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Number: 200-301
Passing Score: 800
Time Limit: 120 min
File Version: 4.0



200-301

Cisco Certified Network Associate

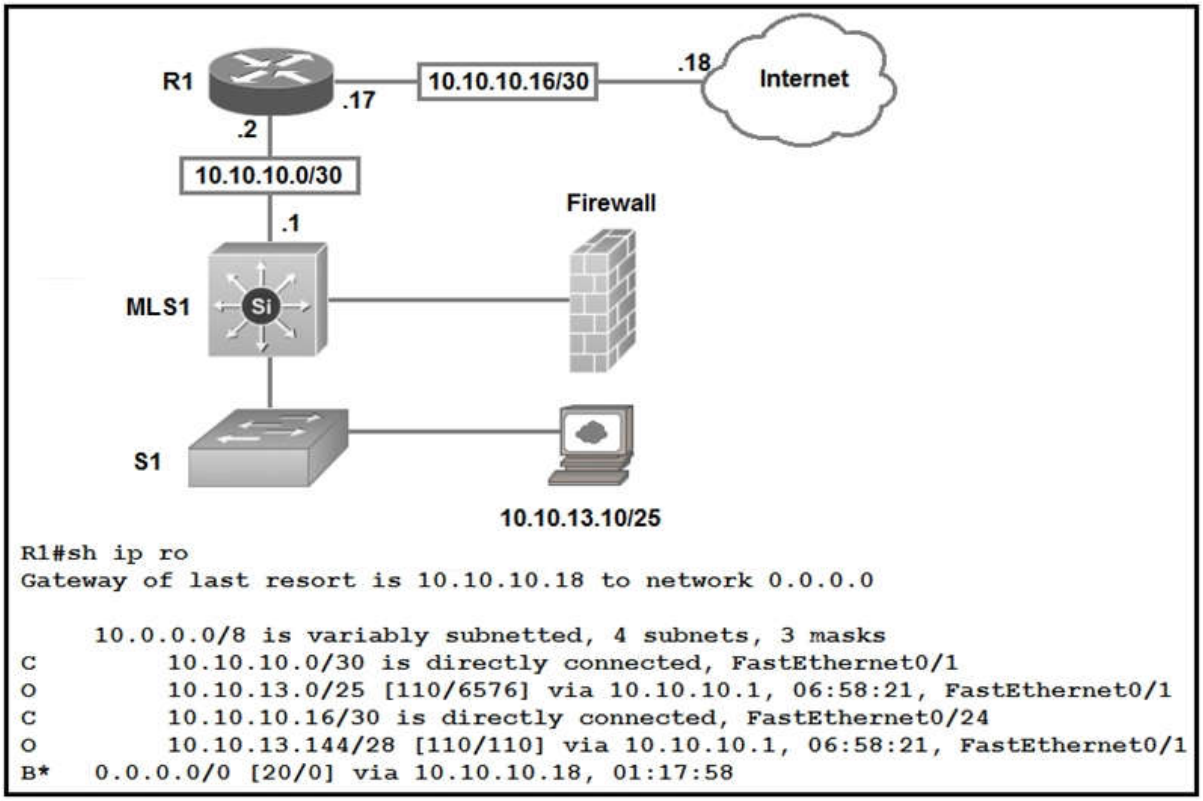
Version 4.0

Sections

1. Network Fundamentals
2. Network Access
3. IP Connectivity
4. IP Services
5. Security Fundamentals
6. Automation and Programmability

Exam A

QUESTION 1



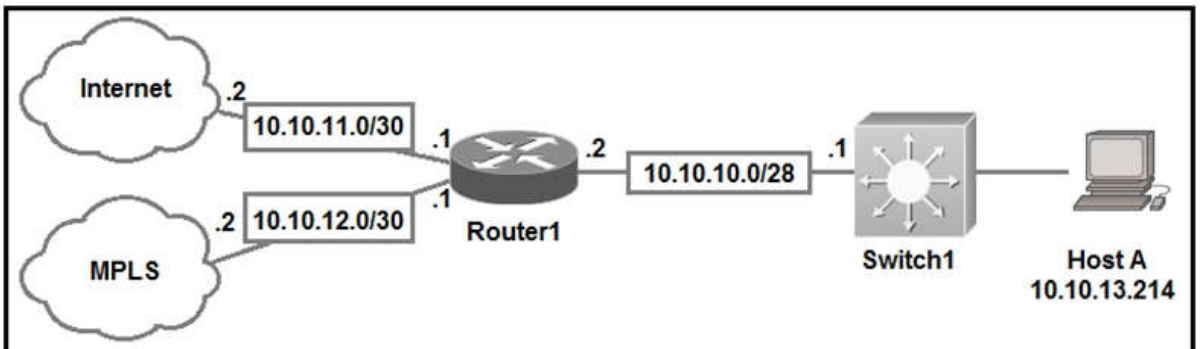
Refer to the exhibit. Which type of route does R1 use to reach host 10.10.13.10/32?

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

Correct Answer: B
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 2




```
Router1#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, FastEthernet2/0
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*    0.0.0.0/0 [1/0] via 10.10.11.2
```

Refer to the exhibit. Which prefix does Router1 use for traffic 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
Section: Network Fundamentals
Explanation

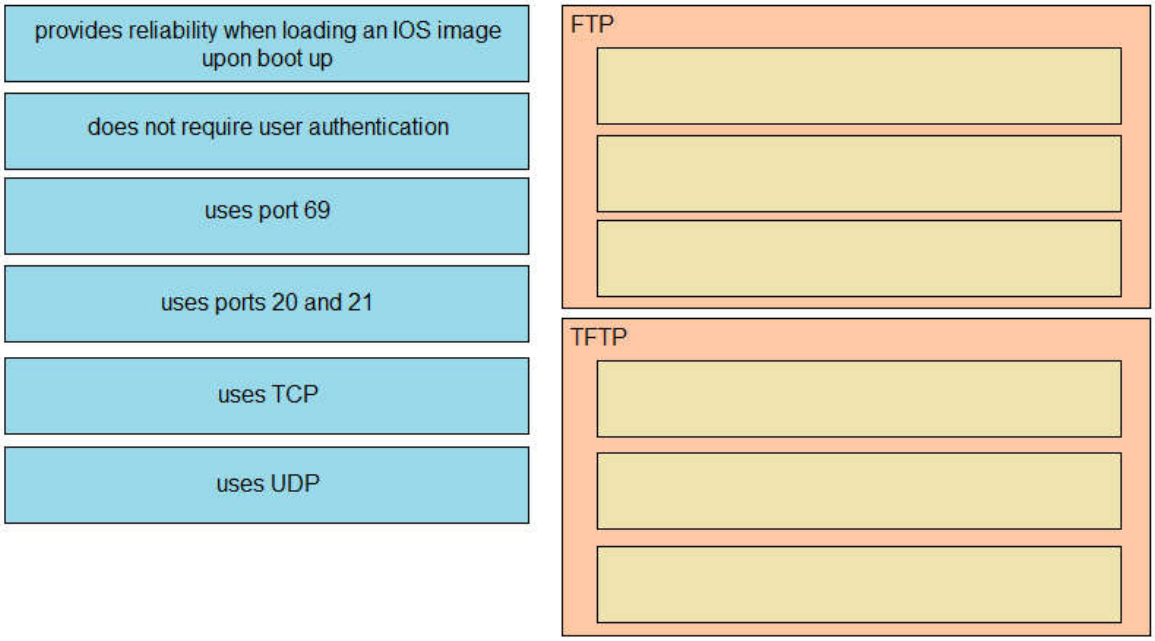
Explanation/Reference:

QUESTION 3
DRAG DROP

Drag and drop the descriptions of file-transfer protocols from the left onto the correct protocols on the right.

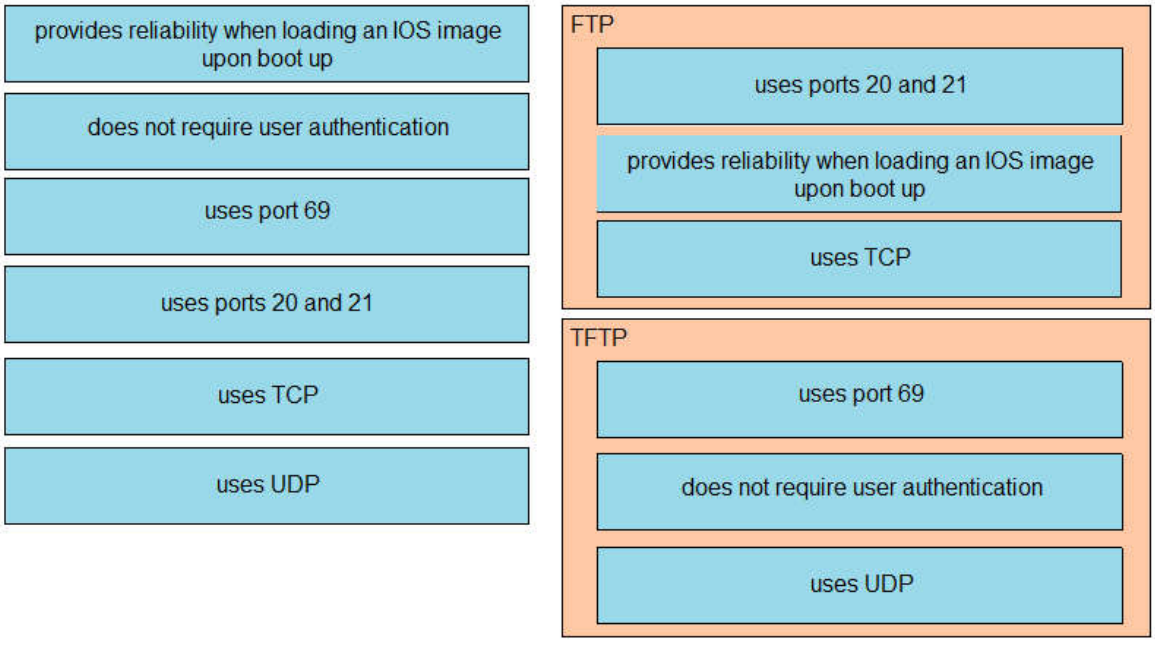
Select and Place:

Answer Area



Correct Answer:

Answer Area



Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 4
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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 5
DRAG DROP

Drag and drop the IPv4 network subnets from the left onto the correct usable host ranges on the right.

Select and Place:

Answer Area

172.28.228.144/18	172.28.228.1 - 172.28.229.254
172.28.228.144/21	172.28.224.1 - 172.28.231.254
172.28.228.144/23	172.28.228.129 - 172.28.228.254
172.28.228.144/25	172.28.228.145 - 172.28.228.150
172.28.228.144/29	172.28.192.1 - 172.28.255.254

Correct Answer:

Answer Area

172.28.228.144/18	172.28.228.144/23
172.28.228.144/21	172.28.228.144/21
172.28.228.144/23	172.28.228.144/25
172.28.228.144/25	172.28.228.144/29
172.28.228.144/29	172.28.228.144/18

Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 6
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 acknowledgment 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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 7
Which 802.11 frame type is association response?

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

Correct Answer: A
Section: Network Fundamentals
Explanation

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

QUESTION 8
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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 9
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 virtualize 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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 10
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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 11
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
Section: Network Fundamentals
Explanation

Explanation/Reference:
Reference:
https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipv6/configuration/xe-3s/ipv6-xe-36s-book/ip6-multicast.html

QUESTION 12
DRAG DROP

```
[root@HostTest ~]# ip route
default via 192.168.1.193 dev eth1  proto static
192.168.1.0/26 dev eth1  proto kernel  scope link src 192.168.1.200  metric 1

[root@HostTime ~]# ip addr show eth1
eth1:  mtu 1500 qdisc pfifo_fast qlen 1000
   link/ether 00:0C:22:83:79:A3 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.200/26 brd 192.168.1.255 scope global eth1
   inet6 fe80::20c:29ff:fe89:79b3/64 scope link
   valid_lft forever preferred_lft forever
```

Refer to the exhibit. Drag and drop the networking parameters from the left onto the correct values on the right.

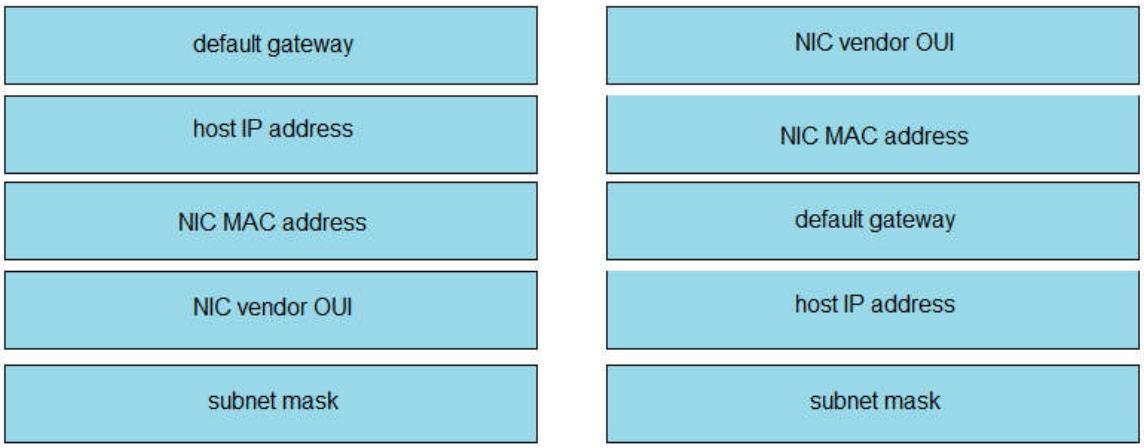
Select and Place:

Answer Area

default gateway	00:0C:22
host IP address	00:0C:22:83:79:A3
NIC MAC address	192.168.1.193
NIC vendor OUI	192.168.1.200
subnet mask	255.255.255.192

Correct Answer:

Answer Area



Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 13
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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 14
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 XX-AXXX:XXXXX
ip address 10.2.1.3 255.255.255.252
B. interface e0/0
description to XX-AXXX:XXXXX
ip address 192.168.1.1 255.255.255.248
C. interface e0/0
description to XX-AXXX:XXXXX
ip address 172.16.1.4 255.255.255.248
D. interface e0/0

description to XX-AXXX:XXXXX
ip address 209.165.201.2 225.255.255.252

Correct Answer: D
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 15
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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 16

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

Refer to the exhibit. 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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 17
Which IPv6 address type provides communication between subnets and cannot route on the Internet?

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

Correct Answer: B
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 18
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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 19
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: AE
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 20
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
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 21
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
Section: Network Fundamentals
Explanation

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

QUESTION 22
What occurs to frames during the process of frame flooding?

A. Frames are sent to all ports, including those that are assigned to other VLANs.
B. Frames are sent to every port on the switch that has a matching entry in MAC address table.
C. Frames are sent to every port on the switch in the same VLAN except from the originating port.
D. Frames are sent to every port on the switch in the same VLAN.

Correct Answer: C
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 23
Which function does the range of private IPv4 addresses perform?

A. allows multiple companies to each use the same addresses without conflicts
B. provides a direct connection for hosts from outside of the enterprise network
C. ensures that NAT is not required to reach the Internet with private range addressing
D. enables secure communications to the Internet for all external hosts

Correct Answer: A
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 24
Which action must be taken to assign a global unicast IPv6 address on an interface that is derived from the MAC address of that interface?

A. explicitly assign a link-local address
B. disable the EUI-64 bit process
C. enable SLAAC on an interface
D. configure a stateful DHCPv6 server on the network

Correct Answer: C
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 25
Several new coverage cells are required to improve the Wi-Fi network of an organization. Which two standard designs are recommended? (Choose two.)

A. 5GHz provides increased network capacity with up to 23 nonoverlapping channels.
B. 5GHz channel selection requires an autonomous access point.
C. Cells that overlap one another are configured to use nonoverlapping channels.
D. Adjacent cells with overlapping channels use a repeater access point.
E. For maximum throughput, the WLC is configured to dynamically set adjacent access points to the channel.

Correct Answer: CE
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 26
How do TCP and UDP differ in the way they provide reliability for delivery of packets?

A. TCP does not guarantee delivery or error checking to ensure that there is no corruption of data, UDP provides message acknowledgement and retransmits data if lost.
B. TCP provides flow control to avoid overwhelming a receiver by sending too many packets at once, UDP sends packets to the receiver in a continuous stream without checking.
C. TCP is a connectionless protocol that does not provide reliable delivery of data; UDP is a connection-oriented protocol that uses sequencing to provide reliable delivery.
D. TCP uses windowing to deliver packets reliably; UDP provides reliable message transfer between hosts by establishing a three-way handshake.

Correct Answer: B
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 27
What are two differences between optical-fiber cabling and copper cabling? (Choose two.)

A. A BNC connector is used for fiber connections
B. The glass core component is encased in a cladding
C. The data can pass through the cladding
D. Light is transmitted through the core of the fiber
E. Fiber connects to physical interfaces using RJ-45 connections

Correct Answer: BD
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 28
How does CAPWAP communicate between an access point in local mode and a WLC?

A. The access point must not be connected to the wired network, as it would create a loop
B. The access point must be connected to the same switch as the WLC
C. The access point must directly connect to the WLC using a copper cable
D. The access point has the ability to link to any switch in the network, assuming connectivity to the WLC

Correct Answer: D
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 29
Which IPv6 address block forwards packets to a multicast address rather than a unicast address?

A. 2000::/3
B. FC00::/7
C. FE80::/10
D. FF00::/12

Correct Answer: D
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 30
What is the difference regarding reliability and communication type between TCP and UDP?

A. TCP is reliable and is a connectionless protocol; UDP is not reliable and is a connection-oriented protocol.
B. TCP is not reliable and is a connectionless protocol; UDP is reliable and is a connection-oriented protocol.
C. TCP is not reliable and is a connection-oriented protocol; UDP is reliable and is a connectionless protocol.
D. TCP is reliable and is a connection-oriented protocol; UDP is not reliable and is a connectionless protocol.

Correct Answer: D
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 31
What are two descriptions of three-tier network topologies? (Choose two.)

A. The distribution layer runs Layer 2 and Layer 3 technologies
B. The network core is designed to maintain continuous connectivity when devices fail

C. The access layer manages routing between devices in different domains
D. The core layer maintains wired connections for each host
E. The core and distribution layers perform the same functions

Correct Answer: AB
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 32
Which type of ipv6 address is publicly routable in the same way as ipv4 public addresses?

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

Correct Answer: D
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 33
What is the expected outcome when an EUI-64 address is generated?

A. The interface ID is configured as a random 64-bit value
B. The characters FE80 are inserted at the beginning of the MAC address of the interface
C. The seventh bit of the original MAC address of the interface is inverted
D. The MAC address of the interface is used as the interface ID without modification

Correct Answer: C
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 34
A corporate office uses four floors in a building.
- Floor 1 has 24 users.
- Floor 2 has 29 users.
- Floor 3 has 28 users.
- Floor 4 has 22 users.

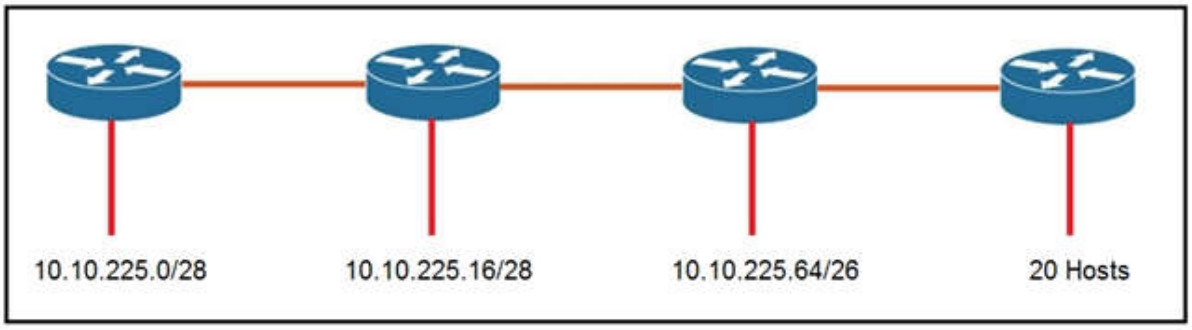
Which subnet summarizes and gives the most efficient distribution of IP addresses for the router configuration?

A. 192.168.0.0/24 as summary and 192.168.0.0/28 for each floor
B. 192.168.0.0/23 as summary and 192.168.0.0/25 for each floor
C. 192.168.0.0/25 as summary and 192.168.0.0/27 for each floor
D. 192.168.0.0/26 as summary and 192.168.0.0/29 for each floor

Correct Answer: C
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 35



Refer to the exhibit. An engineer must add a subnet for a new office that will add 20 users to the network. Which IPv4 network and subnet mask combination does the engineer assign to minimize wasting addresses?

A. 10.10.225.48 255.255.255.240
B. 10.10.225.32 255.255.255.240
C. 10.10.225.48 255.255.255.224
D. 10.10.225.32 255.255.255.224

Correct Answer: D
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 36
What is a characteristic of spine-and-leaf architecture?

A. Each link between leaf switches allows for higher bandwidth.
B. It provides greater predictability on STP blocked ports.
C. It provides variable latency.
D. Each device is separated by the same number of hops.

Correct Answer: D
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 37
An office has 8 floors with approximately 30-40 users per floor. What command must be configured on the router Switched Virtual Interface to use address space efficiently?

A. **ip address 192.168.0.0 255.255.0.0**

B. **ip address 192.168.0.0 255.255.254.0**
C. **ip address 192.168.0.0 255.255.255.128**
D. **ip address 192.168.0.0 255.255.255.224**

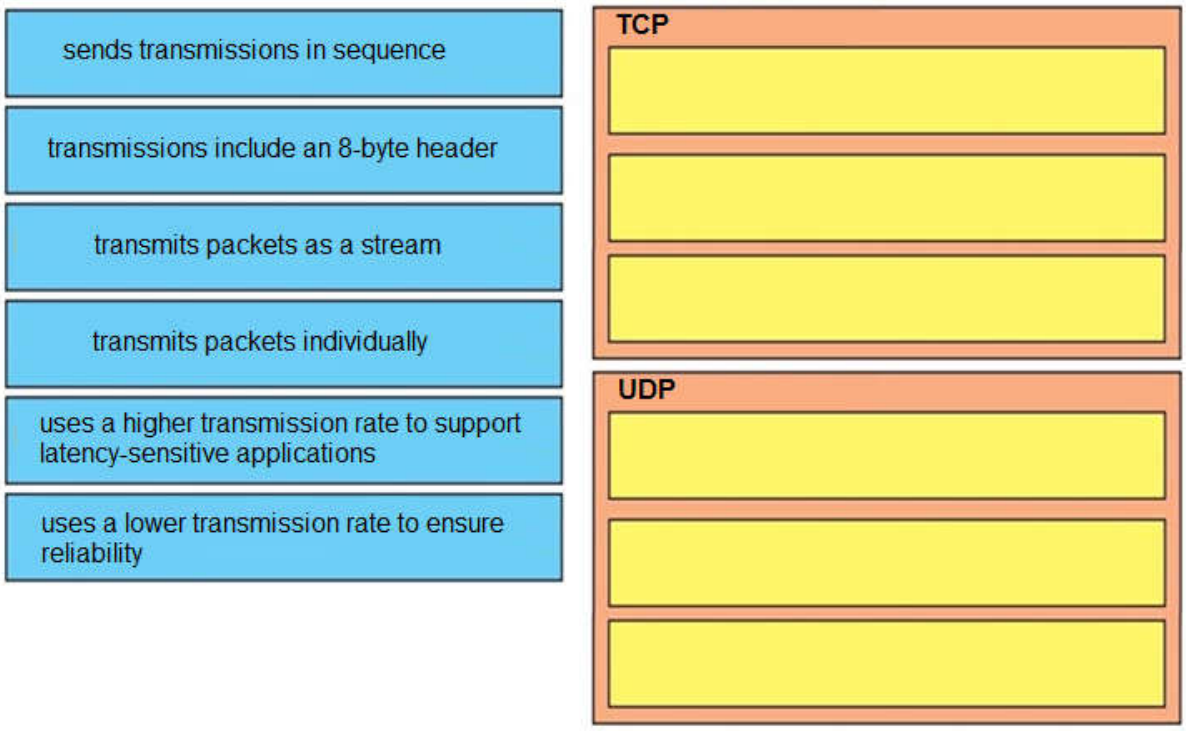
Correct Answer: C
Section: Network Fundamentals
Explanation

Explanation/Reference:

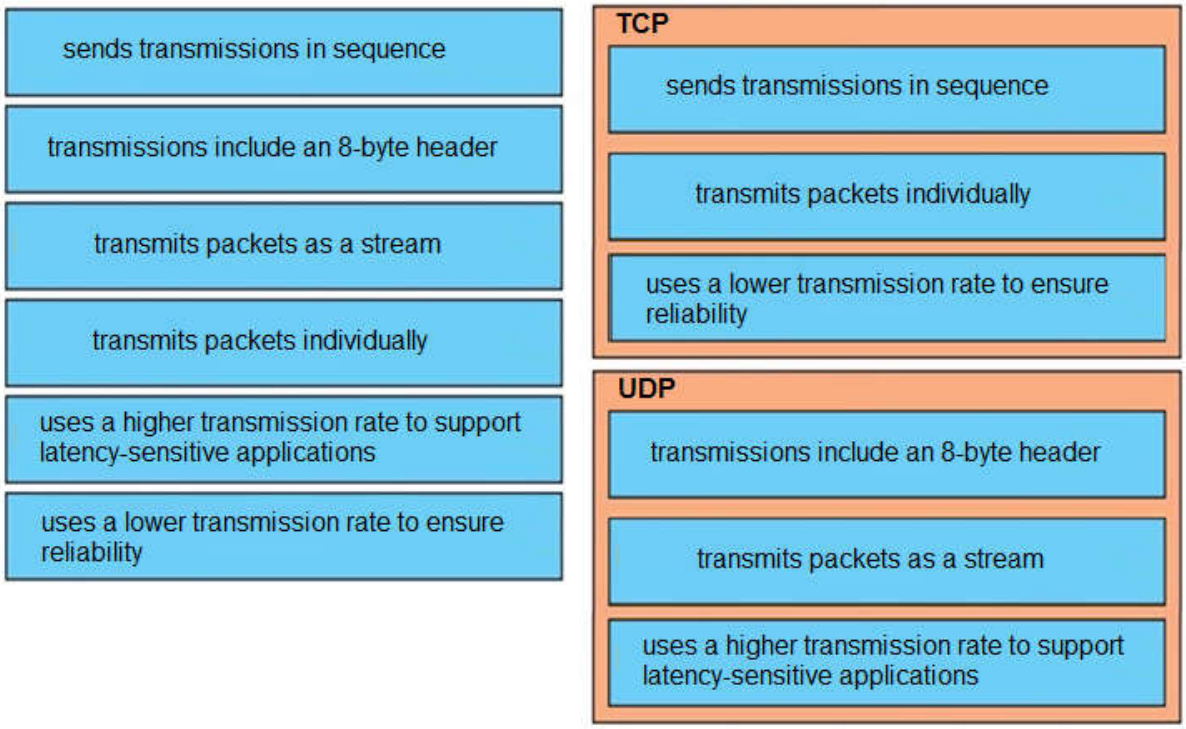
QUESTION 38
DRAG DROP

Drag the descriptions of IP protocol transmissions from the left onto the IP traffic types on the right.

