]
Trunking VLANs Enabled: 50-100
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: All
```

```
CertBus-SW2:
Name: Gi0/1
Switchport: Enabled
Administrative Mode: Trunk
Operational Mode: Trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: Off
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 99 (VLAN0099)
Administrative Native VLAN tagging: enabled
Voice VLAN: none
[output omitted]
Trunking VLANs Enabled: 50-100
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: All
```

After the switch configuration, the ping test fails between PC A and PC B. Based on the output for switch 1, which error must be corrected?

- A. The PCs are in the incorrect VLAN.
- B. All VLANs are not enabled on the trunk.
- C. Access mode is configured on the switch ports.
- D. There is a native VLAN mismatch.

Correct Answer: D

Explanation

Explanation/Reference:

QUESTION 27

Which unified access point mode continues to serve wireless clients after losing connectivity to the Cisco