Select and Place:



Correct Answer:



Section: Network Fundamentals
Explanation

Explanation/Reference:

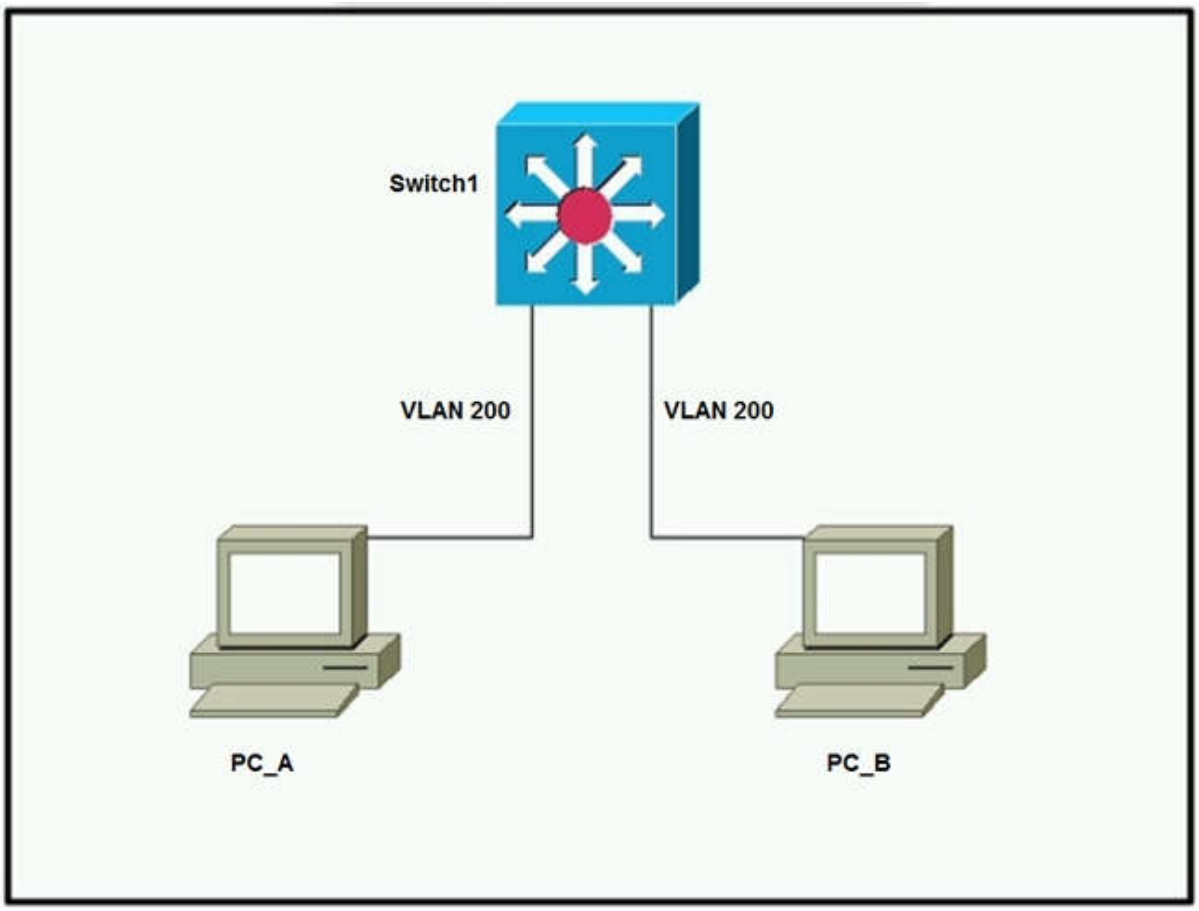
QUESTION 39
A device detects two stations transmitting frames at the same time. This condition occurs after the first 64 bytes of the frame is received. Which interface counter increments?

A. runt
B. collision
C. late collision
D. CRC

Correct Answer: C
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 40



Refer to the exhibit. Which outcome is expected when PC_A sends data to PC_B?

A. The source MAC address is changed.
B. The destination MAC address is replaced with ffff.ffff.ffff.
C. The source and destination MAC addresses remain the same.
D. The switch rewrites the source and destination MAC addresses with its own.

Correct Answer: B
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 41
Using direct sequence spread spectrum, which three 2.4-GHz channels are used to limit collisions?

A. 5, 6, 7
B. 1, 2, 3
C. 1, 6, 11
D. 1, 5, 10

Correct Answer: C
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 42
How do TCP and UDP differ in the way they guarantee packet delivery?

A. TCP uses retransmissions, acknowledgment, and parity checks, and UDP uses cyclic redundancy checks only
B. TCP uses two-dimensional parity checks, checksums, and cyclic redundancy checks, and UDP uses retransmissions only
C. TCP uses checksum, acknowledgements, and retransmissions, and UDP uses checksums only
D. TCP uses checksum, parity checks, and retransmissions, and UDP uses acknowledgements only

Correct Answer: C
Section: Network Fundamentals
Explanation

Explanation/Reference:

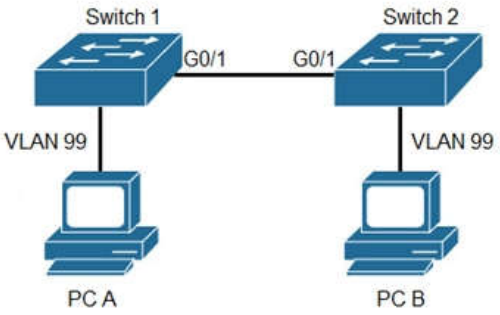
QUESTION 43
A wireless administrator has configured a WLAN; however, the clients need access to a less congested 5-GHz network for their voice quality. What action must be taken to meet the requirement?

A. enable Band Select
B. enable DTIM
C. enable RX-SOP
D. enable AAA override

Correct Answer: A
Section: Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 44



Switch 1:

```
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
```

Switch 2:

```
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
```

Refer to the exhibit. 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
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 45
DRAG DROP

Drag and drop the WLAN components from the left onto the correct descriptions on the right.

Select and Place:

Answer Area

access point	device that manages access points
virtual interface	device that provides Wi-Fi devices with a connection to a wired network
dynamic interface	used for out of band management of a WLC
service port	used to support mobility management of the WLC
wireless LAN controller	applied to the WLAN for wireless client communication

Correct Answer:

Answer Area

access point	wireless LAN controller
virtual interface	access point
dynamic interface	service port
service port	virtual interface
wireless LAN controller	dynamic interface

Section: Network Access
Explanation

Explanation/Reference:

QUESTION 46
Which unified access point mode continues to serve wireless clients after losing connectivity to the Cisco Wireless LAN Controller?

A. local
B. mesh
C. flexconnect
D. sniffer

Correct Answer: C
Section: Network Access

Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/td/docs/wireless/controller/8-5/config-guide/b_cg85/flexconnect.html

QUESTION 47

```
Router#
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S -Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
                  D - Remote, C - CVTA, M - Two-port Mac Relay

Device ID      Local Interface  Holdtime  Capability  Platform  Port ID
10.1.1.2       Gig 37/3         176         R I       CPT 600   Gig 36/41
10.1.1.2       Gig 37/1         174         R I       CPT 600   Gig 36/43
10.1.1.2       Gig 36/41        134         R I       CPT 600   Gig 37/3
10.1.1.2       Gig 36/43        134         R I       CPT 600   Gig 37/1
10.1.1.2       Ten 3/2          132         R I       CPT 600   Ten 4/2
10.1.1.2       Ten 4/2          174         R I       CPT 600   Ten 3/2
```

Refer to the exhibit. Which command provides this output?

A. **show ip route**
B. **show cdp neighbor**
C. **show ip interface**
D. **show interface**

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 48
Which mode must be used to configure EtherChannel between two switches without using a negotiation protocol?

A. active
B. on
C. auto
D. desirable

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 49
Which mode allows access points to be managed by Cisco Wireless LAN Controllers?

A. bridge
B. lightweight
C. mobility express
D. autonomous

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 50
Which two values or settings must be entered when configuring a new WLAN in the Cisco Wireless LAN Controller GUI? (Choose two.)

A. QoS settings
B. IP address of one or more access points
C. SSID
D. profile name
E. management interface settings

Correct Answer: CD
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 51
Which command is used to specify the delay time in seconds for LLDP to initialize on any interface?

A. **lldp timer**
B. **lldp tlv-select**
C. **lldp reinit**
D. **lldp holdtime**

Correct Answer: C
Section: Network Access
Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst2960/software/release/12-2_37_ey/configuration/guide/scg/swlldp.pdf

QUESTION 52

```
SW2
vtp domain cisco
vtp mode transparent
vtp password ciscotest
interface fastethernet0/1
   description connection to sw1
   switchport mode trunk
   switchport trunk encapsulation dot1q
```

Refer to the exhibit. How does SW2 interact with other switches in this VTP domain?

A. It transmits and processes VTP updates from any VTP clients on the network on its trunk ports.
B. It processes VTP updates from any VTP clients on the network on its access ports.
C. It receives updates from all VTP servers and forwards all locally configured VLANs out all trunk ports.
D. It forwards only the VTP advertisements that it receives on its trunk ports.

Correct Answer: D
Section: Network Access
Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/support/docs/lan-switching/vtp/10558-21.html

QUESTION 53

```
SW1#sh lacp neighbor
Flags:  S - Device is requesting Slow LACPDUs
        F - Device is requesting Fast LACPDUs
        A - Device is in Active mode       P - Device is in Passive mode

Channel group 35 neighbors

Partner's information:

              LACP port                        Admin  Oper   Port    Port
Port    Flags Priority   Dev ID          Age   key    Key    Number  State
Et1/0   SP    32768      aabb.cc80.7000   8s   0x0    0x23   0x101   0x3C
Et1/1   SP    32768      aabb.cc80.7000   8s   0x0    0x23   0x102   0x3C
```

Refer to the exhibit. Based on the LACP neighbor status, in which mode is the SW1 port channel configured?

A. mode on
B. active
C. passive
D. auto

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 54
Two switches are connected and using Cisco Dynamic Trunking Protocol. SW1 is set to Dynamic Auto and SW2 is set to Dynamic Desirable. What is the result of this configuration?

A. The link becomes an access port.
B. The link is in an error disabled state.
C. The link is in a down state.
D. The link becomes a trunk port.

Correct Answer: D
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 55
A Cisco IP phone receives untagged data traffic from an attached PC. Which action is taken by the phone?

A. It drops the traffic.
B. It allows the traffic to pass through unchanged.
C. It tags the traffic with the native VLAN.
D. It tags the traffic with the default VLAN.

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst2960x/software/15-0_2_EX/vlan/configuration_guide/b_vlan_152ex_2960-x_cg/b_vlan_152ex_2960-x_cg_chapter_0110.pdf

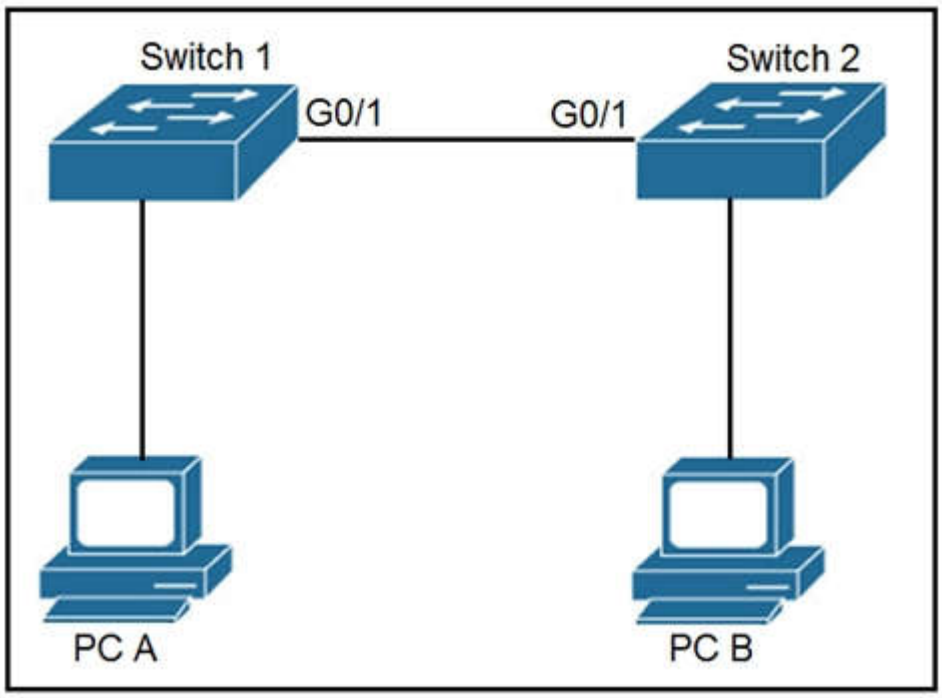
QUESTION 56
Which design element is a best practice when deploying an 802.11b wireless infrastructure?

A. allocating nonoverlapping channels to access points that are in close physical proximity to one another
B. disabling TCP so that access points can negotiate signal levels with their attached wireless devices
C. configuring access points to provide clients with a maximum of 5 Mbps
D. setting the maximum data rate to 54 Mbps on the Cisco Wireless LAN Controller

Correct Answer: A
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 57
Refer to the exhibit. The network administrator wants VLAN 67 traffic to be untagged between Switch 1 and Switch 2, while all other VLANs are to remain tagged. Which command accomplishes this task?



A. **switchport access vlan 67**
B. **switchport trunk allowed vlan 67**
C. **switchport private-vlan association host 67**
D. **switchport trunk native vlan 67**

Correct Answer: D
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 58
Which two command sequences must be configured on a switch to establish a Layer 3 EtherChannel with an open-standard protocol? (Choose two.)

A. **interface GigabitEthernet0/0/1**
channel-group 10 mode auto
B. **interface GigabitEthernet0/0/1**
channel-group 10 mode on
C. **interface port-channel 10**
no switchport
ip address 172.16.0.1 255.255.255.0
D. **interface GigabitEthernet0/0/1**
channel-group 10 mode active
E. **interface port-channel 10**
switchport
switchport mode trunk

Correct Answer: DE
Section: Network Access

Explanation

Explanation/Reference:

QUESTION 59
Refer to the exhibit. Which two commands were used to create port channel 10? (Choose two.)

```
Switch#show etherchannel summary
 [output omitted]

Group        Port-channel        Protocol        Ports
------------+-------------------+---------------+-------------------------------
10           Po10(SU)            LACP            Gi0/0(P)    Gi0/1(P)
20           Po20(SU)            LACP            Gi0/2(P)    Gi0/3(P)
```

A. **int range g0/0-1**
channel-group 10 mode active
B. **int range g0/0-1**
channel-group 10 mode desirable
C. **int range g0/0-1**
channel-group 10 mode passive
D. **int range g0/0-1**
channel-group 10 mode auto
E. **int range g0/0-1**
channel-group 10 mode on

Correct Answer: AC
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 60
Refer to the exhibit. An administrator is tasked with configuring a voice VLAN. What is the expected outcome when a Cisco phone is connected to the GigabitEthernet 3/1/4 port on a switch?

```
interface GigabitEthernet3/1/4
  switchport voice vlan 50
!
```

A. The phone and a workstation that is connected to the phone do not have VLAN connectivity.
B. The phone sends and receives data in VLAN 50, but a workstation connected to the phone sends and receives data in VLAN 1.
C. The phone sends and receives data in VLAN 50, but a workstation connected to the phone has no VLAN connected.
D. The phone and a workstation that is connected to the phone send and receive data in VLAN 50.

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 61
Refer to the exhibit. Which action is expected from SW1 when the untagged frame is received on the GigabitEthernet0/1 interface?

```
SW1#show run int gig 0/1
interface GigabitEthernet0/1
  switchport access vlan 11
  switchport trunk allowed vlan 1-10
  switchport trunk encapsulation dot1q
  switchport trunk native vlan 5
  switchport mode trunk
  speed 1000
  duplex full
```

A. The frame is processed in VLAN 1
B. The frame is processed in VLAN 11
C. The frame is processed in VLAN 5
D. The frame is dropped

Correct Answer: C
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 62
Refer to the exhibit. What two conclusions should be made about this configuration? (Choose two.)

```
SW1#show spanning-tree vlan 30

VLAN0030
Spanning tree enabled protocol rstp
Root ID     Priority        32798
            Address         0025.63e9.c800
            Cost            19
            Port            1 (FastEthernet 2/1)
            Hello Time      2 sec
            Max Age         30 sec
            Forward Delay   20 sec

[Output suppressed]
```

A. The root port is FastEthernet 2/1
B. The designated port is FastEthernet 2/1
C. The spanning-tree mode is PVST+
D. This is a root bridge
E. The spanning-tree mode is Rapid PVST+

Correct Answer: AE
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 63
A network engineer must create a diagram of a multivendor network. Which command must be configured on the Cisco devices so that the topology of the network can be mapped?

A. Device(config)#lldp run
B. Device(config)#cdp run
C. Device(config-if)#cdp enable
D. Device(config)#flow-sampler-map topology

Correct Answer: A
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 64
How do AAA operations compare regarding user identification, user services, and access control?

A. Authorization provides access control, and authentication tracks user services
B. Authentication identifies users, and accounting tracks user services
C. Accounting tracks user services, and authentication provides access control
D. Authorization identifies users, and authentication provides access control

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 65
What is difference between RADIUS and TACACS+?

A. RADIUS logs all commands that are entered by the administrator, but TACACS+ logs only start, stop, and interim commands.
B. TACACS+ separates authentication and authorization, and RADIUS merges them.
C. TACACS+ encrypts only password information, and RADIUS encrypts the entire payload.
D. RADIUS is most appropriate for dial authentication, but TACACS+ can be used for multiple types of authentication.

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 66
What is a difference between local AP mode and FlexConnect AP mode?

A. Local AP mode creates two CAPWAP tunnels per AP to the WLC
B. Local AP mode causes the AP to behave as if it were an autonomous AP
C. FlexConnect AP mode fails to function if the AP loses connectivity with the WLC
D. FlexConnect AP mode bridges the traffic from the AP to the WLC when local switching is configured

Correct Answer: D
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 67
The SW1 interface g0/1 is in the down/down state. Which two configurations are valid reasons for the interface condition? (Choose two.)

A. There is a protocol mismatch
B. There is a duplex mismatch
C. The interface is shut down
D. The interface is error-disabled
E. There is a speed mismatch

Correct Answer: CE
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 68
Which statement about Link Aggregation when implemented 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
Section: Network Access
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 69
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
Section: Network Access
Explanation

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

QUESTION 70

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

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

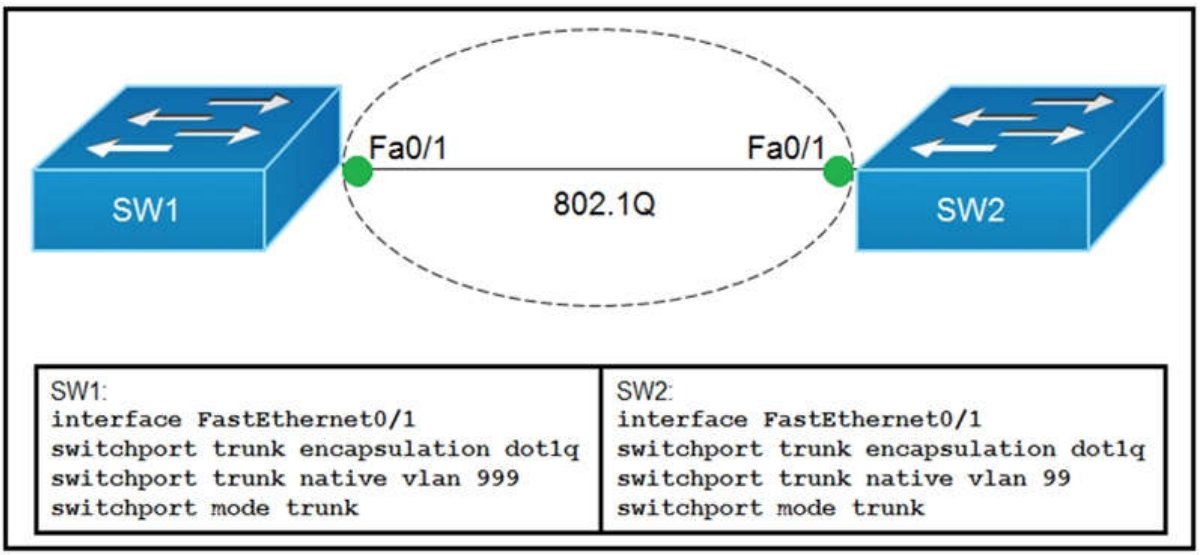
A. adminadmin123
B. cisco123

C. default
D. testing1234

Correct Answer: D
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 71



Refer to the 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
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 72
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 enables BPDU messages.
D. It minimizes spanning-tree convergence time.

Correct Answer: D
Section: Network Access
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 73
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
Section: Network Access
Explanation

Explanation/Reference:

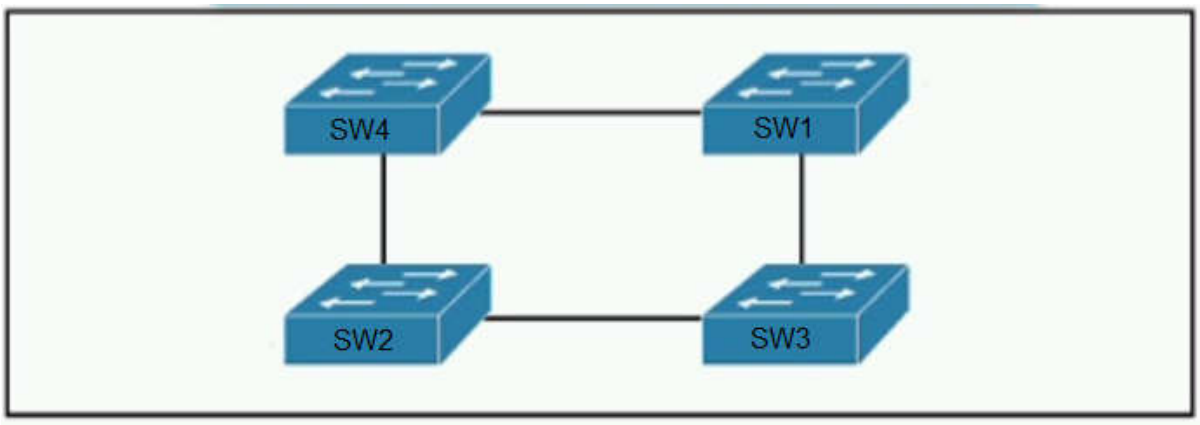
QUESTION 74
Which QoS Profile is selected in the GUI when configuring a voice over WLAN deployment?

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

Correct Answer: A
Section: Network Access
Explanation

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

QUESTION 75



Refer to the exhibit. Which switch in this configuration will be elected as the root bridge?

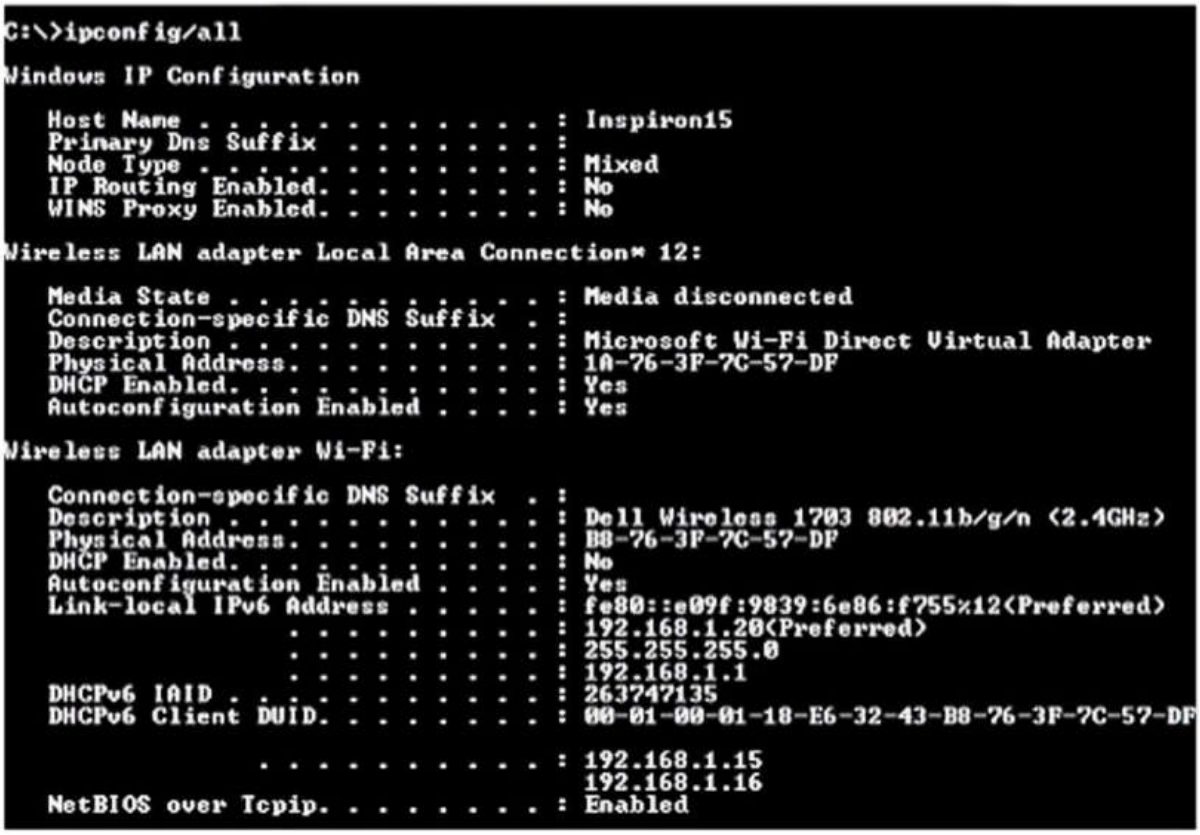
SW1: 0C:E0:38:00:45:17
SW2: 0C:0E:15:22:05:97
SW3: 0C:0E:15:1A:3C:9D
SW4: 0C:E0:18:A1:B3:19

A. SW1
B. SW2
C. SW3
D. SW4

Correct Answer: C
Section: Network Access
Explanation

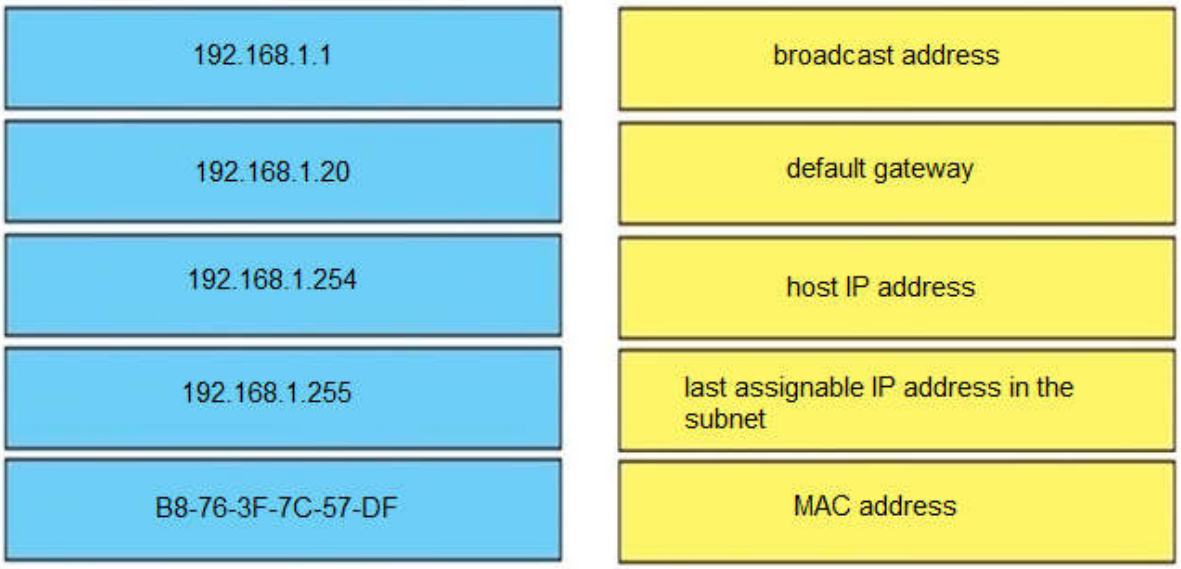
Explanation/Reference:

QUESTION 76
DRAG DROP

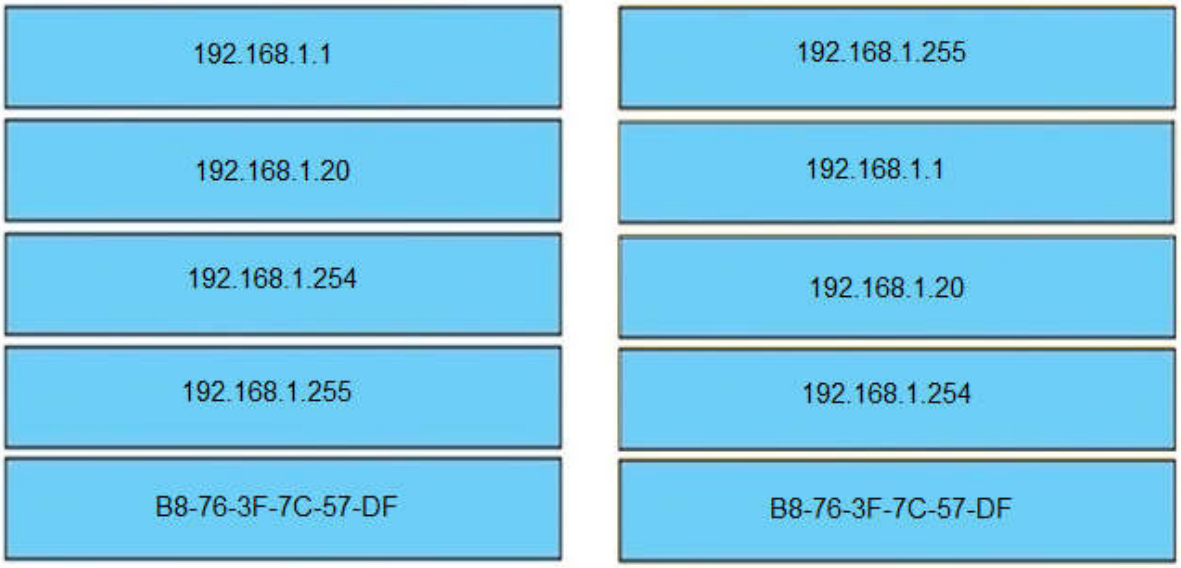


Refer to the exhibit. An engineer is tasked with verifying network configuration parameters on a client workstation to report back to the team lead. Drag and drop the node identifiers from the left onto the network parameters on the right.

Select and Place:



Correct Answer:



Section: Network Access
Explanation

Explanation/Reference:

QUESTION 77
An engineer needs to configure LLDP to send the port description time length value (TLV). What command sequence must be implemented?

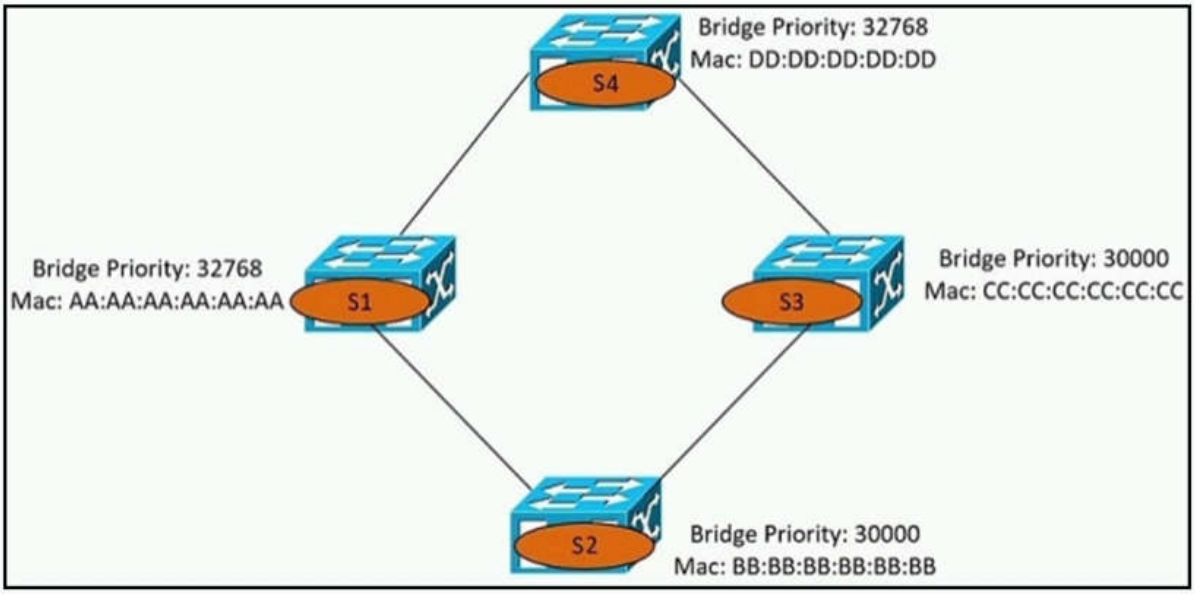
A. switch(config-if)#**lldp port-description**
B. switch#**lldp port-description**
C. switch(config-line)#**lldp port-description**
D. switch(config)#**lldp port-description**

Correct Answer: D

Section: Network Access
Explanation

Explanation/Reference:

QUESTION 78



Refer to the exhibit. Which switch becomes the root bridge?

A. S1
B. S2
C. S3
D. S4

Correct Answer: B
Section: Network Access
Explanation

Explanation/Reference:

QUESTION 79
Which configuration ensures that the switch is always the root for VLAN 750?

A. Switch(config)#**spanning-tree vlan 750 priority 38004517**
B. Switch(config)#**spanning-tree vlan 750 priority 0**
C. Switch(config)#**spanning-tree vlan 750 root primary**
D. Switch(config)#**spanning-tree vlan 750 priority 614440**

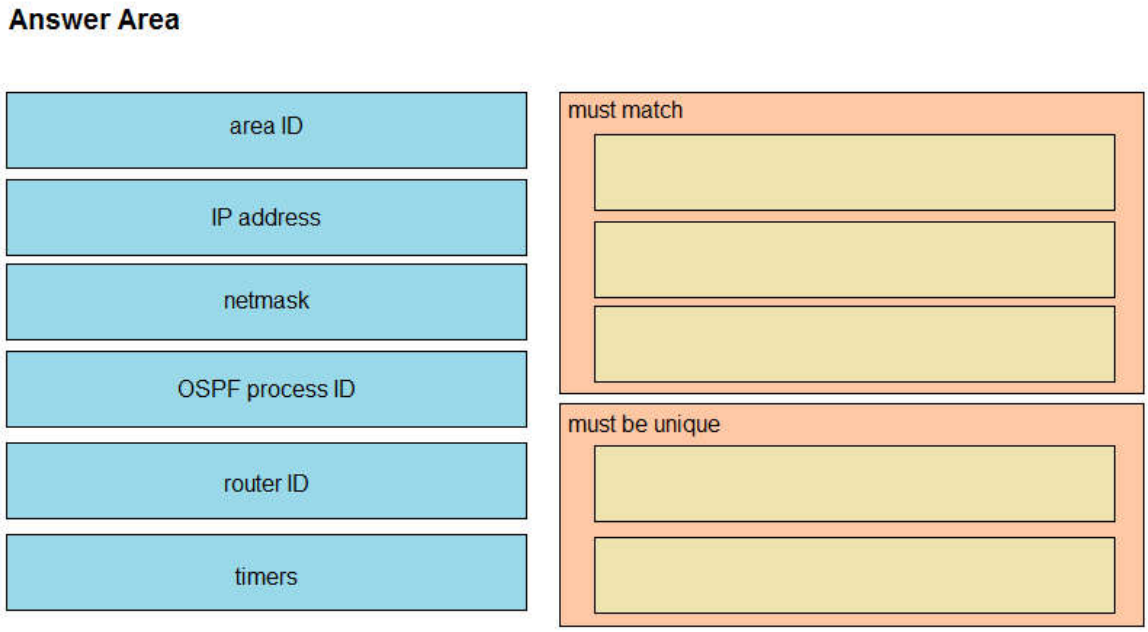
Correct Answer: C
Section: Network Access
Explanation

Explanation/Reference:

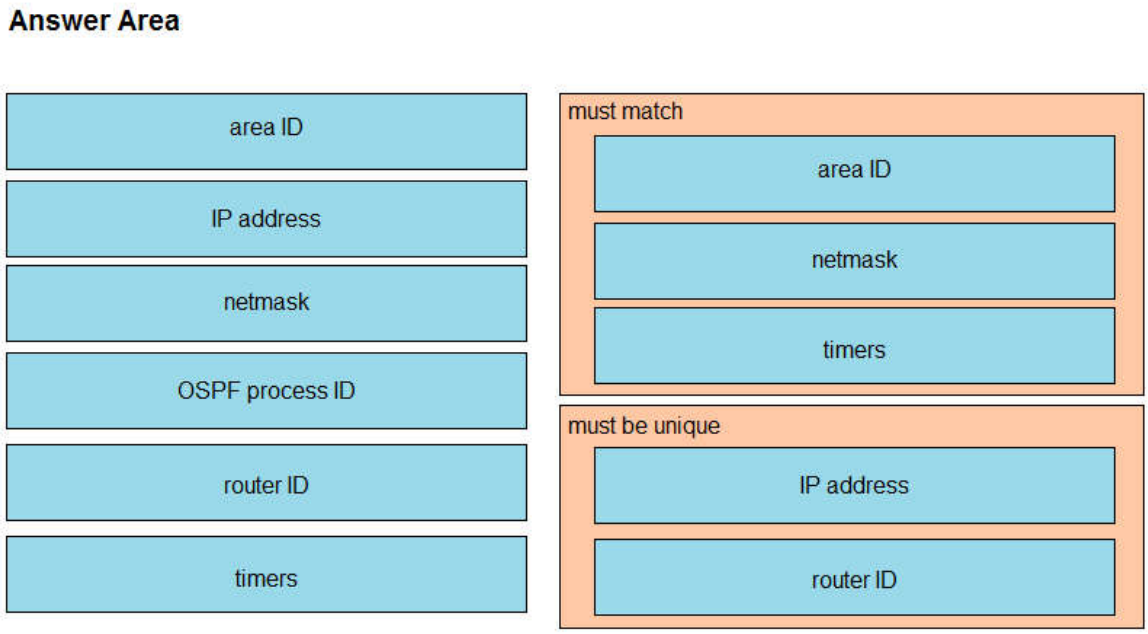
QUESTION 80
DRAG DROP

A network engineer is configuring an OSPFv2 neighbor adjacency. Drag and drop the parameters from the left onto their required categories on the right. Not all parameters are used.

Select and Place:



Correct Answer:



Section: IP Connectivity
Explanation

Explanation/Reference:

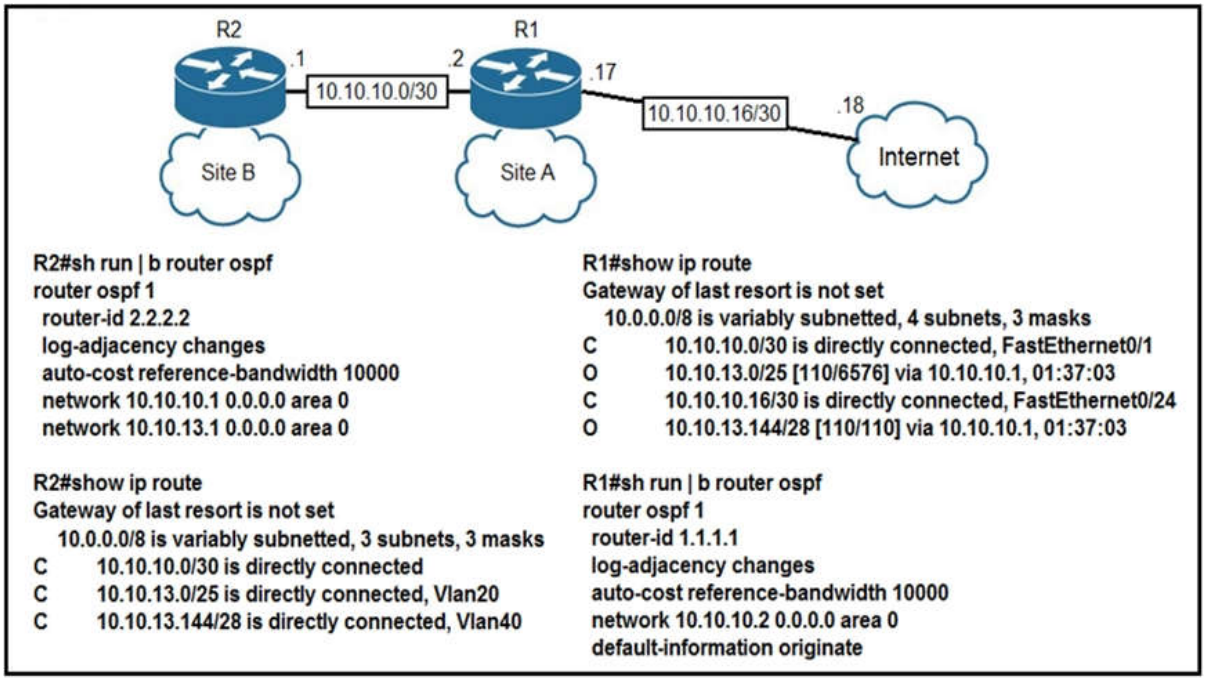
QUESTION 81
R1 has learned route 192.168.12.0/24 via IS-IS, OSPF, RIP, and Internal EIGRP. Under normal operating conditions, which routing protocol is installed in the routing table?

A. IS-IS
B. Internal EIGRP
C. RIP
D. OSPF

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 82



Refer to the exhibit. The **default-information originate** command is configured under the R1 OSPF configuration. After testing, workstations on VLAN 20 at Site B cannot reach a DNS server on the Internet.

Which action corrects the configuration issue?

A. Add the **default-information originate** command on R2.
B. Add the **always** keyword to the **default-information originate** command on R1.
C. Configure the **ip route 0.0.0.0 0.0.0.0 10.10.10.18** command on R1.
D. Configure the **ip route 0.0.0.0 0.0.0.0 10.10.10.2** command on R2.

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 83

```
R1# show ip route | begin gateway
Gateway of last resort is 209.165.200.246 to network 0.0.0.0
S* 0.0.0.0/0 [1/0] via 209.165.200.246, Serial0/1/0
     is directly connected, Serial0/1/0
     172.16.0.0/16 is variably subnetted, 3 subnets, 3 masks
S    172.16.0.0/24 [1/0] via 207.165.200.250, Serial0/0/0
O    172.16.0.128/25 [110/38443] via 207.165.200.254, 00:00:23, Serial0/0/1
D    172.16.0.192/29 [90/3184439] via 207.165.200.254, 00:00:25, Serial0/0/1
     209.165.200.0/24 is variably subnetted, 4 subnets, 2 masks
C    209.165.200.248/30 is directly connected, Serial0/0/0
L    209.165.200.249/32 is directly connected, Serial0/0/0
C    209.165.200.252/30 is directly connected, Serial0/0/1
L    209.165.200.253/32 is directly connected, Serial0/0/1
```

Refer to the exhibit. With which metric was the route to host 172.16.0.202 learned?

A. 0
B. 110
C. 38443
D. 3184439

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 84
A user configured OSPF in a single area between two routers. A serial interface connecting R1 and R2 is running encapsulation PPP. By default, which OSPF network type is seen on this interface when the user types show ip ospf interface on R1 or R2?

A. nonbroadcast
B. point-to-point
C. point-to-multipoint
D. broadcast

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 85
Which MAC address is recognized as a VRRP virtual address?

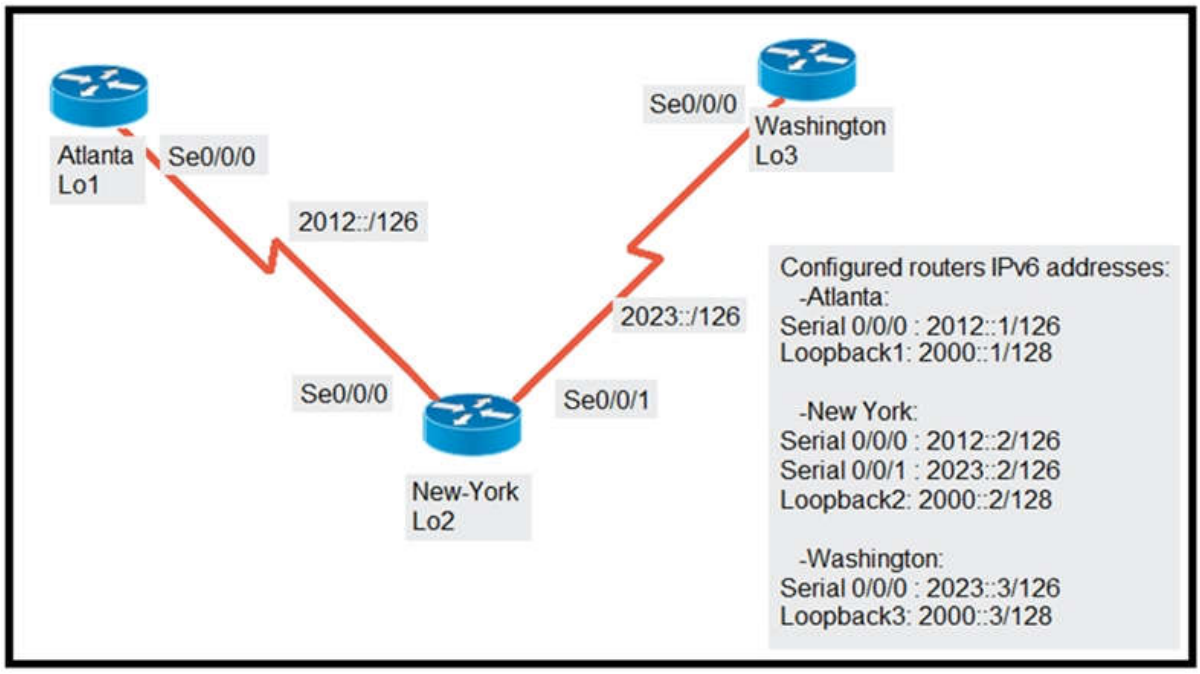
A. 0000.5E00.010a
B. 0005.3709.8968
C. 0000.0C07.AC99

D. 0007.C070.AB01

Correct Answer: A
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 86



Refer to the exhibit. The New York router is configured with static routes pointing to the Atlanta and Washington sites.

Which two tasks must be performed so that the Se0/0/0 interfaces on the Atlanta and Washington routers can reach one another? (Choose two.)

A. Configure the **ipv6 route 2023::/126 2012::1** command on the Atlanta router.
B. Configure the **ipv6 route 2012::/126 2023::2** command on the Washington router.
C. Configure the **ipv6 route 2012::/126 2023::1** command on the Washington router.
D. Configure the **ipv6 route 2023::/126 2012::2** command on the Atlanta router.
E. Configure the **ipv6 route 2012::/126 s0/0/0** command on the Atlanta router.

Correct Answer: BD
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 87
A router running EIGRP has learned the same route from two different paths. Which parameter does the router use to select the best path?

A. as-path
B. administrative distance
C. metric
D. cost

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 88
An engineer configured an OSPF neighbor as a designated router. Which state verifies the designated router is in the proper mode?

A. Init
B. 2-way
C. Exchange
D. Full

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 89

```
R1# show ip route

D    192.168.16.0/26 [90/2679326] via 192.168.1.1
R    192.168.16.0/24 [120/3] via 192.168.1.2
O    192.168.16.0/21 [110/2] via 192.168.1.3
i L1 192.168.16.0/27 [115/30] via 192.168.1.4
```

Refer to the exhibit. Which route does R1 select for traffic that is destined to 192.168.16.2?

A. 192.168.16.0/21
B. 192.168.16.0/24
C. 192.168.26.0/26
D. 192.168.16.0/27

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 90

```
Gateway of last resort is 10.12.0.1 to network 0.0.0.0

O*E2 0.0.0.0/0 [110/1] via 10.12.0.1, 00:00:01, GigabitEthernet0/0
     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    10.0.0.0/24 is directly connected, GigabitEthernet0/0
L    10.0.0.2/32 is directly connected, GigabitEthernet0/0
C    10.13.0.0/24 is directly connected, GigabitEthernet0/1
L    10.13.0.2/32 is directly connected, GigabitEthernet0/1
```

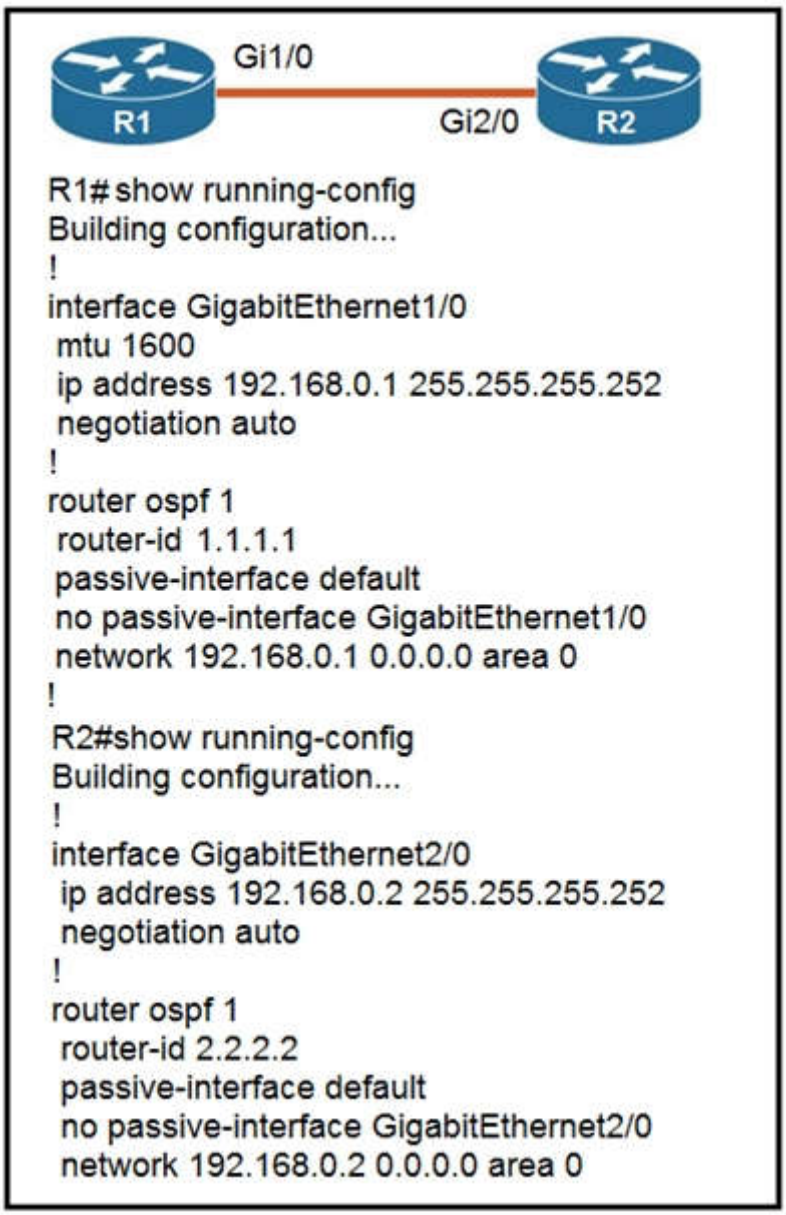
Refer to the exhibit. If configuring a static default route on the router with the **ip route 0.0.0.0 0.0.0.0 10.13.0.1 120** command, how does the router respond?

A. It starts sending traffic without a specific matching entry in the routing table to GigabitEthernet0/1.
B. It immediately replaces the existing OSPF route in the routing table with the newly configured static route.
C. It starts load-balancing traffic between the two default routes.
D. It ignores the new static route until the existing OSPF default route is removed.

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 91
Refer to the exhibit. Which configuration issue is preventing the OSPF neighbor from being established between the two routers?



A. R1 has an incorrect **network** command for interface Gi1/0.
B. R2 should have its **network** command in area 1.
C. R1 interface Gi1/0 has a larger MTU size.
D. R2 is using the **passive-interface default** command.

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 92
Refer to the exhibit. Router R1 is running three different routing protocols. Which route characteristic is used by the router to forward the packet that it receives for destination IP 172.16.32.1?

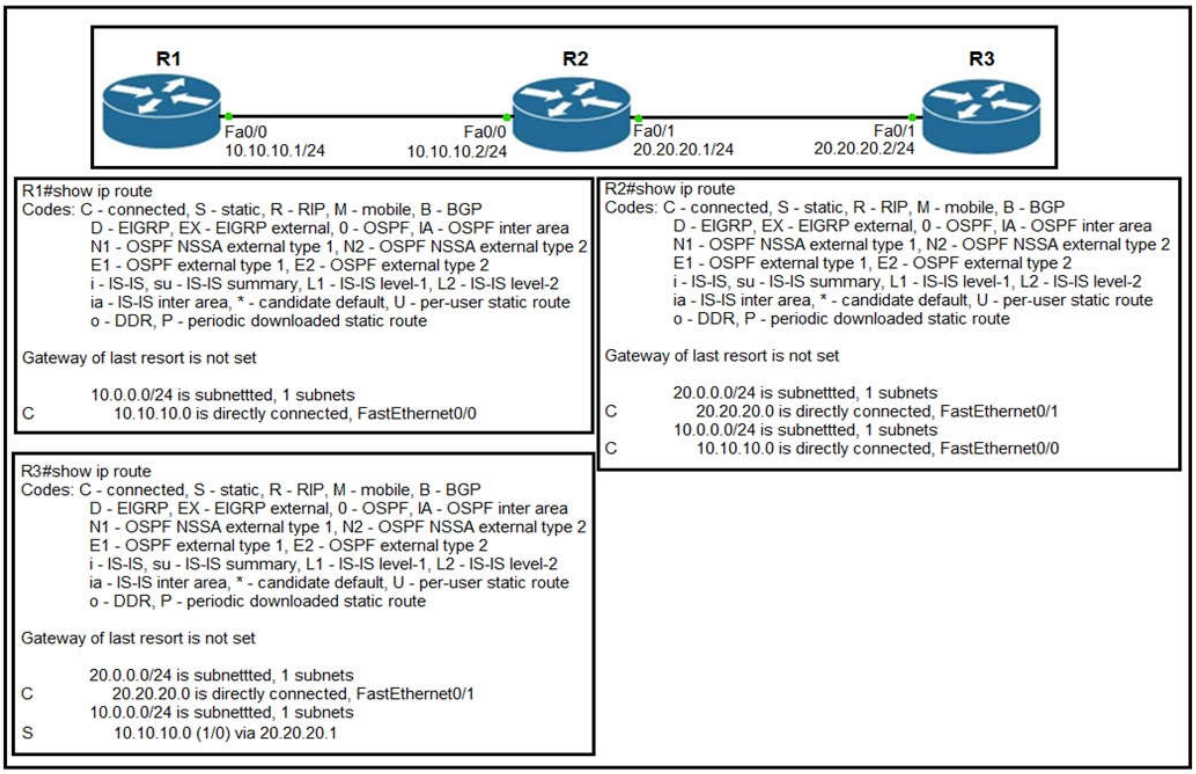
```
R1# show ip route
....
D       172.16.32.0/27      [90/2888597172] via 20.1.1.1
O       172.16.32.0/19      [110/292094] via 20.1.1.10
R       172.16.32.0/24      [120/2] via 20.1.1.3
```

A. longest prefix
B. administrative distance
C. cost
D. metric

Correct Answer: A
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 93
Refer to the exhibit. Router R1 Fa0/0 cannot ping router R3 Fa0/1. Which action must be taken in router R1 to help resolve the configuration issue?



A. set the default gateway as 20.20.20.2
B. configure a static route with Fa0/1 as the egress interface to reach the 20.20.2.0/24 network
C. configure a static route with 10.10.10.2 as the next hop to reach the 20.20.20.0/24 network
D. set the default network as 20.20.20.0/24

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 94
By default, how does EIGRP determine the metric of a route for the routing table?

A. It uses the bandwidth and delay values of the path to calculate the route metric.
B. It uses a default metric of 10 for all routes that are learned by the router.
C. It counts the number of hops between the receiving and destination routers and uses that value as the metric.
D. It uses a reference bandwidth and the actual bandwidth of the connected link to calculate the route metric.

Correct Answer: A
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 95
Router R1 must send all traffic without a matching routing-table entry to 192.168.1.1. Which configuration accomplishes this task?

A. R1#**Config t**
R1(config)#**ip routing**
R1(config)#**ip route default-route 192.168.1.1**
B. R1#**Config t**
R1(config)#**ip routing**
R1(config)#**ip route 192.168.1.1 0.0.0.0 0.0.0.0**
C. R1#**Config t**
R1(config)#**ip routing**
R1(config)#**ip route 0.0.0.0 0.0.0.0 192.168.1.1**
D. R1#**Config t**
R1(config)#**ip routing**
R1(config)#**ip default-gateway 192.168.1.1**

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 96
A packet is destined for 10.10.1.22. Which static route does the router choose to forward the packet?

A. ip route 10.10.1.0 255.255.255.240 10.10.255.1
B. ip route 10.10.1.20 255.255.255.252 10.10.255.1
C. ip route 10.10.1.16 255.255.255.252 10.10.255.1
D. ip route 10.10.1.20 255.255.255.254 10.10.255.1

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 97

```
EIGRP: 192.168.12.0/24
RIP: 192.168.12.0/27
OSPF: 192.168.12.0/28
```

Refer to the exhibit. How does the router manage traffic to 192.168.12.16?

A. It chooses the EIGRP route because it has the lowest administrative distance.
B. It load-balances traffic between all three routes.
C. It chooses the OSPF route because it has the longest prefix inclusive of the destination address.
D. It selects the RIP route because it has the longest prefix inclusive of the destination address.

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 98
What are two reasons for an engineer to configure a floating static route? (Choose two.)

A. to enable fallback static routing when the dynamic routing protocol fails
B. to route traffic differently based on the source IP of the packet
C. to automatically route traffic on a secondary path when the primary path goes down
D. to support load balancing via static routing
E. to control the return path of traffic that is sent from the router

Correct Answer: AC
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 99

```
R1# show ip route

D       192.168.10.0/24     [90/2679326] via 192.168.1.1
R       192.168.10.0/27     [120/3] via 192.168.1.2
O       192.168.10.0/23     [110/2] via 192.168.1.3
i L1    192.168.10.0/13     [115/30] via 192.168.1.4
```

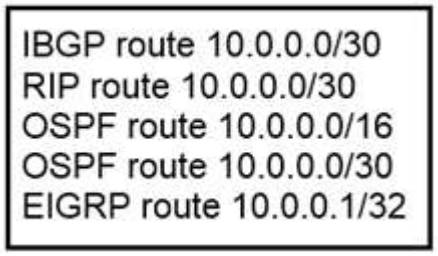
Refer to the exhibit. How does router R1 handle traffic to 192.168.10.16?

A. It selects the IS-IS route because it has the shortest prefix inclusive of the destination address
B. It selects the RIP route because it has the longest prefix inclusive of the destination address
C. It selects the OSPF route because it has the lowest cost
D. It selects the EIGRP route because it has the lowest administrative distance

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 100



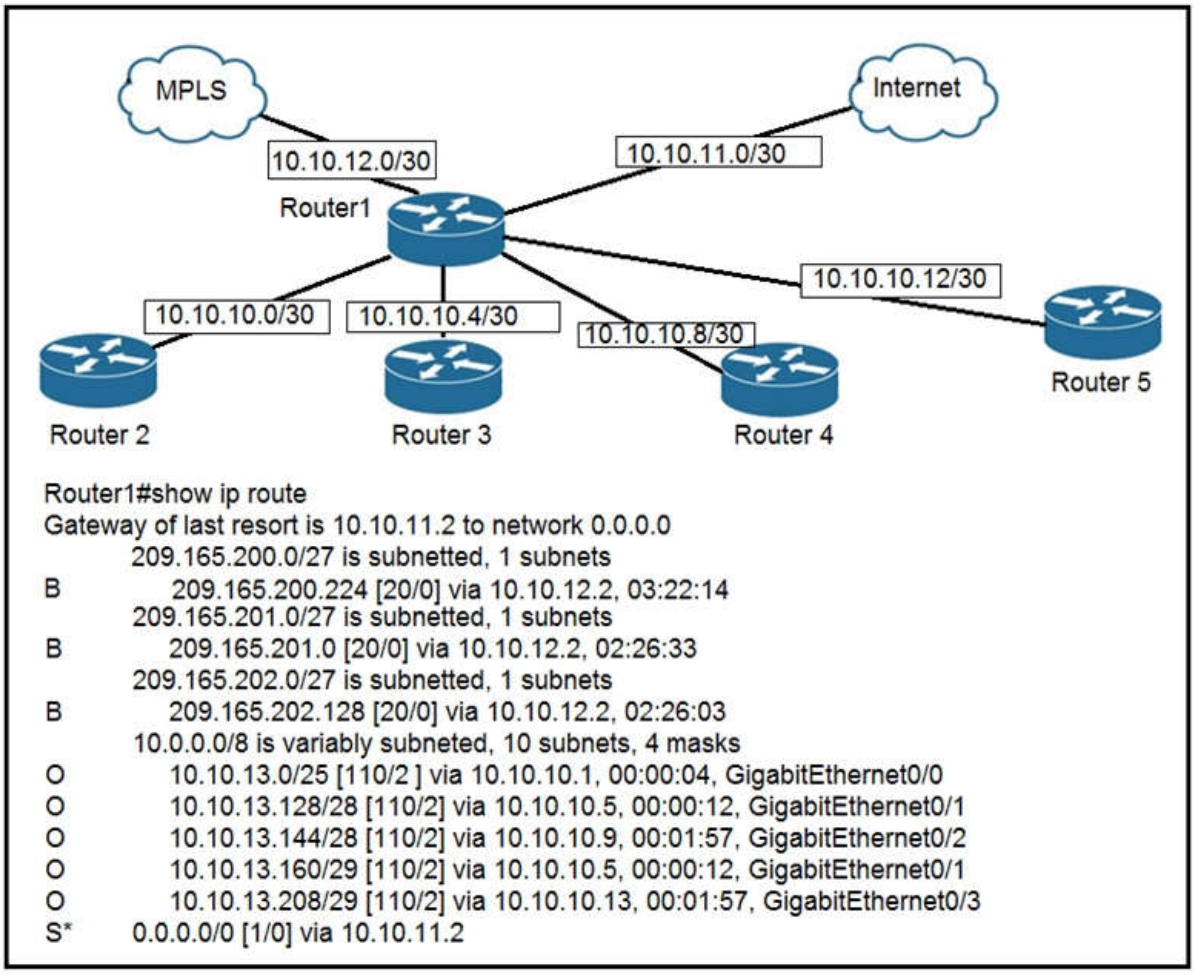
Refer to the exhibit. A router received these five routes from different routing information sources. Which two routes does the router install in its routing table? (Choose two)

A. OSPF route 10.0.0.0/30
B. IBGP route 10.0.0.0/30
C. OSPF route 10.0.0.0/16
D. EIGRP route 10.0.0.1/32
E. RIP route 10.0.0.0/30

Correct Answer: CD
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 101




```
Router1#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, 10 subnets, 4 masks
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 10.10.10.5, 00:00:12, GigabitEthernet0/1
O        10.10.13.144/28 [110/2] via 10.10.10.9, 00:01:57, GigabitEthernet0/2
O        10.10.13.160/29 [110/2] via 10.10.10.5, 00:00:12, GigabitEthernet0/1
O        10.10.13.208/29 [110/2] via 10.10.10.13, 00:01:57, GigabitEthernet0/3
S*    0.0.0.0/0 [1/0] via 10.10.11.2
```

Refer to the exhibit. To which device does Router1 send packets that are destined to host 10.10.13.165?

A. Router2
B. Router3
C. Router4
D. Router5

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 102
R1 has learned route 10.10.10.0/24 via numerous routing protocols. Which route is installed?

A. route with the next hop that has the highest IP
B. route with the lowest cost
C. route with the lowest administrative distance
D. route with the shortest prefix length

Correct Answer: C

Section: IP Connectivity
Explanation

Explanation/Reference:

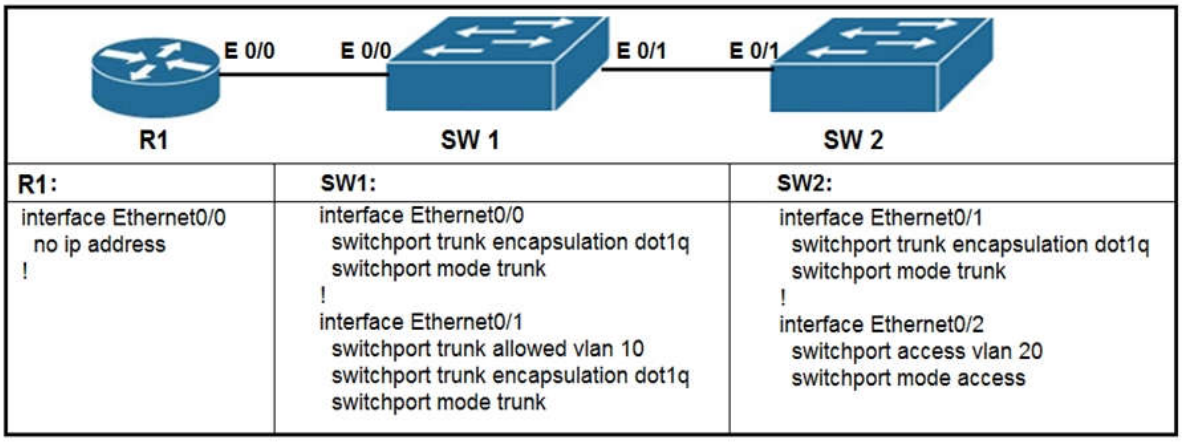
QUESTION 103
Which two minimum parameters must be configured on an active interface to enable OSPFV2 to operate? (Choose two.)

A. OSPF process ID
B. OSPF MD5 authentication key
C. OSPF stub flag
D. IPv6 address
E. OSPF area

Correct Answer: AE
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 104
Refer to the exhibit. What commands are needed to add a subinterface to Ethernet0/0 on R1 to allow for VLAN 20, with IP address 10.20.20.1/24?



R1:	SW1:	SW2:
interface Ethernet0/0 no ip address !	interface Ethernet0/0 switchport trunk encapsulation dot1q switchport mode trunk ! interface Ethernet0/1 switchport trunk allowed vlan 10 switchport trunk encapsulation dot1q switchport mode trunk	interface Ethernet0/1 switchport trunk encapsulation dot1q switchport mode trunk ! interface Ethernet0/2 switchport access vlan 20 switchport mode access

A. R1(config)#interface ethernet0/0
R1(config)#encapsulation dot1q 20
R1(config)#ip address 10.20.20.1 255.255.255.0
B. R1(config)#interface ethernet0/0.20
R1(config)#encapsulation dot1q 20
R1(config)#ip address 10.20.20.1 255.255.255.0
C. R1(config)#interface ethernet0/0.20
R1(config)#ip address 10.20.20.1 255.255.255.0
D. R1(config)#interface ethernet0/0
R1(config)#ip address 10.20.20.1 255.255.255.0

Correct Answer: B
Section: IP Connectivity

Explanation

Explanation/Reference:

QUESTION 105

```
R1#show ip interface brief
Interface              IP-Address      OK? Method  Status                  Protocol
FastEthernet0/0        unassigned      YES NVRAM   administratively down   down
GigabitEthernet1/0     192.168.0.1     YES NVRAM   up                      up
GigabitEthernet2/0     10.10.1.10      YES manual  up                      up
GigabitEthernet3/0     10.10.10.20     YES manual  up                      up
GigabitEthernet4/0     unassigned      YES NVRAM   administratively down   down
Loopback0              172.16.15.10    YES manual
```

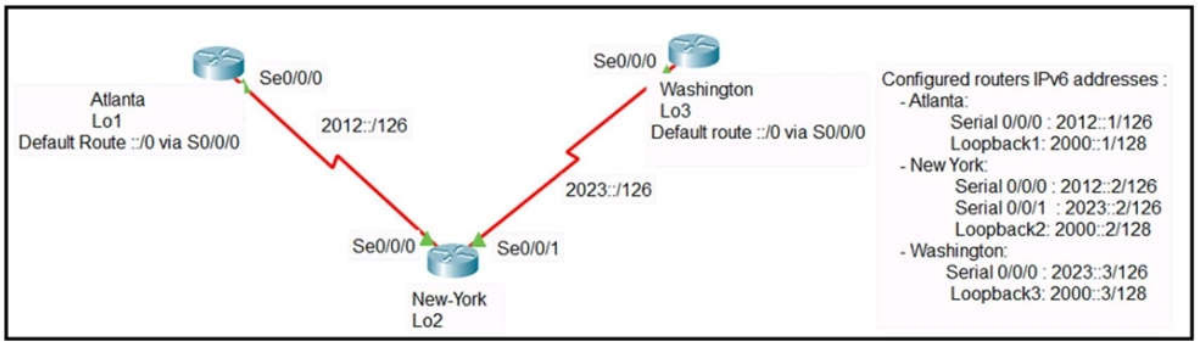
Refer to the exhibit. What does router R1 use as its OSPF router-ID?

A. 10.10.1.10
B. 10.10.10.20
C. 172.16.15.10
D. 192.168.0.1

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 106



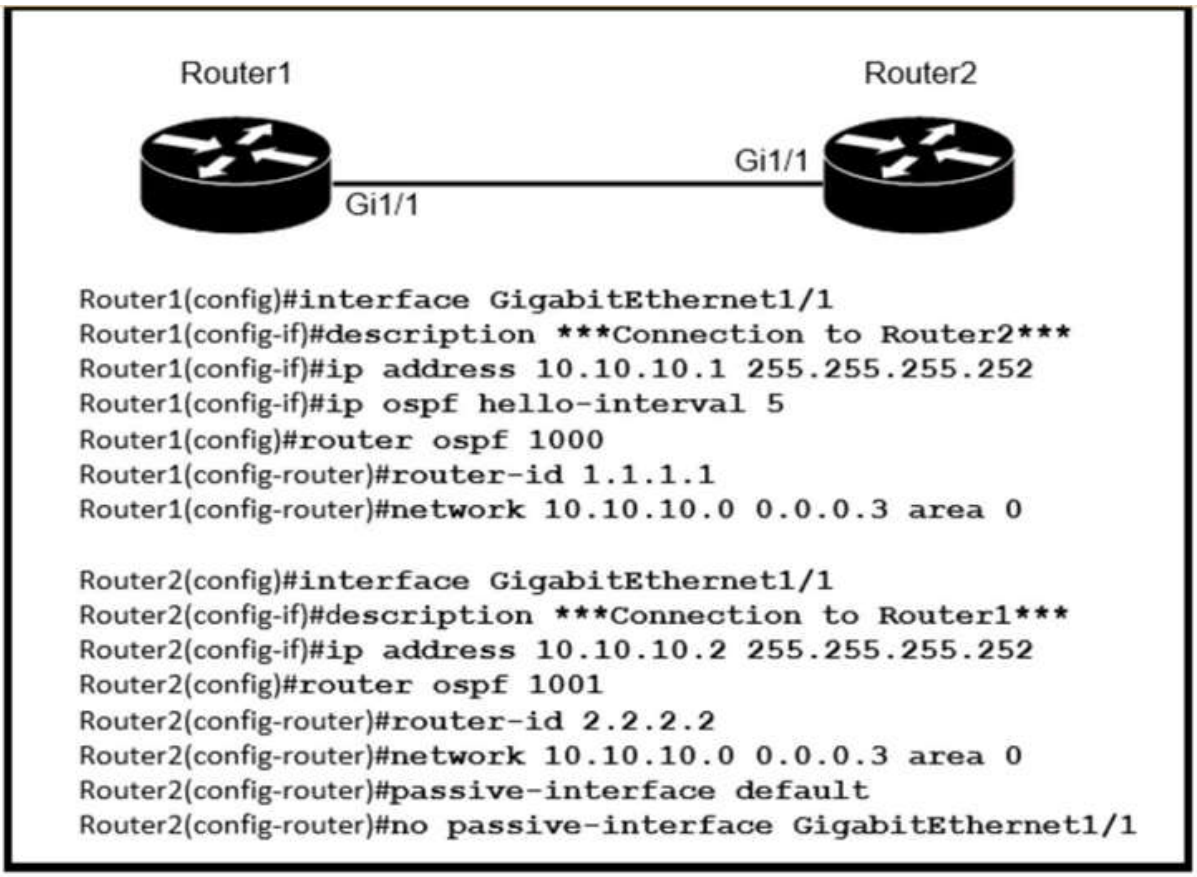
Refer to the exhibit. The loopback1 interface of the Atlanta router must reach the loopback3 interface of the Washington router. Which two static host routes must be configured on the New York router? (Choose two.)

A. ipv6 route 2000::3/128 s0/0/0
B. ipv6 route 2000::1/128 s0/0/1
C. ipv6 route 2000::1/128 2012::1
D. ipv6 route 2000::1/128 2012::2
E. ipv6 route 2000::3/128 2023::3

Correct Answer: CE
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 107



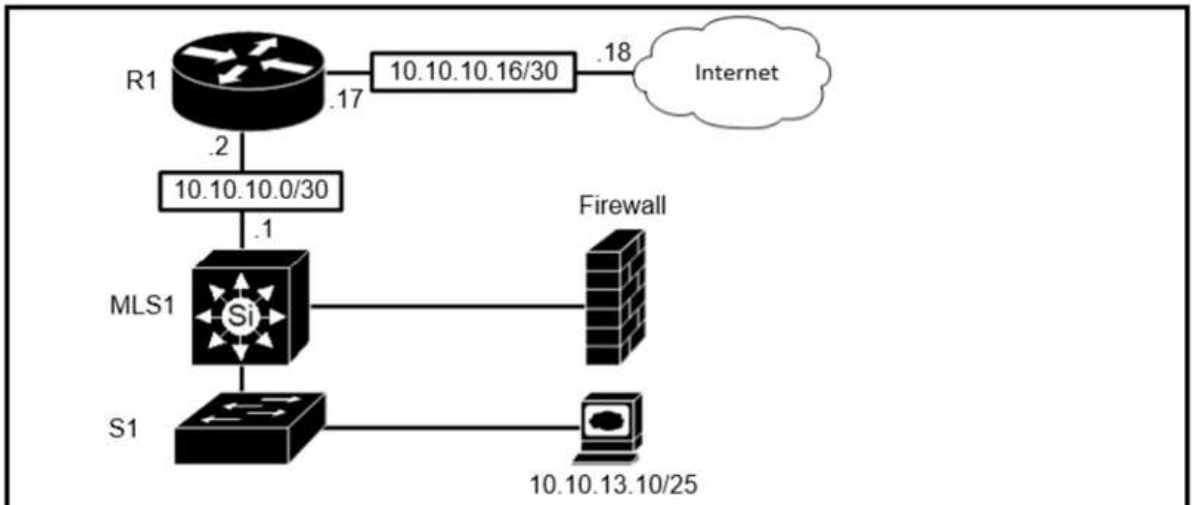
Refer to the exhibit. After the configuration is applied, the two routers fail to establish an OSPF neighbor relationship. What is the reason for the problem?

A. The OSPF process IDs are mismatched
B. The network statement on Router1 is misconfigured
C. Router2 is using the default hello timer
D. The OSPF router IDs are mismatched

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 108




```
R1#sh ip ro
Gateway of last resort is 10.10.10.18 to network 0.0.0.0

     10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C       10.10.10.0/30 is directly connected, FastEthernet0/1
O       10.10.13.0/25 [110/6576] via 10.10.10.1, 06:58:21, FastEthernet0/1
C       10.10.10.16/30 is directly connected, FastEthernet0/24
O       10.10.13.144/28 [110/110] via 10.10.10.1, 06:58:21, FastEthernet0/1
B*   0.0.0.0/0 [20/0] via 10.10.10.18, 01:17:58
```

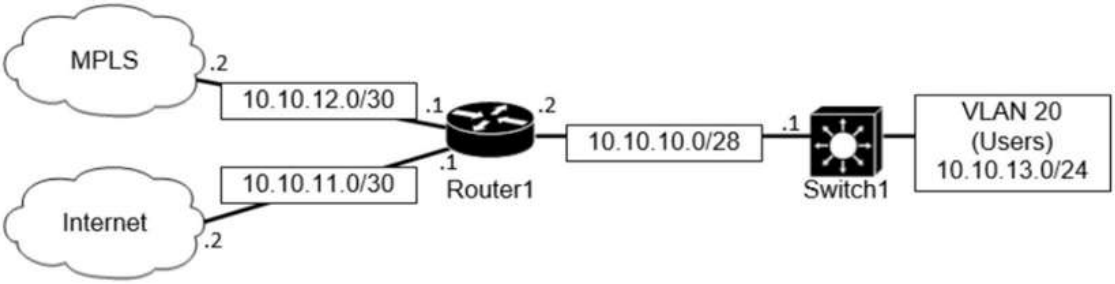
Refer to the exhibit. Which route type is configured to reach the Internet?

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

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 109




```
Router1#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, 00:09:57
     10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C       10.10.10.0/28 is directly connected, GigabitEthernet0/0
C       10.10.11.0/30 is directly connected, FastEthernet2/0
O       10.10.13.0/24 [110/2] via 10.10.10.1, 00:08:34, GigabitEthernet0/0
C       10.10.12.0/30 is directly connected, GigabitEthernet0/1
S*   0.0.0.0/0 [1/0] via 10.10.11.2

Switch1#show ip route
Gateway of last resort is not set
     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.10.10.0/28 is directly connected, FastEthernet0/1
C       10.10.13.0/24 is directly connected, VLAN20
```

Refer to the exhibit. Which path is used by the router for Internet traffic?

A. 209.165.200.0/27
B. 0.0.0.0/0
C. 10.10.13.0/24
D. 10.10.10.0/28

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 110
When OSPF learns multiple paths to a network, how does it select a route?

A. For each existing interface, it adds the metric from the source router to the destination to calculate the route with the lowest bandwidth.
B. It counts the number of hops between the source router and the destination to determine the route with the lowest metric.
C. It divides a reference bandwidth of 100 Mbps by the actual bandwidth of the exiting interface to calculate the route with the lowest cost.
D. It multiplies the active K values by 256 to calculate the route with the lowest metric.

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 111
When a floating static route is configured, which action ensures that the backup route is used when the primary route fails?

A. The administrative distance must be higher on the primary route so that the backup route becomes secondary.
B. The **default-information originate** command must be configured for the route to be installed into the routing table.
C. The floating static route must have a lower administrative distance than the primary route so it is used as a backup.
D. The floating static route must have a higher administrative distance than the primary route so it is used as a backup

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 112

```
Designated Router (ID) 10.11.11.11, Interface address 10.10.10.1
Backup Designated router (ID) 10.3.3.3, Interface address 10.10.10.3
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
oob-resync timeout 40
Hello due in 00:00:08
Supports Link-local Signaling (LLS)
Cisco NSF helper support enabled
IETF NSF helper support enabled
Index 1/1/1, flood queue length 0
Next 0x0(0)/0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 6
Last flood scan time is 0 msec, maximum is 1 msec
Neighbor Count is 3, Adjacent neighbor count is 3
Adjacent with neighbor 10.1.1.4
Adjacent with neighbor 10.2.2.2
Adjacent with neighbor 10.3.3.3 (Backup Designated Router)
Suppress hello for 0 neighbor(s)
```

Refer to the exhibit. The **show ip ospf interface** command has been executed on R1. How is OSPF configured?

A. A point-to-point network type is configured.
B. The interface is not participating in OSPF.
C. The default Hello and Dead timers are in use.

D. There are six OSPF neighbors on this interface.

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/support/docs/ip/open-shortest-path-first-ospf/13689-17.html

QUESTION 113
A user configured OSPF and advertised the Gigabit Ethernet interface in OSPF. By default, which type of OSPF network does this interface belong to?

A. point-to-multipoint
B. point-to-point
C. broadcast
D. nonbroadcast

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 114
Which attribute does a router use to select the best path when two or more different routes to the same destination exist from two different routing protocols?

A. dual algorithm
B. metric
C. administrative distance
D. hop count

Correct Answer: C
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 115
Router A learns the same route from two different neighbors; one of the neighbor routers is an OSPF neighbor, and the other is an EIGRP neighbor.

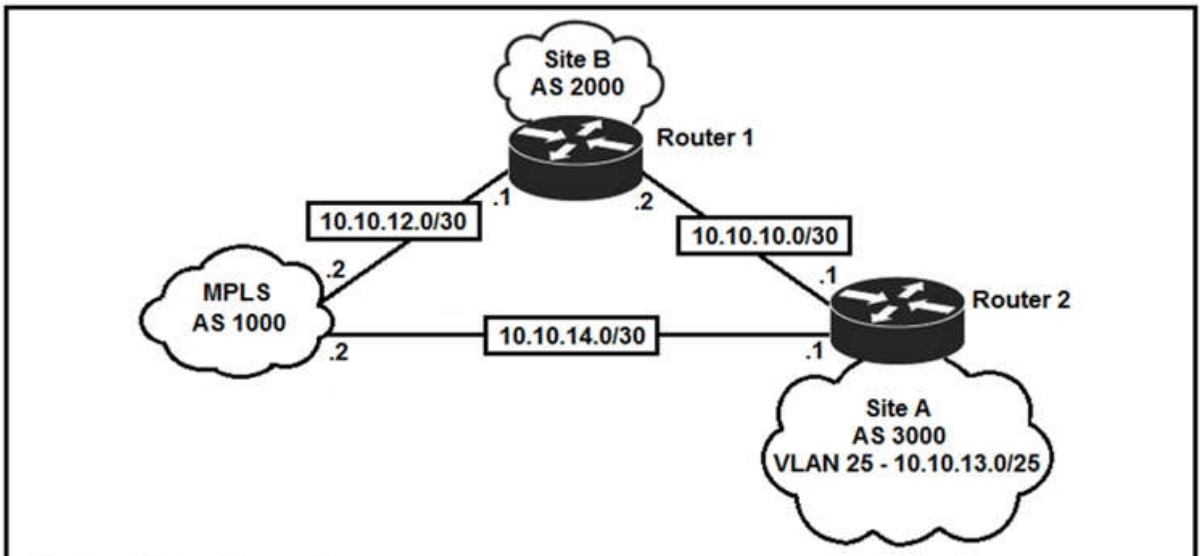
What is the administrative distance of the route that will be installed in the routing table?

A. 20
B. 90
C. 110
D. 115

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 116




```
Router1#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0
     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, FastEthernet2/0
O       10.10.13.0/25 [110/2] via 10.10.10.1, 00:00:17, GigabitEthernet0/0
O       10.10.13.128/28 [110/2] via 10.10.10.1, 00:33:38, GigabitEthernet0/0
O       10.10.13.144/28 [110/2] via 10.10.10.1, 00:33:38, GigabitEthernet0/0
O       10.10.13.160/29 [110/2] via 10.10.10.1, 00:33:38, GigabitEthernet0/0
O       10.10.13.208/29 [110/2] via 10.10.10.1, 00:33:39, GigabitEthernet0/0
O       10.10.13.252/30 [110/2] via 10.10.10.1, 00:33:39, GigabitEthernet0/0
S*   0.0.0.0/0 [1/0] via 10.10.11.2
```

Refer to the exhibit. An engineer is bringing up a new circuit to the MPLS provider on the Gi0/1 interface of Router 1. The new circuit uses eBGP and learns the route to VLAN25 from the BGP path.

What is the expected behavior for the traffic flow for route 10.10.13.0/25?

A. Traffic to 10.10.13.0/25 is load balanced out of multiple interfaces.
B. Traffic to 10.10.13.0/25 is asymmetrical.
C. Route 10.10.13.0/25 is updated in the routing table as being learned from interface Gi0/1.
D. Route 10.10.13.0/25 learned via the Gi0/0 interface remains in the routing table.

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 117
Which two actions influence the EIGRP route selection process? (Choose two.)

A. The advertised distance is calculated by a downstream neighbor to inform the local router of the bandwidth

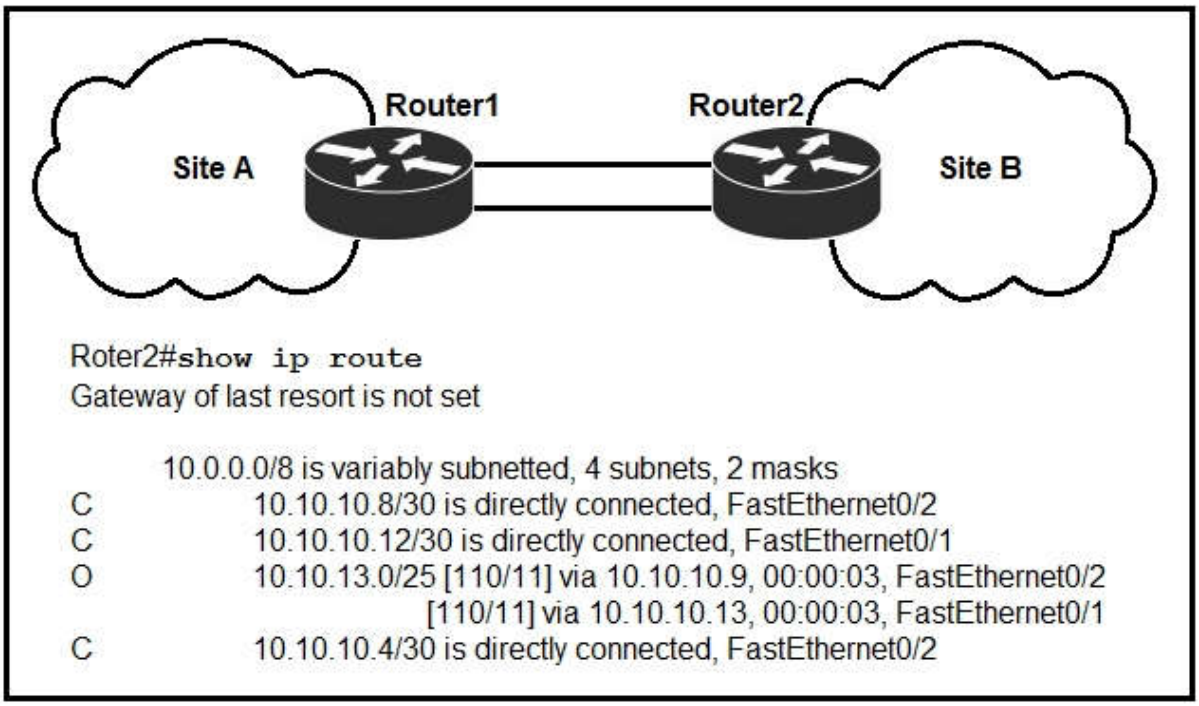
on the link.

B. The router calculates the feasible distance of all paths to the destination route.
C. The router must use the advertised distance as the metric for any given route.
D. The router calculates the best backup path to the destination route and assigns it as the feasible successor.
E. The router calculates the reported distance by multiplying the delay on the exiting interface by 256.

Correct Answer: BD
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 118



Refer to the exhibit. If OSPF is running on this network, how does Router2 handle traffic from Site B to 10.10.13.128/25 at Site A?

A. It sends packets out of interface Fa0/1 only.
B. It sends packets out of interface Fa0/2 only.
C. It load-balances traffic out of Fa0/1 and Fa0/2.
D. It cannot send packets to 10.10.13.128/25.

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

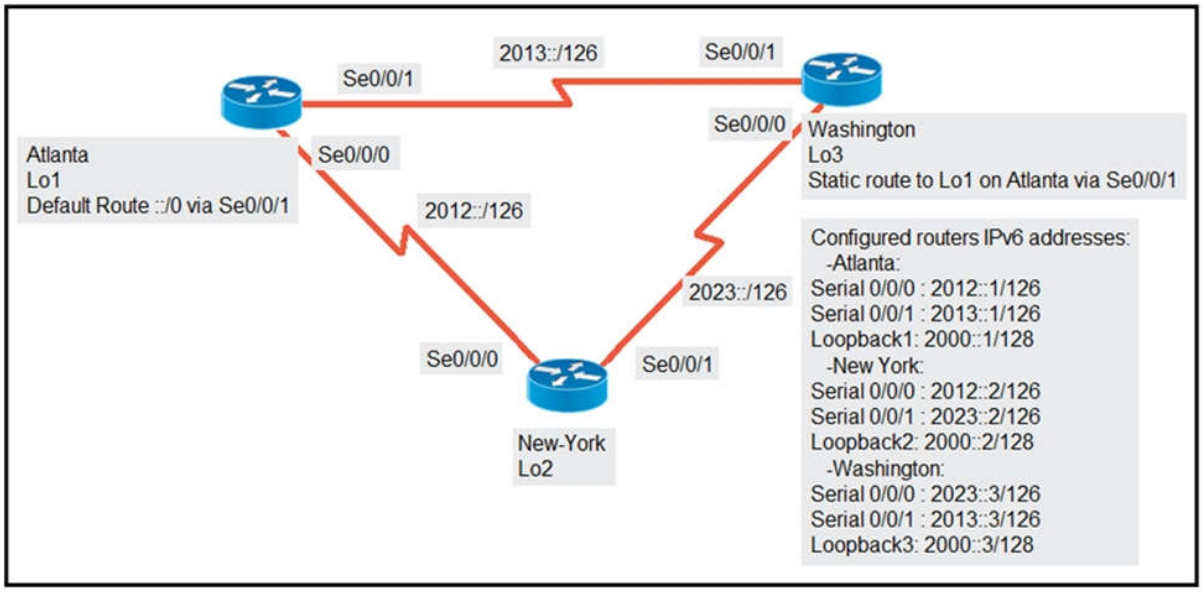
QUESTION 119
Which two outcomes are predictable behaviors for HSRP? (Choose two.)

A. The two routers negotiate one router as the active router and the other as the standby router.
B. The two routers share the same interface IP address, and default gateway traffic is load-balanced between them.
C. The two routers synchronize configurations to provide consistent packet forwarding.
D. Each router has a different IP address, both routers act as the default gateway on the LAN, and traffic is load-balanced between them.
E. The two routers share a virtual IP address that is used as the default gateway for devices on the LAN.

Correct Answer: AE
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 120



Refer to the exhibit. An engineer is configuring the New York router to reach the Lo1 interface of the Atlanta router using interface Se0/0/0 as the primary path. Which two commands must be configured on the New York router so that it can reach the Lo1 interface of the Atlanta router via Washington when the link between New York and Atlanta goes down? (Choose two.)

A. **Ipv6 route 2000::1/128 2012::1**
B. **Ipv6 route 2000::1/128 2012::1 5**
C. **Ipv6 route 2000::1/128 2012::2**
D. **Ipv6 route 2000::1/128 2023::2 5**
E. **Ipv6 route 2000::1/128 2023::3 5**

Correct Answer: AE
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 121

How does HSRP provide first hop redundancy?

A. It load-balances Layer 2 traffic along the path by flooding traffic out all interfaces configured with the same VLAN.
B. It uses a shared virtual MAC and a virtual IP address to a group of routers that serve as the default gateway for hosts on a LAN.
C. It forwards multiple packets to the same destination over different routed links in the data path.
D. It load-balances traffic by assigning the same metric value to more than one route to the same destination in the IP routing table.

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 122
Refer to the exhibit. What action establishes the OSPF neighbor relationship without forming an adjacency?

```
R1# sh ip ospf int gig0/0
Gig0/0 is up, line protocol is up
        Internet Address 10.201.24.8/28, Area 1, Attached via Network Statement
        Process ID 100, Router ID 192.168.1.1, Network Type BROADCAST, Cost: 1
        Topology-MTID     Cost     Disabled     Shutdown     Topology Name
                0           1          no           no            Base
        Transmit Delay is 1 sec, State DR, Priority 1
        Designated Router (ID) 192.168.1.1, Interface address 10.201.24.8
        No backup designated router on this network
        Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
                oob-resync timeout 40
                Hello due in 00:00:07

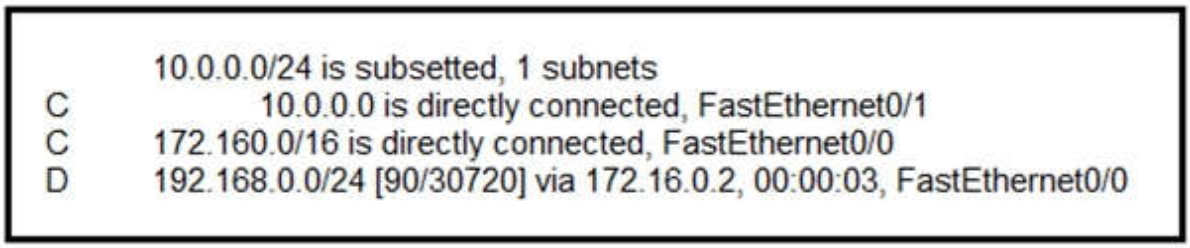
R2#sh ip ospf int gig0/0
gig0/0 is up, line protocol is up
        Internet Address 10.201.24.1/28, Area 1
        Process ID 100, Router ID 172.16.1.1, Network Type BROADCAST, Cost: 1
        Transmit Delay is 1 sec, State DR, Priority 1
        Designated Router (ID) 172.16.1.1, Interface address 10.201.24.1
        No backup designated router on this network
        Timer intervals configured, Hello 20, Dead 80, Wait 80, Retransmit 5
```

A. modify hello interval
B. modify process ID
C. modify priority
D. modify network type

Correct Answer: A
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 123



Refer to the exhibit. Which route type does the routing protocol Code D represent in the output?

A. statically assigned route
B. route learned through EIGRP
C. /24 route of locally configured IP
D. internal BGP route

Correct Answer: B
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 124
An engineer must configure an OSPF neighbor relationship between router R1 and R3. The authentication configuration has been configured and the connecting interfaces are in the same 192.168.1.0/30 subnet. What are the next two steps to complete the configuration? (Choose two.)

A. configure the interfaces as OSPF active on both sides
B. configure both interfaces with the same area ID
C. configure the hello and dead timers to match on both sides
D. configure the same process ID for the router OSPF process
E. configure the same router ID on both routing processes

Correct Answer: BC
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 125

```
R1# show ip route | begin gateway
Gateway of last resort is 209.165.200.246 to network 0.0.0.0
S* 0.0.0.0/0 [1/0] via 209.165.200.246, Serial0/1/0
      is directly connected, Serial0/1/0
      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
S     172.16.3.0/24 [1/0] via 209.165.200.250, Serial0/0/0
O     172.16.3.0/28 [110/1] via 209.165.200.254, 00:00:28, Serial0/0/1
      209.165.200.0/24 is variably subnetted, 6 subnets, 2 masks
C     209.165.200.244/30 is directly connected, Serial0/1/0
L     209.165.200.245/32 is directly connected, Serial0/1/0
C     209.165.200.248/30 is directly connected, Serial0/0/0
L     209.165.200.249/32 is directly connected, Serial0/0/0
C     209.165.200.252/30 is directly connected, Serial0/0/1
L     209.165.200.253/32 is directly connected, Serial0/0/1
```

Refer to the exhibit. A packet is being sent across router R1 to host 172.16.0.14. What is the destination route for the packet?

A. 209.165.200.250 via Serial0/0/0
B. 209.165.200.254 via Serial0/0/0
C. 209.165.200.254 via Serial0/0/1
D. 209.165.200.246 via Serial0/1/0

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 126

```
R1# show ip route | begin gateway
Gateway of last resort is 209.165.200.246 to network 0.0.0.0
S* 0.0.0.0/0 [1/0] via 209.165.200.246, Serial0/1/0
      is directly connected, Serial0/1/0
      172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
S     172.16.3.0/24 [1/0] via 207.165.200.250, Serial0/0/0
O     172.16.3.0/28 [110/84437] via 207.165.200.254, 00:00:28, Serial0/0/1
      207.165.200.0/24 is variably subnetted, 6 subnets, 2 masks
C     207.165.200.244/30 is directly connected, Serial0/1/0
L     207.165.200.245/32 is directly connected, Serial0/1/0
C     207.165.200.248/30 is directly connected, Serial0/0/0
L     207.165.200.249/32 is directly connected, Serial0/0/0
C     207.165.200.252/30 is directly connected, Serial0/0/1
L     207.165.200.253/32 is directly connected, Serial0/0/1
```

Refer to the exhibit. A packet is being sent across router R1 to host 172.16.3.14. To which destination does the router send the packet?

A. 207.165.200.246 via Serial0/1/0
B. 207.165.200.254 via Serial0/0/0
C. 207.165.200.250 via Serial0/0/0
D. 207.165.200.254 via Serial0/0/1

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 127

```
R1#config t
R1(config)# interface gi1/1
R1(config-if)# ip address 192.168.0.1 255.255.255.0

R1(config)# router bgp 65000
R1(config-router)# neighbor 192.168.0.2 remote-as 65001
R1(config-router)# network 10.1.1.0 mask 255.255.255.0

R1(config)# router ospf 1
R1(config)# router-id 1.1.1.1
R1(config)# network 192.168.0.1 0.0.0.0 area 0
R1(config)# network 10.1.1.0 0.0.0.255 area 0

R1(config)# router eigrp 1
R1(config)# eigrp router-id 1.1.1.1
R1(config)# network 10.1.1.0 0.0.0.255
R1(config)# network 192.168.0.1 0.0.0.0

R2#config t
R2(config)# interface gi1/1
R2(config-if)# ip address 192.168.0.2 255.255.255.0

R2#config t
R2(config)# router bgp 65001
R2(config-router)# neighbor 192.168.0.1 remote-as 65000

R2(config)# router ospf 1
R2(config)# router-id 2.2.2.2
R2(config)# network 192.168.1.2 0.0.0.0 area 0

R2(config)# router eigrp 1
R2(config)# eigrp router-id 1.1.1.1
R2(config)# network 192.168.0.1 0.0.0.0

R2(config)# ip route 10.1.1.0 255.255.255.0 192.168.0.1
```

Refer to the exhibit. Router R2 is configured with multiple routes to reach network 10.1.1.0/24 from router R1. What protocol is chosen by router R2 to reach the destination network 10.1.1.0/24?

A. static

B. EIGRP
C. eBGP
D. OSPF

Correct Answer: A
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 128

```
R1# show ip route
Codes:    C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
          D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
          N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
          E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
          i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default
          U - per-user static route, o - ODR
Gateway of last resort is not set
C         1.0.0.0/8 is directly connected, Loopback0
          10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
O              10.0.1.3/32 [110/100] via 10.0.1.3, 00:39:08, Serial0
C              10.0.1.0/24 is directly connected, Serial0
O              10.0.1.5/32 [110/5] via 10.0.1.50, 00:39:08, Serial0
O              10.0.1.4/32 [110/10] via 10.0.1.4, 00:39:08, Serial0
```

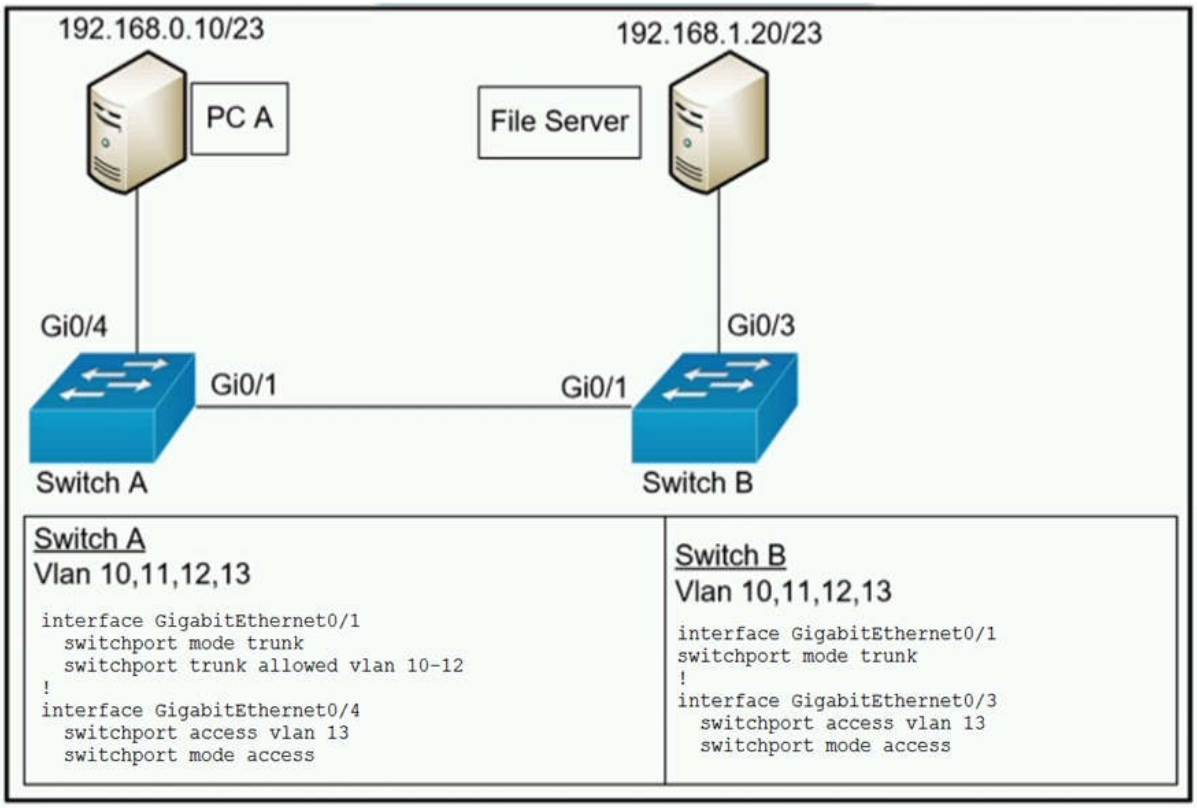
Refer to the exhibit. What is the next hop address for traffic that is destined to host 10.0.1.5?

A. Loopback 0
B. 10.0.1.4
C. 10.0.1.3
D. 10.0.1.50

Correct Answer: D
Section: IP Connectivity
Explanation

Explanation/Reference:

QUESTION 129



Refer to the exhibit. A network administrator assumes a task to complete the connectivity between PC A and the File Server. Switch A and Switch B have been partially configured with VLANs 10, 11, 12, and 13. What is the next step in the configuration?

A. Add PC A to VLAN 10 and the File Server to VLAN 11 for VLAN segmentation
B. Add VLAN 13 to the trunk links on Switch A and Switch B for VLAN propagation
C. Add a router on a stick between Switch A and Switch B allowing for Inter-VLAN routing
D. Add PC A to the same subnet as the File Server allowing for intra-VLAN communication

Correct Answer: C
Section: IP Connectivity
Explanation

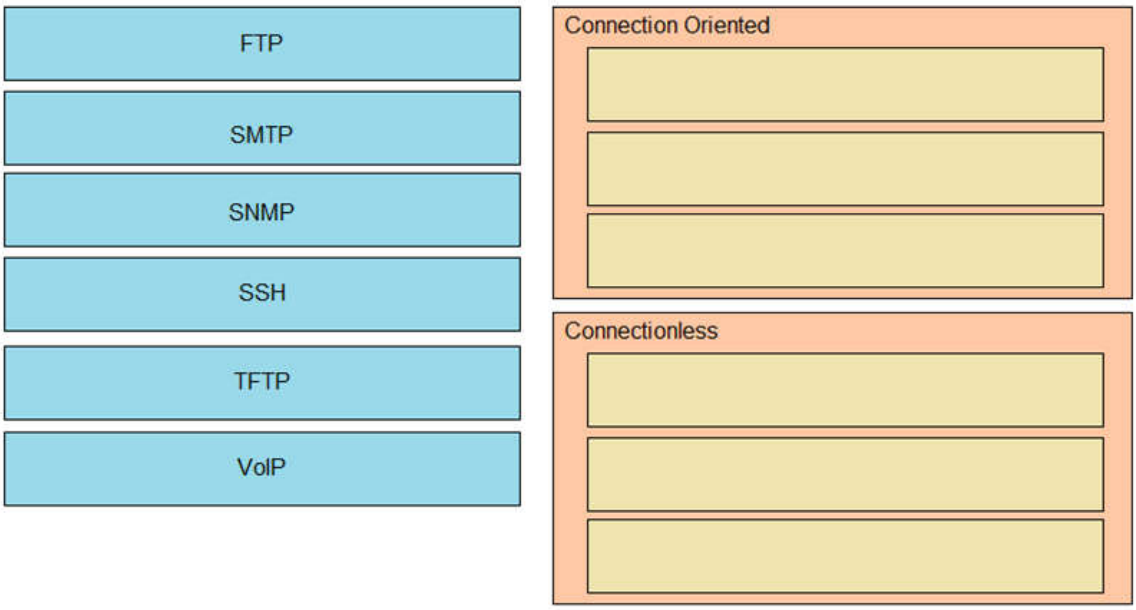
Explanation/Reference:

QUESTION 130
DRAG DROP

Drag and drop the network protocols from the left onto the correct transport services on the right.

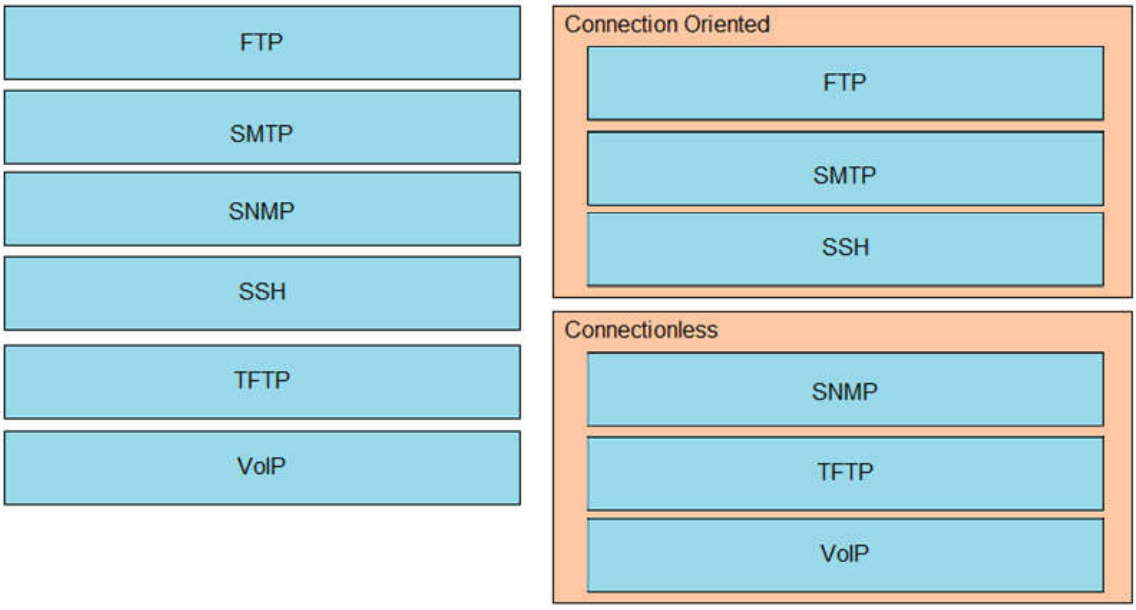
Select and Place:

Answer Area



Correct Answer:

Answer Area



Section: IP Services
Explanation

Explanation/Reference:

QUESTION 131

A network engineer must back up 20 network router configurations globally within a customer environment. Which protocol allows the engineer to perform this function using the Cisco IOS MIB?

A. ARP
B. SNMP
C. SMTP
D. CDP

Correct Answer: B
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 132
Which command enables a router to become a DHCP client?

A. **ip address dhcp**
B. **ip dhcp client**
C. **ip helper-address**
D. **ip dhcp pool**

Correct Answer: B
Section: IP Services
Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_dhcp/configuration/12-4/dhcp-12-4-book/config-dhcp-client.html

QUESTION 133
Which function does an SNMP agent perform?

A. It sends information about MIB variables in response to requests from the NMS
B. It manages routing between Layer 3 devices in a network
C. It coordinates user authentication between a network device and a TACACS+ or RADIUS server
D. It requests information from remote network nodes about catastrophic system events

Correct Answer: A
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 134
What are two roles of the Dynamic Host Configuration Protocol (DHCP)? (Choose two.)

A. The DHCP server assigns IP addresses without requiring the client to renew them.
B. The DHCP server leases client IP addresses dynamically.
C. The DHCP client can request up to four DNS server addresses.
D. The DHCP server offers the ability to exclude specific IP addresses from a pool of IP addresses.
E. The DHCP client maintains a pool of IP addresses it can assign.

Correct Answer: BD
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 135
Which command must be entered when a device is configured as an NTP server?

A. ntp peer
B. ntp master
C. ntp authenticate
D. ntp server

Correct Answer: B
Section: IP Services
Explanation

Explanation/Reference:

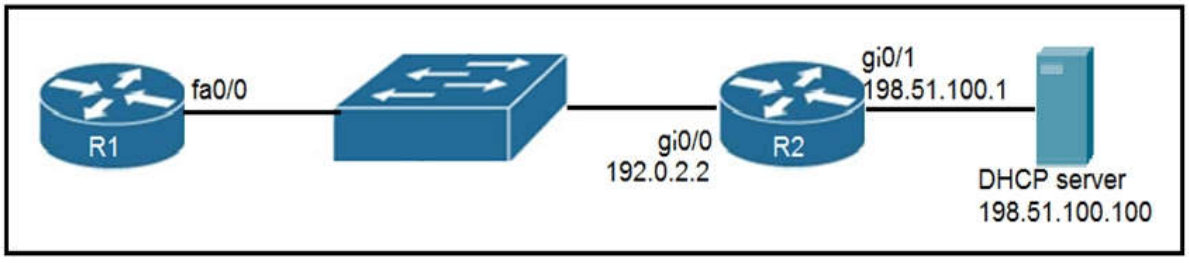
QUESTION 136
What event has occurred if a router sends a notice level message to a syslog server?

A. A certificate has expired
B. An interface line has changed status
C. A TCP connection has been torn down
D. An ICMP connection has been built

Correct Answer: B
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 137



Refer to the exhibit. An engineer deploys a topology in which R1 obtains its IP configuration from DHCP. If the switch and DHCP server configurations are complete and correct. Which two sets of commands must be configured on R1 and R2 to complete the task? (Choose two.)

A. R1(config)# interface fa0/0
R1(config-if)# ip helper-address 198.51.100.100
B. R2(config)# interface gi0/0

R2(config-if)# ip helper-address 198.51.100.100

C. R1(config)# interface fa0/0
R1(config-if)# ip address dhcp
R1(config-if)# no shutdown

D. R2(config)# interface gi0/0
R2(config-if)# ip address dhcp

E. R1(config)# interface fa0/0
R1(config-if)# ip helper-address 192.0.2.2

Correct Answer: BC
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 138
Which two actions are performed by the Weighted Random Early Detection mechanism? (Choose two.)

A. It supports protocol discovery.
B. It guarantees the delivery of high-priority packets.
C. It can identify different flows with a high level of granularity.
D. It can mitigate congestion by preventing the queue from filling up.
E. It drops lower-priority packets before it drops higher-priority packets.

Correct Answer: DE
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 139

```
R2#show ip nat translations
Pro  Inside global      Inside local     Outside local      Outside global
tcp  172.23.104.3:43268 10.4.4.4:43268   172.23.103.10:23   172.23.103.10:23
tcp  172.23.104.4:45507 10.4.4.5:45507   172.23.103.10:80   172.23.103.10:80
```

Refer to the exhibit. An engineer configured NAT translations and has verified that the configuration is correct. Which IP address is the source IP after the NAT has taken place?

A. 10.4.4.4
B. 10.4.4.5
C. 172.23.103.10
D. 172.23.104.4

Correct Answer: C
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 140

If a notice-level message is sent to a syslog server, which event has occurred?

A. A network device has restarted.
B. A debug operation is running.
C. A routing instance has flapped.
D. An ARP inspection has failed.

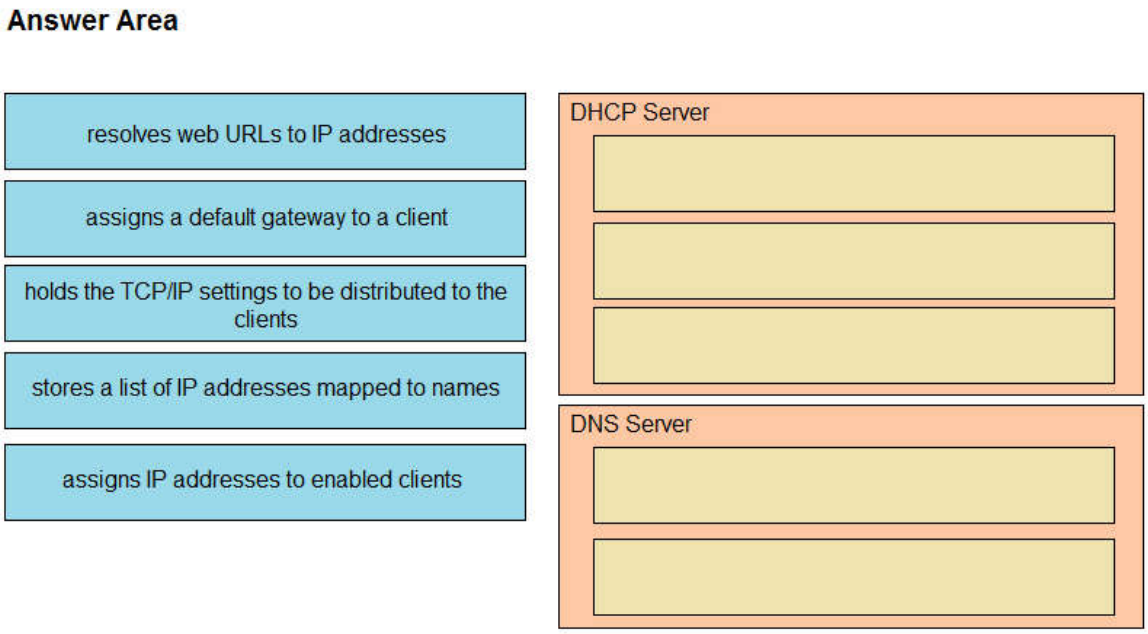
Correct Answer: C
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 141
DRAG DROP

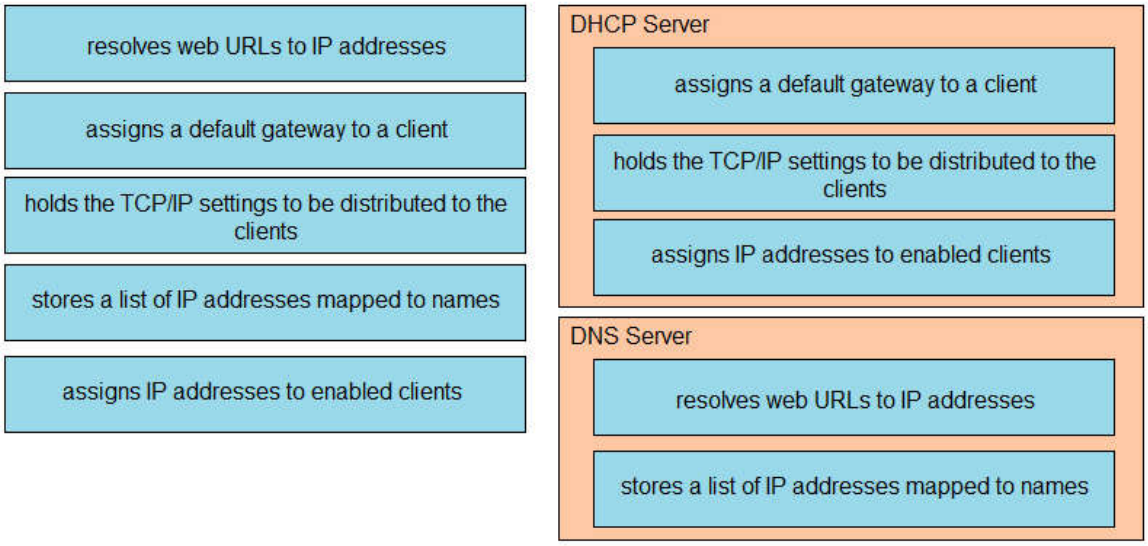
Drag and drop the functions from the left onto the correct network components on the right.

Select and Place:



Correct Answer:

Answer Area



Section: IP Services
Explanation

Explanation/Reference:

QUESTION 142
Which two tasks must be performed to configure NTP to a trusted server in client mode on a single network device? (Choose two.)

A. Enable NTP authentication.
B. Verify the time zone.
C. Specify the IP address of the NTP server.
D. Set the NTP server private key.
E. Disable NTP broadcasts.

Correct Answer: CD
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 143
What is the primary purpose of a First Hop Redundancy Protocol?

A. It allows directly connected neighbors to share configuration information
B. It reduces routing failures by allowing Layer 3 load balancing between OSPF neighbors that have the same link metric
C. It allows a router to use bridge priorities to create multiple loop-free paths to a single destination
D. It reduces routing failures by allowing more than one router to represent itself as the default gateway of a network

Correct Answer: D
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 144
An engineer is configuring NAT to translate the source subnet of 10.10.0.0/24 to any one of three addresses: 192.168.3.1, 192.168.3.2, or 192.168.3.3. Which configuration should be used?

A.
```
enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
access-list 1 permit 10.10.0.0 0.0.0.255
ip nat outside destination list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
```

B.
```
enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
access-list 1 permit 10.10.0.0 0.0.0.254
ip nat inside source list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
```

C.
```
enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
route-map permit 10.10.0.0 255.255.255.0
ip nat outside destination list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
```

D.
```
enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
access-list 1 permit 10.10.0.0 0.0.0.255
ip nat inside source list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
```

Correct Answer: D
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 145
When the active router in an HSRP group fails, what router assumes the role and forwards packets?

A. forwarding
B. listening
C. standby
D. backup

Correct Answer: C
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 146
What protocol allows an engineer to back up 20 network router configurations globally while using the **copy** function?

A. TCP
B. SMTP
C. FTP
D. SNMP

Correct Answer: D
Section: IP Services
Explanation

Explanation/Reference:

QUESTION 147

```
ip arp inspection vlan 2
interface fastethernet 0/1
        switchport mode access
        switchport access vlan 2
```

Refer to the exhibit. What is the effect of this configuration?

A. The switch port remains administratively down until the interface is connected to another switch.
B. Dynamic ARP Inspection is disabled because the ARP ACL is missing.
C. The switch port interface trust state becomes untrusted.
D. The switch port remains down until it is configured to trust or untrust incoming packets.

Correct Answer: C
Section: Security Fundamentals

Explanation

Explanation/Reference:

QUESTION 148
What is the primary difference between AAA authentication and authorization?

A. Authentication identifies and verifies a user who is attempting to access a system, and authorization controls the tasks the user can perform.
B. Authentication controls the system processes a user can access, and authorization logs the activities the user initiates.
C. Authentication verifies a username and password, and authorization handles the communication between the authentication agent and the user database.
D. Authentication identifies a user who is attempting to access a system, and authorization validates the user's password.

Correct Answer: A
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 149
When configuring a WLAN with WPA2 PSK in the Cisco Wireless LAN Controller GUI, which two formats are available to select? (Choose two.)

A. decimal
B. ASCII
C. hexadecimal
D. binary
E. base64

Correct Answer: BC
Section: Security Fundamentals
Explanation

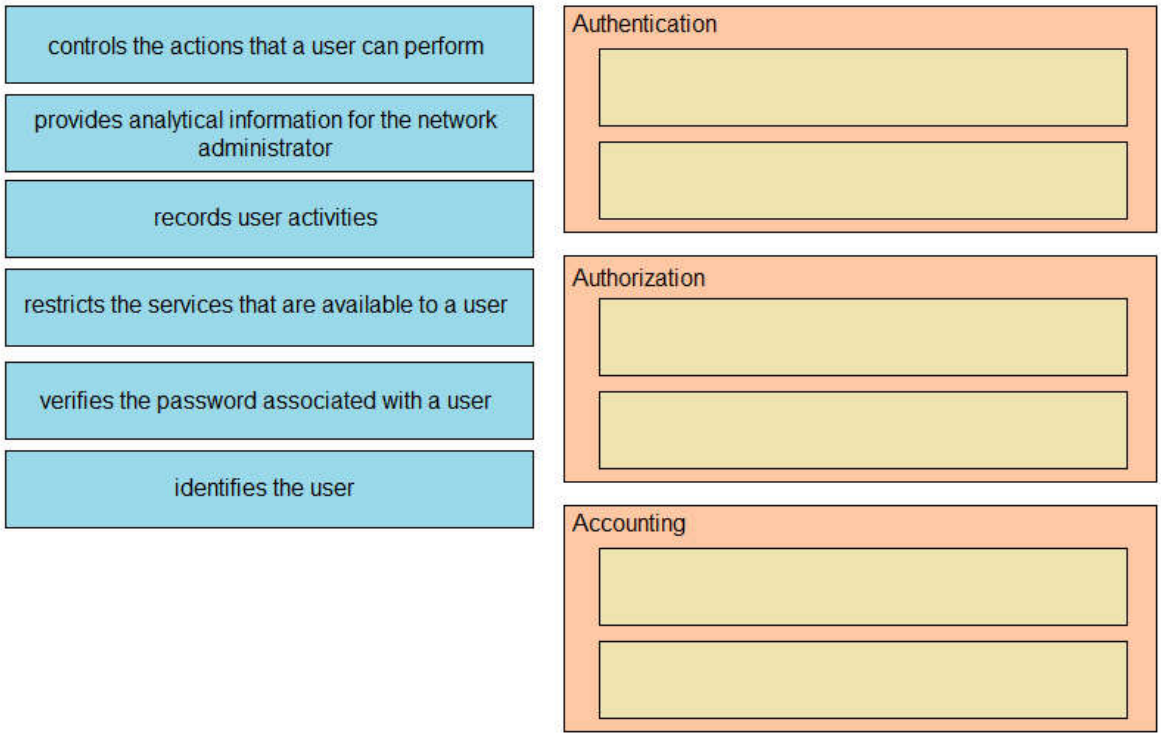
Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/td/docs/wireless/controller/7-4/configuration/guides/consolidated/b_cg74_CONSOLIDATED/b_cg74_CONSOLIDATED_chapter_01010001.html

QUESTION 150
DRAG DROP

Drag and drop the AAA functions from the left onto the correct AAA services on the right.

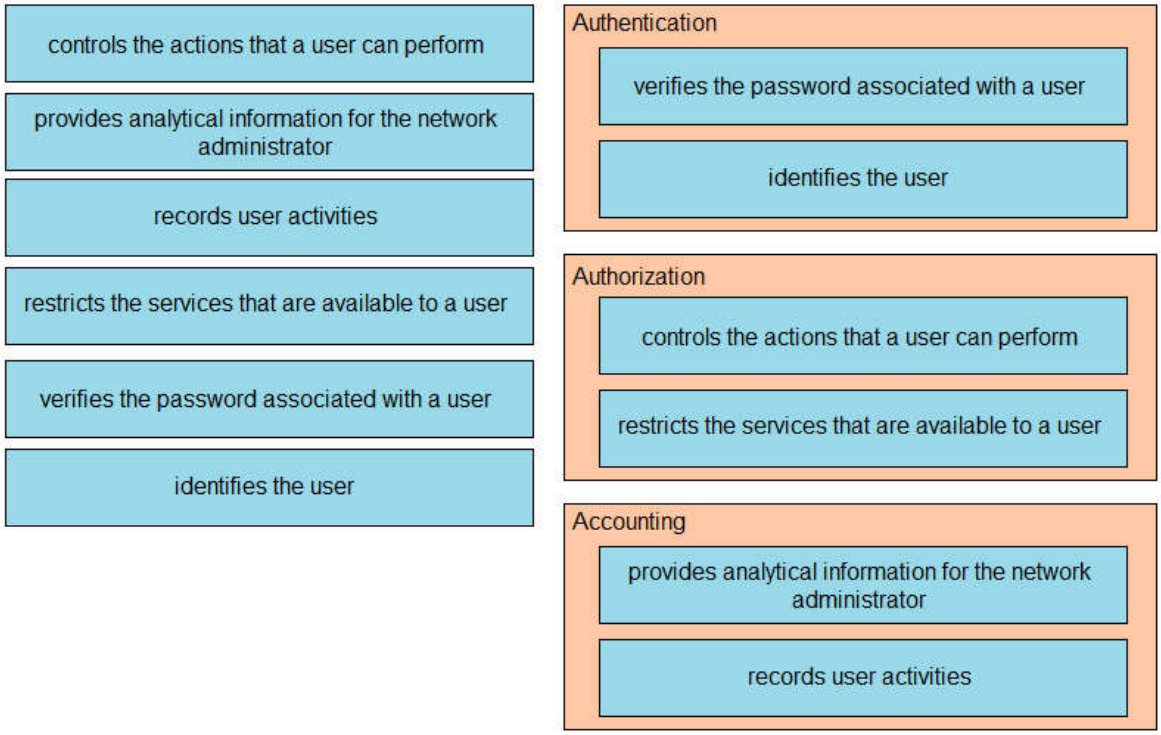
Select and Place:

Answer Area



Correct Answer:

Answer Area



Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 151
An engineer is asked to protect unused ports that are configured in the default VLAN on a switch. Which two steps will fulfill the request? (Choose two.)

A. Configure the ports as trunk ports.
B. Enable the Cisco Discovery Protocol.
C. Configure the port type as access and place in VLAN 99.
D. Administratively shut down the ports.
E. Configure the ports in an EtherChannel.

Correct Answer: CD
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 152
An email user has been lured into clicking a link in an email sent by their company's security organization. The webpage that opens reports that it was safe, but the link could have contained malicious code.

Which type of security program is in place?

A. user awareness
B. brute force attack
C. physical access control
D. social engineering attack

Correct Answer: A
Section: Security Fundamentals
Explanation

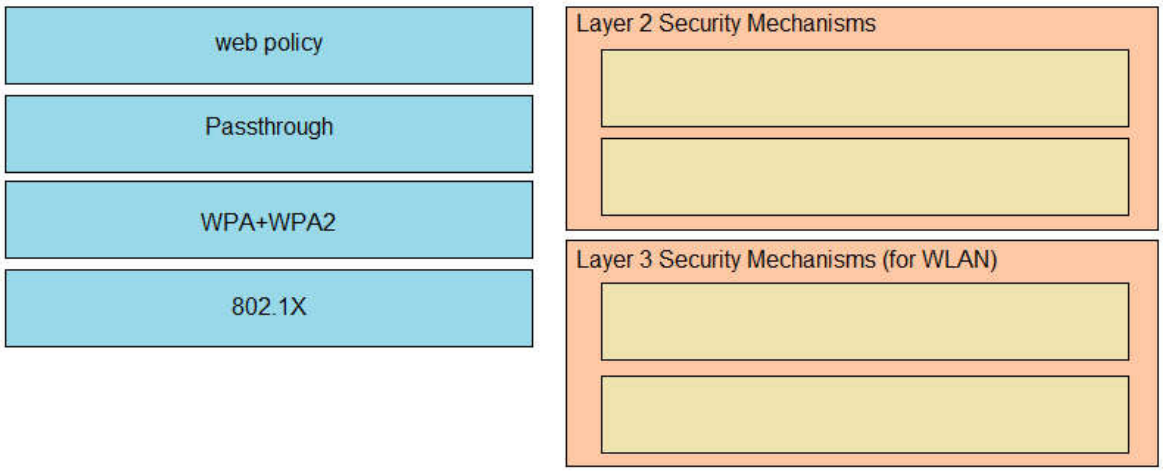
Explanation/Reference:

QUESTION 153
DRAG DROP

Drag and drop the Cisco Wireless LAN Controller security settings from the left onto the correct security mechanism categories on the right.

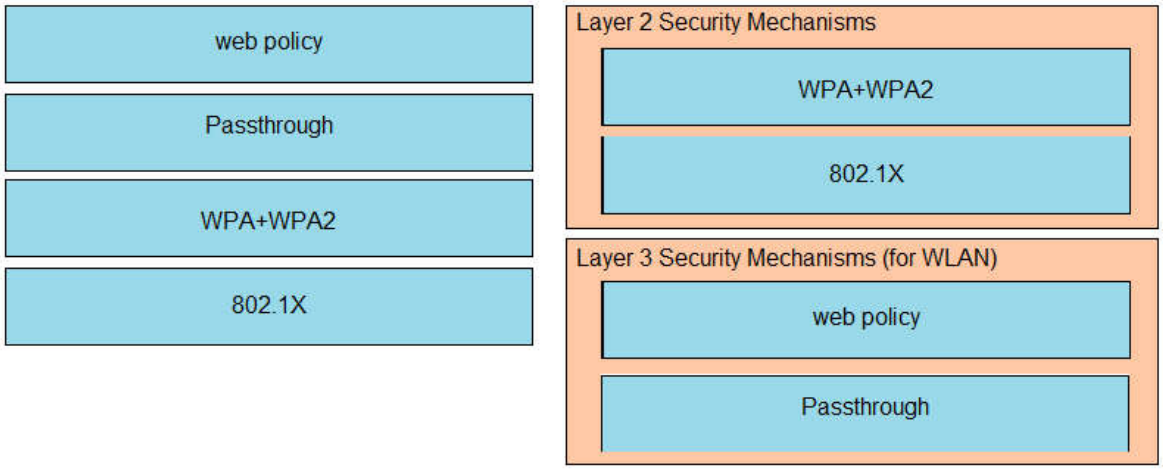
Select and Place:

Answer Area



Correct Answer:

Answer Area



Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 154
Which feature on the Cisco Wireless LAN Controller when enabled restricts management access from specific networks?

A. TACACS
B. CPU ACL
C. Flex ACL
D. RADIUS

Correct Answer: B
Section: Security Fundamentals
Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/support/docs/wireless-mobility/wlan-security/71978-acl-wlc.html

QUESTION 155
Which set of actions satisfy the requirement for multifactor authentication?

A. The user enters a user name and password, and then re-enters the credentials on a second screen.
B. The user swipes a key fob, then clicks through an email link.
C. The user enters a user name and password, and then clicks a notification in an authentication app on a mobile device.
D. The user enters a PIN into an RSA token, and then enters the displayed RSA key on a login screen.

Correct Answer: C
Section: Security Fundamentals
Explanation

Explanation/Reference:

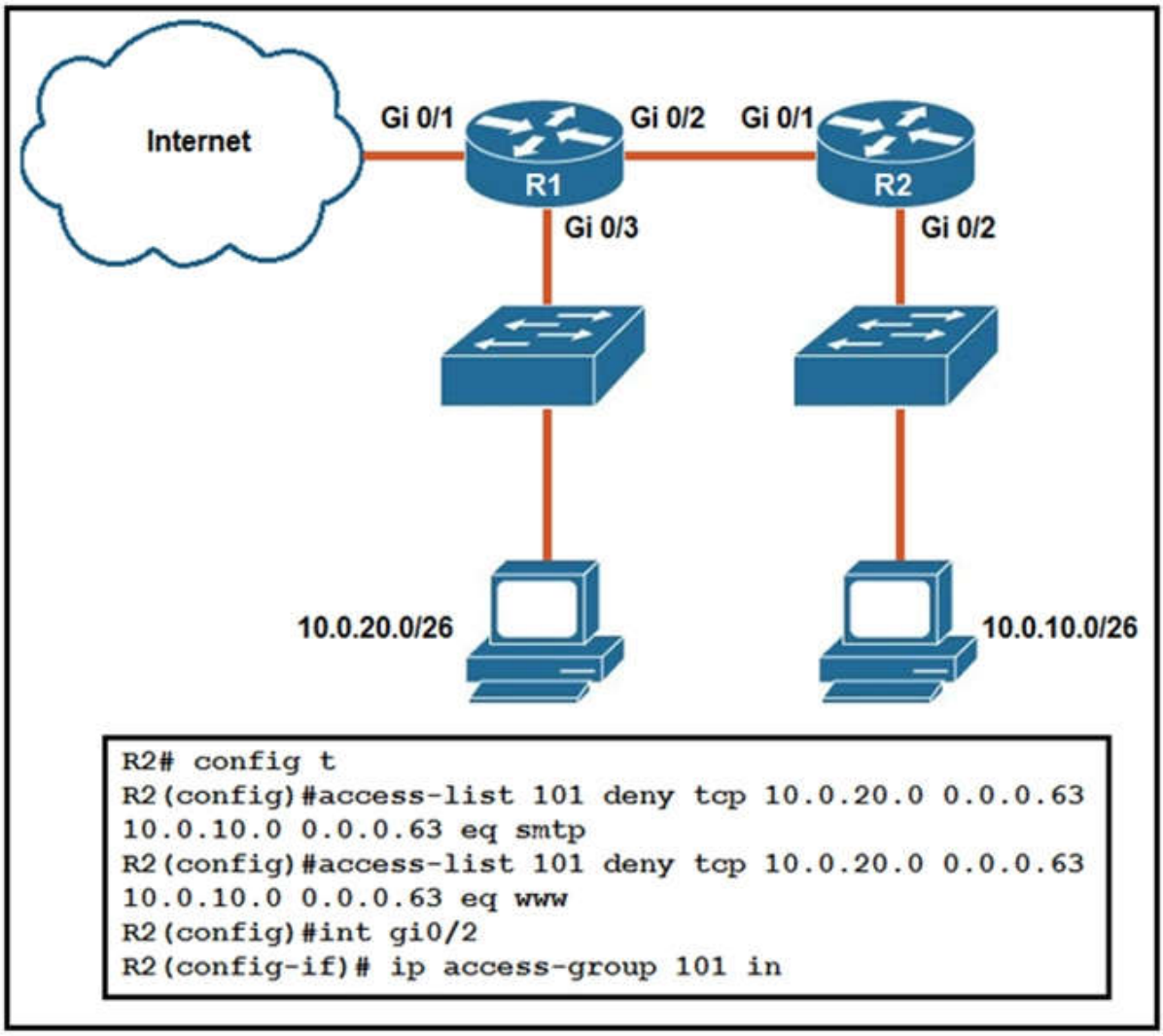
QUESTION 156
Which configuration is needed to generate an RSA key for SSH on a router?

A. Configure VTY access.
B. Configure the version of SSH.
C. Assign a DNS domain name.
D. Create a user with a password.

Correct Answer: C
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 157



Refer to the exhibit. An extended ACL has been configured and applied to router R2. The configuration failed to work as intended.

Which two changes stop outbound traffic on TCP ports 25 and 80 to 10.0.20.0/26 from the 10.0.10.0/26 subnet while still allowing all other traffic? (Choose two.)

A. Add a “permit ip any any” statement at the end of ACL 101 for allowed traffic.
B. Add a “permit ip any any” statement to the beginning of ACL 101 for allowed traffic.
C. The ACL must be moved to the Gi0/1 interface outbound on R2.
D. The source and destination IPs must be swapped in ACL 101.
E. The ACL must be configured the Gi0/2 interface inbound on R1.

Correct Answer: AD
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 158
An engineer must configure a WLAN using the strongest encryption type for WPA2-PSK. Which cipher fulfills

the configuration requirement?

A. WEP
B. AES
C. RC4
D. TKIP

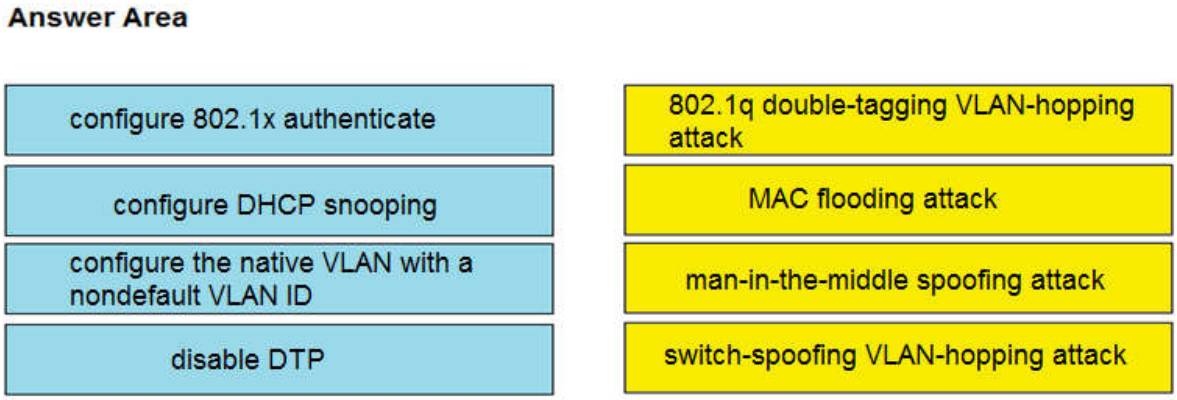
Correct Answer: B
Section: Security Fundamentals
Explanation

Explanation/Reference:

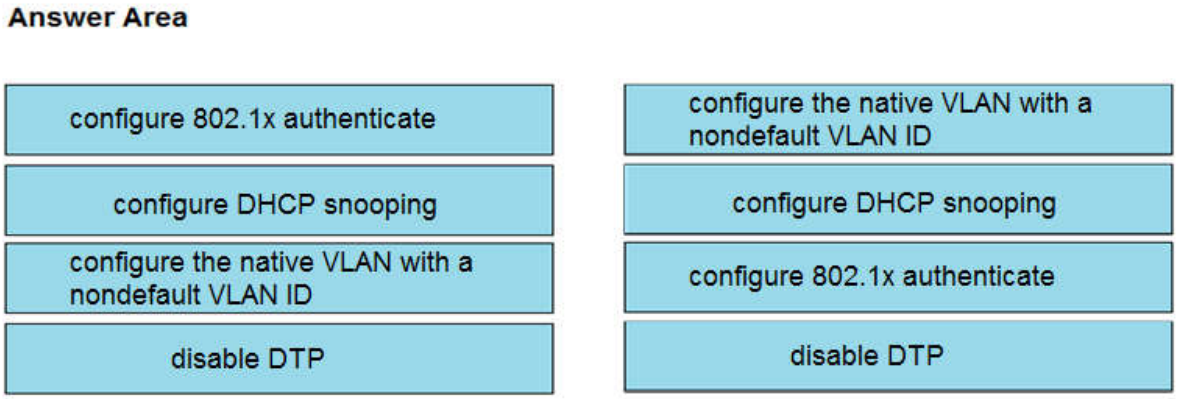
QUESTION 159
DRAG DROP

Drag and drop the attack-mitigation techniques from the left onto the types of attack that they mitigate on the right.

Select and Place:



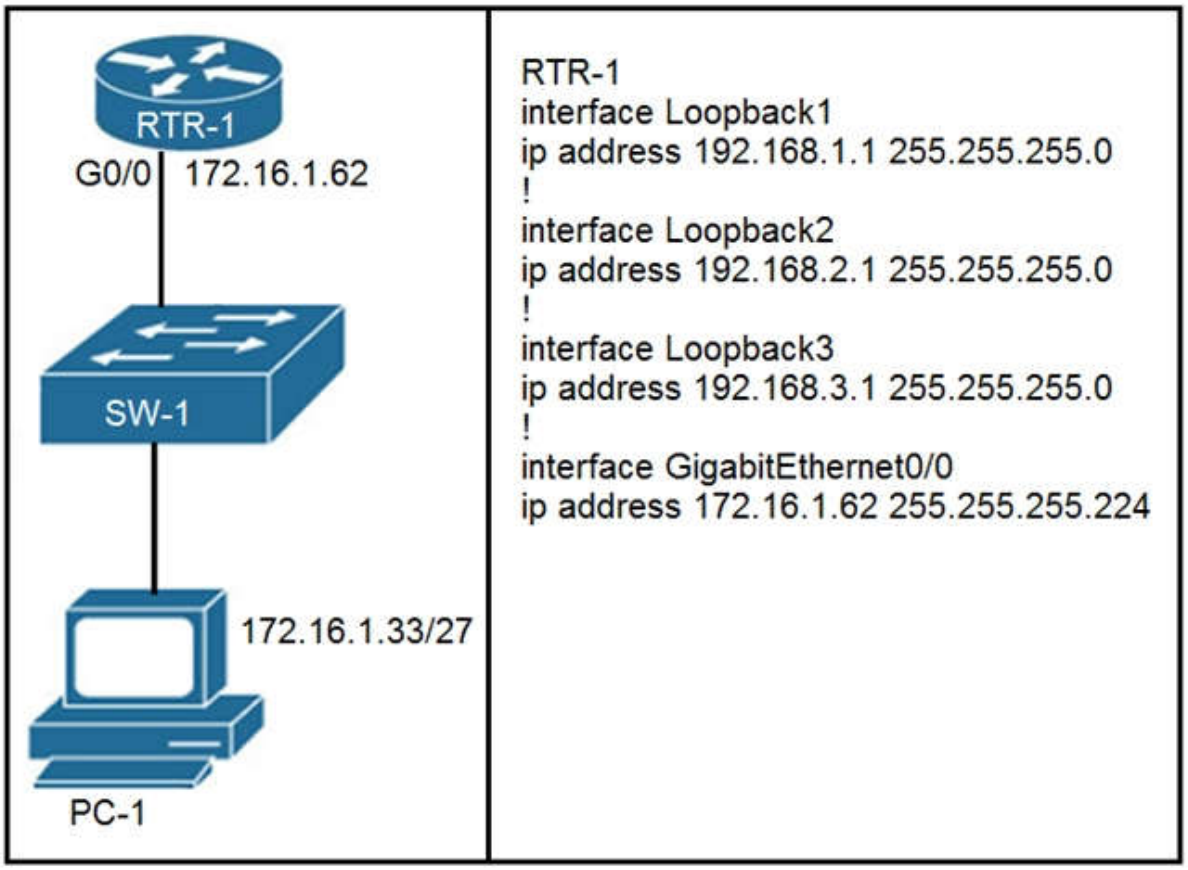
Correct Answer:



Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 160
Refer to the exhibit. What configuration on RTR-1 denies SSH access from PC-1 to any RTR-1 interface and allows all other traffic?



A.
```
access-list 100 deny tcp host 172.16.1.33 any eq 22
access-list 100 permit ip any any

interface GigabitEthernet0/0
ip access-group 100 in
```

B.
```
access-list 100 deny tcp host 172.16.1.33 any eq 22
access-list 100 permit ip any any

line vty 0 15
access-class 100 in
```

C.
```
access-list 100 deny tcp host 172.16.1.33 any eq 23
access-list 100 permit ip any any

interface GigabitEthernet0/0
ip access-group 100 in
```

D.
```
access-list 100 deny tcp host 172.16.1.33 any eq 23
access-list 100 permit ip any any

line vty 0 15
access-class 100 in
```

Correct Answer: B
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 161
While examining excessive traffic on the network, it is noted that all incoming packets on an interface appear to be allowed even though an IPv4 ACL is applied to the interface. Which two misconfigurations cause this behavior? (Choose two.)

A. The ACL is empty
B. A matching **permit** statement is too broadly defined
C. The packets fail to match any **permit** statement
D. A matching **deny** statement is too high in the access list
E. A matching **permit** statement is too high in the access list

Correct Answer: BE
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 162
The **service password-encryption** command is entered on a router. What is the effect of this configuration?

A. restricts unauthorized users from viewing clear-text passwords in the running configuration
B. prevents network administrators from configuring clear-text passwords
C. protects the VLAN database from unauthorized PC connections on the switch
D. encrypts the password exchange when a VPN tunnel is established

Correct Answer: A
Section: Security Fundamentals
Explanation

Explanation/Reference:

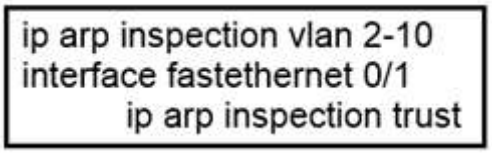
QUESTION 163
Which WPA3 enhancement protects against hackers viewing traffic on the Wi-Fi network?

A. SAE encryption
B. TKIP encryption
C. scrambled encryption key
D. AES encryption

Correct Answer: A
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 164
Refer to the exhibit. If the network environment is operating normally, which type of device must be connected to interface FastEthernet 0/1?



A. DHCP client
B. access point
C. router
D. PC

Correct Answer: D
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 165
Refer to the exhibit. An administrator configures four switches for local authentication using passwords that are stored as a cryptographic hash. The four switches must also support SSH access for administrators to manage the network infrastructure. Which switch is configured correctly to meet these requirements?

```
SW1(config-line) #line vty 0 15
SW1(config-line) #no login local
SW1(config-line) #password cisco

SW2(config) #username admin1 password abcd1234
SW2(config) #username admin2 password abcd1234
SW2(config-line) #line vty 0 15
SW2(config-line) #login local

SW3(config) #username admin1 secret abcd1234
SW3(config) #username admin2 secret abcd1234
SW3(config-line) #line vty 0 15
SW3(config-line) #login local

SW4(config) #username admin1 secret abcd1234
SW4(config) #username admin2 secret abcd1234
SW4(config-line) #line console 0
SW4(config-line) #login local
```

A. SW1
B. SW2
C. SW3
D. SW4

Correct Answer: C
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 166

```
ip arp inspection vlan 5-10
interface fastethernet 0/1
   switchport mode access
   switchport access vlan 5
```

Refer to the exhibit. What is the effect of this configuration?

A. The switch discards all ingress ARP traffic with invalid MAC-to-IP address bindings.
B. All ARP packets are dropped by the switch.
C. Egress traffic is passed only if the destination is a DHCP server.
D. All ingress and egress traffic is dropped because the interface is untrusted.

Correct Answer: A
Section: Security Fundamentals

Explanation

Explanation/Reference:

QUESTION 167
When a site-to-site VPN is used, which protocol is responsible for the transport of user data?

A. IPsec
B. IKEv1
C. MD5
D. IKEv2

Correct Answer: A
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 168
Which type of wireless encryption is used for WPA2 in preshared key mode?

A. AES-128
B. TKIP with RC4
C. AES-256
D. RC4

Correct Answer: C
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 169
DRAG DROP

Drag and drop the threat-mitigation techniques from the left onto the types of threat or attack they mitigate on the right.

Select and Place:

Answer Area

Configure BPDU guard.	802.1q double tagging
Configure dynamic ARP inspection.	ARP spoofing
Configure root guard.	unwanted superior BPDUs
Configure VACL.	unwanted BPDUs on PortFast-enabled interfaces

Correct Answer:

Answer Area

Configure BPDU guard.	Configure VACL.
Configure dynamic ARP inspection.	Configure dynamic ARP inspection.
Configure root guard.	Configure root guard.
Configure VACL.	Configure BPDU guard.

Section: Security Fundamentals
Explanation

Explanation/Reference:

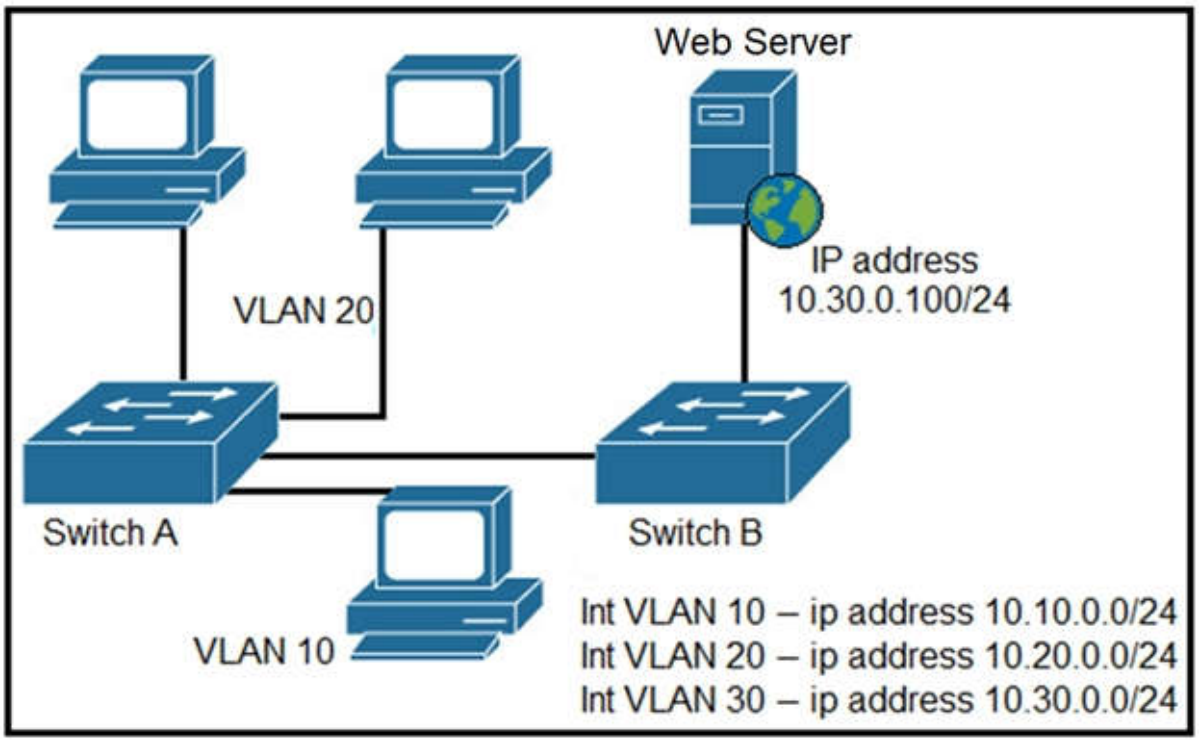
QUESTION 170
Which command prevents passwords from being stored in the configuration as plain text on a router or switch?

A. **enable secret**
B. **enable password**
C. **service password-encryption**
D. **username cisco password encrypt**

Correct Answer: C
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 171



Refer to the exhibit. A network engineer must block access for all computers on VLAN 20 to the web server via HTTP. All other computers must be able to access the web server. Which configuration when applied to switch A accomplishes the task?

A.
```
config t
ip access-list extended wwwblock
permit ip any any
deny tcp any host 10.30.0.100 eq 80
int vlan 20
ip access-group wwwblock in
```

B.
```
config t
ip access-list extended wwwblock
permit ip any any
deny tcp any host 10.30.0.100 eq 80
int vlan 30
ip access-group wwwblock in
```

C.
```
config t
ip access-list extended wwwblock
deny tcp any host 10.30.0.100 eq 80
int vlan 10
ip access-group wwwblock in
```

D.
```
config t
ip access-list extended wwwblock
deny tcp any host 10.30.0.100 eq 80
permit ip any any
int vlan 20
ip access-group wwwblock in
```

Correct Answer: D
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 172
In which two ways does a password manager reduce the chance of a hacker stealing a user's password? (Choose two.)

A. It encourages users to create stronger passwords
B. It uses an internal firewall to protect the password repository from unauthorized access
C. It stores the password repository on the local workstation with built-in antivirus and anti-malware functionality
D. It automatically provides a second authentication factor that is unknown to the original user
E. It protects against keystroke logging on a compromised device or web site

Correct Answer: AE
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 173
Which goal is achieved by the implementation of private IPv4 addressing on a network?

A. provides an added level of protection against Internet exposure
B. provides a reduction in size of the forwarding table on network routers
C. allows communication across the Internet to other private networks
D. allows servers and workstations to communicate across public network boundaries

Correct Answer: A
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 174
Which type of attack is mitigated by dynamic ARP inspection?

A. DDoS
B. malware
C. man-in-the-middle

D. worm

Correct Answer: C
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 175
When a WPA2-PSK WLAN is configured in the Wireless LAN Controller, what is the minimum number of characters that is required in ASCII format?

A. 6
B. 8
C. 12
D. 18

Correct Answer: B
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 176
What mechanism carries multicast traffic between remote sites and supports encryption?

A. ISATAP
B. IPsec over ISATAP
C. GRE
D. GRE over IPsec

Correct Answer: D
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 177
An organization secures its network with multi-factor authentication using an authenticator app on employee smartphones. How is the application secured in the case of a user's smartphone being lost or stolen?

A. The application requires the user to enter a PIN before it provides the second factor
B. The application requires an administrator password to reactivate after a configured interval
C. The application verifies that the user is in a specific location before it provides the second factor
D. The application challenges a user by requiring an administrator password to reactivate when the smartphone is rebooted

Correct Answer: A
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 178
Which device performs stateful inspection of traffic?

A. switch
B. firewall
C. access point
D. wireless controller

Correct Answer: B
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 179
A network administrator enabled port security on a switch interface connected to a printer. What is the next configuration action in order to allow the port to learn the MAC address of the printer and insert it into the table automatically?

A. enable dynamic MAC address learning
B. implement static MAC addressing
C. enable sticky MAC addressing
D. implement auto MAC address learning

Correct Answer: C
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 180

```
Switch(config)#hostname R1
R1(config)#interface FastEthernet0/1
R1(config-if)#no switchport
R1(config-if)#ip address 10.100.20.42 255.255.255.0
R1(config-if)#line vty 0 4
R1(config-line)#login
```

Refer to the exhibit. An engineer booted a new switch and applied this configuration via the console port. Which additional configuration must be applied to allow administrators to authenticate directly to enable privilege mode via Telnet using a local username and password?

A.
```
R1(config)#username admin
R1(config-if)#line vty 0 4
R1(config-line)#password p@ss1234
R1(config-line)#transport input telnet
```

B.
```
R1(config)#username admin privilege 15 secret p@ss1234
R1(config-if)#line vty 0 4
R1(config-line)#login local
```

C.
```
R1(config)#username admin secret p@ss1234
R1(config-if)#line vty 0 4
R1(config-line)#login local
R1(config)#enable secret p@ss1234
```

D.
```
R1(config)#username admin
R1(config-if)#line vty 0 4
R1(config-line)#password p@ss1234
```

Correct Answer: B
Section: Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 181
What are two southbound APIs? (Choose two.)

A. Thrift
B. DSC
C. CORBA
D. NETCONF
E. OpenFlow

Correct Answer: DE
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 182
What makes Cisco DNA Center different from traditional network management applications and their management of networks?

A. Its modular design allows someone to implement different versions to meet the specific needs of an organization.
B. It only supports auto-discovery of network elements in a greenfield deployment.
C. It does not support high availability of management functions when operating in cluster mode.
D. It abstracts policy from the actual device configuration.

Correct Answer: D
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 183
Which API is used in controller-based architectures to interact with edge devices?

A. southbound
B. overlay
C. northbound
D. underlay

Correct Answer: A
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 184
An organization has decided to start using cloud-provided services. Which cloud service allows the organization to install its own operating system on a virtual machine?

A. platform-as-a-service
B. network-as-a-service
C. software-as-a-service
D. infrastructure-as-a-service

Correct Answer: D
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 185
How do traditional campus device management and Cisco DNA Center device management differ in regards to deployment?

A. Traditional campus device management allows a network to scale more quickly than with Cisco DNA Center device management.
B. Cisco DNA Center device management can deploy a network more quickly than traditional campus device management.
C. Cisco DNA Center device management can be implemented at a lower cost than most traditional campus device management options.
D. Traditional campus device management schemes can typically deploy patches and updates more quickly than Cisco DNA Center device management.

Correct Answer: B
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 186
Which purpose does a northbound API serve in a controller-based networking architecture?

A. facilitates communication between the controller and the applications

B. reports device errors to a controller
C. generates statistics for network hardware and traffic
D. communicates between the controller and the physical network hardware

Correct Answer: A
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 187
What benefit does controller-based networking provide versus traditional networking?

A. allows configuration and monitoring of the network from one centralized point
B. provides an added layer of security to protect from DDoS attacks
C. combines control and data plane functionality on a single device to minimize latency
D. moves from a two-tier to a three-tier network architecture to provide maximum redundancy

Correct Answer: A
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 188
What is an advantage of Cisco DNA Center versus traditional campus device management?

A. It is designed primarily to provide network assurance.
B. It supports numerous extensibility options, including cross-domain adapters and third-party SDKs.
C. It supports high availability for management functions when operating in cluster mode.
D. It enables easy autodiscovery of network elements in a brownfield deployment.

Correct Answer: B
Section: Automation and Programmability
Explanation

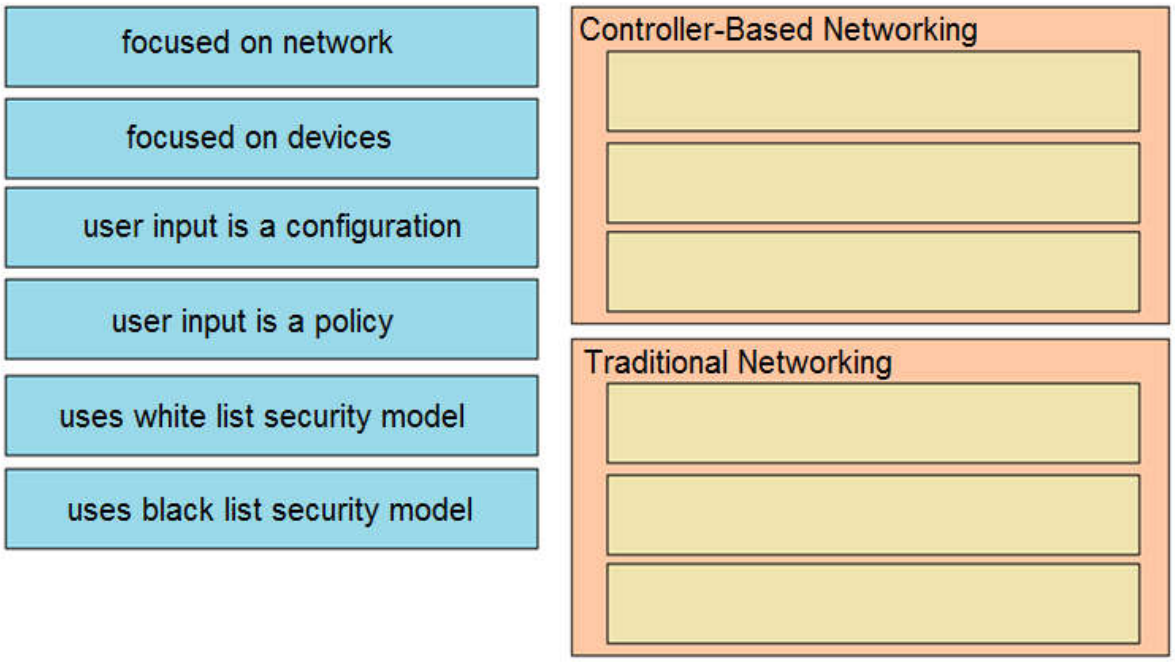
Explanation/Reference:

QUESTION 189
DRAG DROP

Drag and drop the characteristics of networking from the left onto the correct networking types on the right.

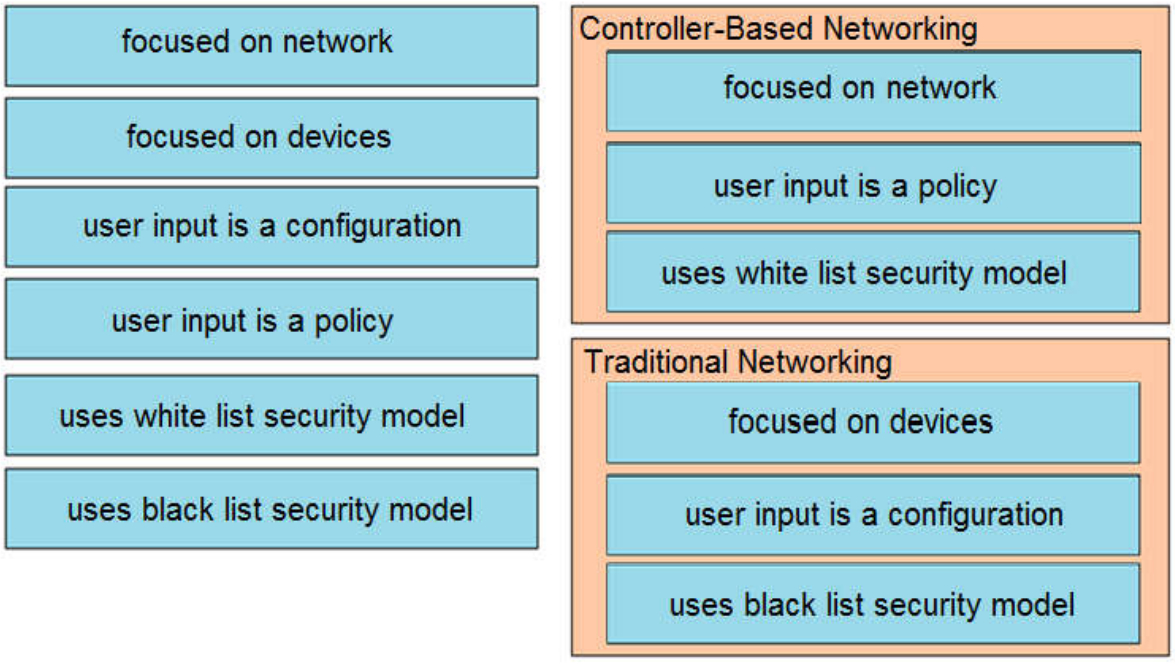
Select and Place:

Answer Area



Correct Answer:

Answer Area



Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 190
What are two fundamentals of virtualization? (Choose two.)

A. It allows logical network devices to move traffic between virtual machines and the rest of the physical network.
B. It allows multiple operating systems and applications to run independently on one physical server.
C. It allows a physical router to directly connect NICs from each virtual machine into the network.
D. It requires that some servers, virtual machines, and network gear reside on the Internet.
E. The environment must be configured with one hypervisor that serves solely as a network manager to monitor SNMP traffic.

Correct Answer: AB
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 191
How does Cisco DNA Center gather data from the network?

A. Devices use the call-home protocol to periodically send data to the controller
B. Devices establish an IPsec tunnel to exchange data with the controller
C. The Cisco CLI Analyzer tool gathers data from each licensed network device and streams it to the controller
D. Network devices use different services like SNMP, syslog, and streaming telemetry to send data to the controller

Correct Answer: D
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 192
Which statement correctly compares traditional networks and controller-based networks?

A. Only controller-based networks decouple the control plane and the data plane.
B. Traditional and controller-based networks abstract policies from device configurations.
C. Only traditional networks natively support centralized management.
D. Only traditional networks offer a centralized control plane.

Correct Answer: A
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 193
What are two benefits of network automation? (Choose two.)

A. reduced hardware footprint

B. reduced operational costs
C. faster changes with more reliable results
D. fewer network failures
E. increased network security

Correct Answer: BC
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 194
Which two encoding methods are supported by REST APIs? (Choose two.)

A. SGML
B. YAML
C. XML
D. JSON
E. EBCDIC

Correct Answer: CD
Section: Automation and Programmability
Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus1000/sw/5_x/rest_api_config/b_Cisco_N1KV_VMware_REST_API_Config_5x/b_Cisco_N1KV_VMware_REST_API_Config_5x_chapter_010.pdf

QUESTION 195
What are two characteristics of a controller-based network? (Choose two.)

A. It uses Telnet to report system issues.
B. The administrator can make configuration updates from the CLI.
C. It uses northbound and southbound APIs to communicate between architectural layers.
D. It decentralizes the control plane, which allows each device to make its own forwarding decisions.
E. It moves the control plane to a central point.

Correct Answer: CE
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 196
Which output displays a JSON data representation?

A.
```
{
  "response": {
  "taskId": {};
  "url": "string"
  };
  "version": "string"
}
```

B.
```
{
  "response"- {
  "taskId"- {},
  "url"- "string"
  },
  "version"- "string"
}
```

C.
```
{
  "response": {
  "taskId": {},
  "url": "string"
  },
  "version": "string"
}
```

D.
```
{
  "response", {
  "taskId", {};
  "url", "string"
  };
  "version", "string"
}
```

Correct Answer: C
Section: Automation and Programmability
Explanation

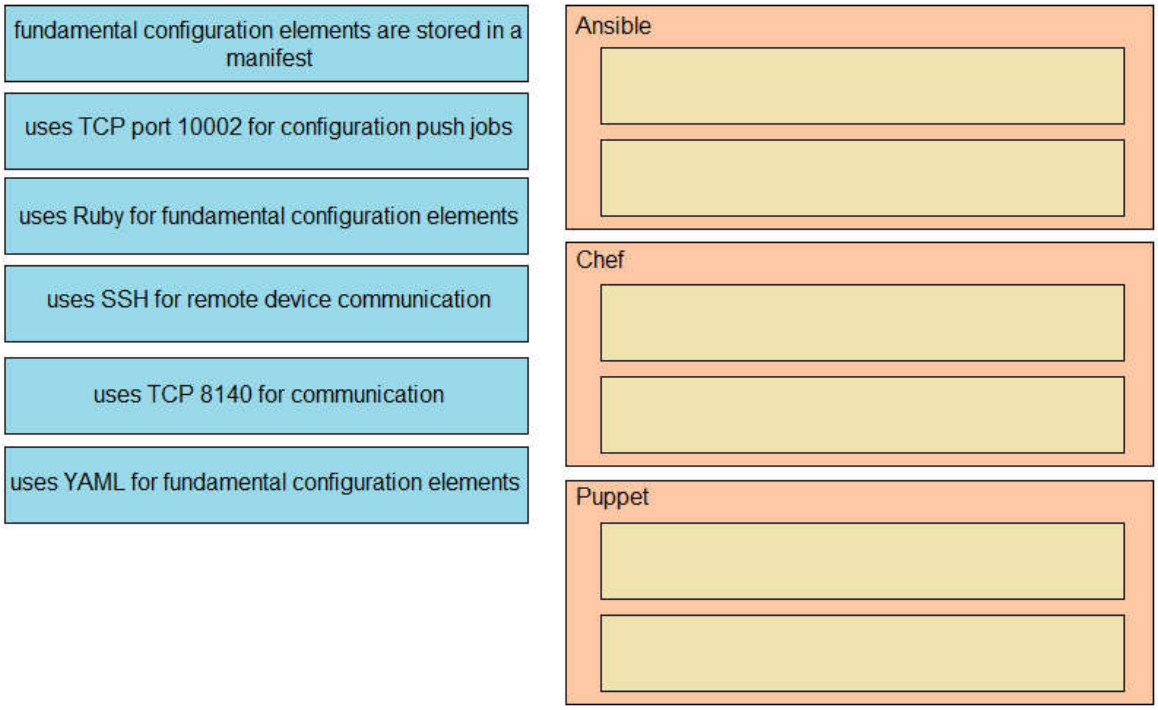
Explanation/Reference:

QUESTION 197
DRAG DROP

Drag and drop the descriptions from the left onto the correct configuration-management technologies on the right.

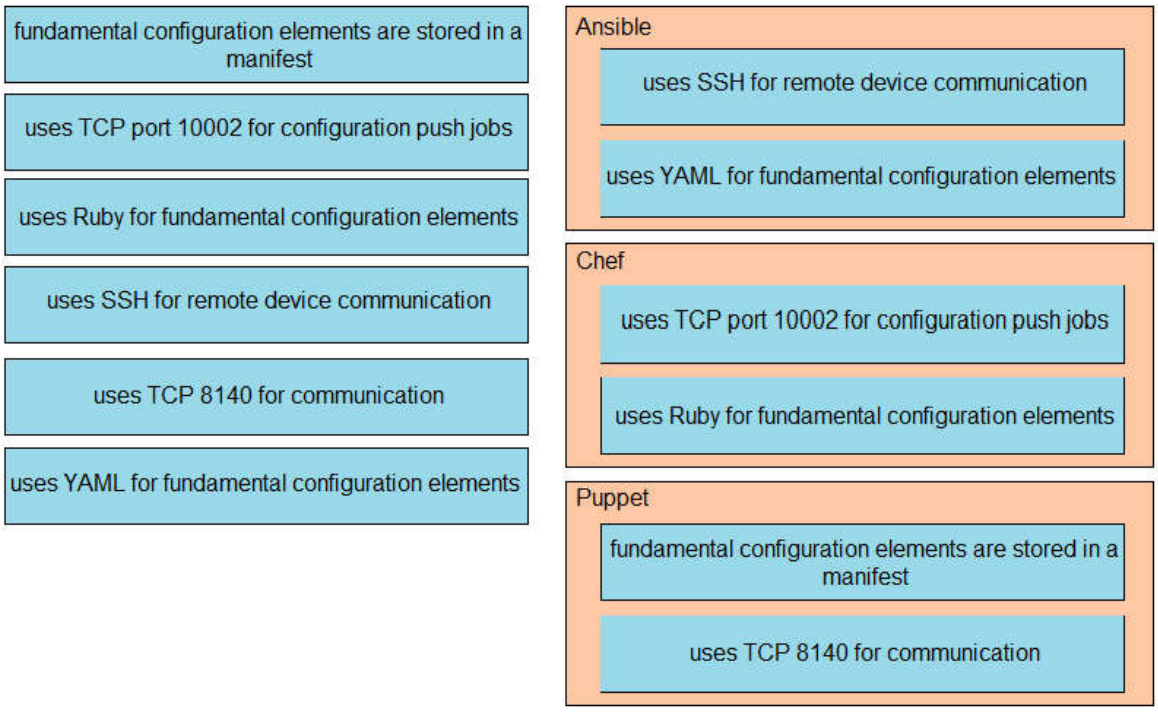
Select and Place:

Answer Area



Correct Answer:

Answer Area



Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 198
Which two capabilities of Cisco DNA Center make it more extensible? (Choose two.)

A. REST APIs that allow for external applications to interact natively with Cisco DNA Center
B. adapters that support all families of Cisco IOS software
C. SDKs that support interaction with third-party network equipment
D. modular design that is upgradable as needed
E. customized versions for small, medium, and large enterprises

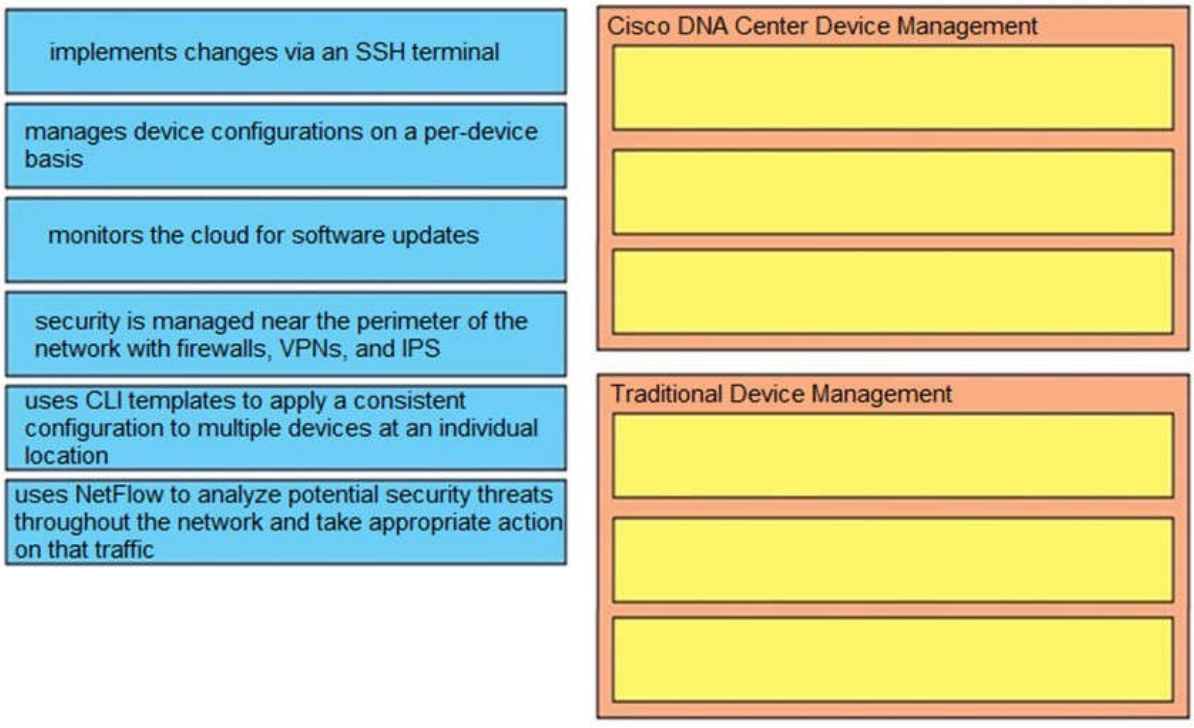
Correct Answer: AC
Section: Automation and Programmability
Explanation

Explanation/Reference:

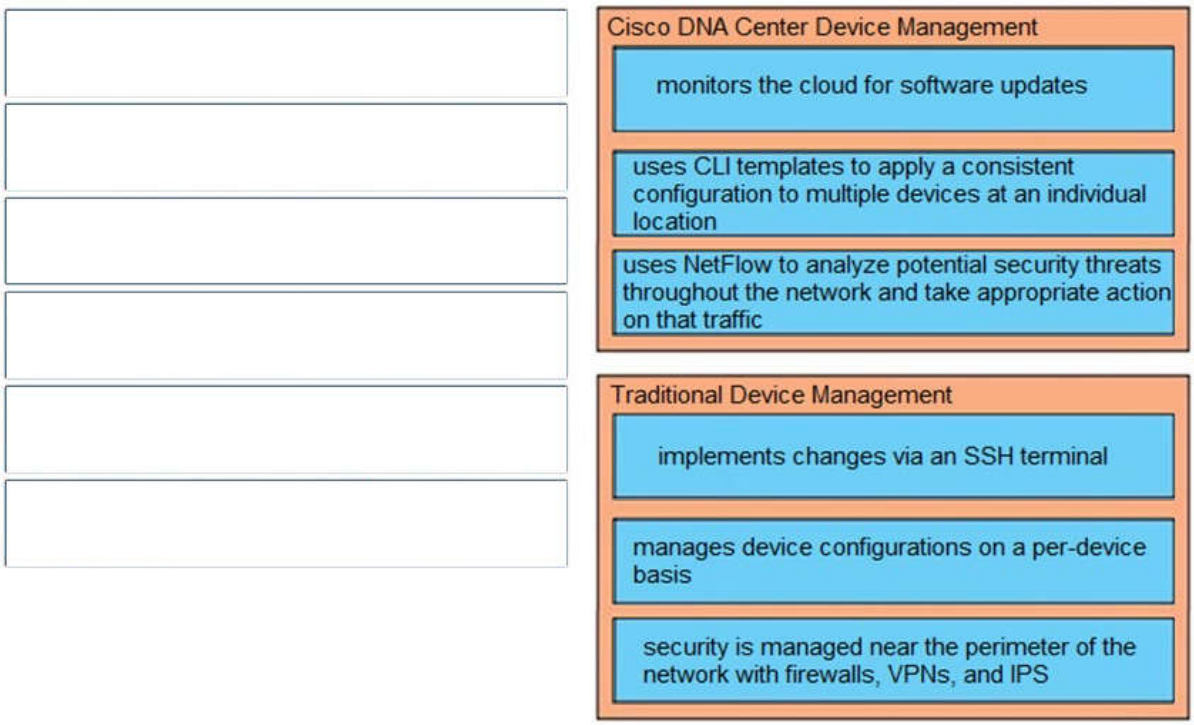
QUESTION 199
DRAG DROP

Drag the descriptions of device management from the left onto the types of device management on the right.

Select and Place:



Correct Answer:



Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 200
What software defined architecture plane assists network devices with making packet-forwarding decisions by providing Layer 2 reachability and Layer 3 routing information?

A. management plane
B. control plane
C. data plane
D. policy plane

Correct Answer: B
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 201
What are two benefits of controller-based networking compared to traditional networking? (Choose two.)

A. controller-based increases network bandwidth usage, while traditional lightens the load on the network
B. controller-based reduces network configuration complexity, while traditional increases the potential for errors
C. controller-based allows for fewer network failures, while traditional increases failure rates
D. controller-based provides centralization of key IT functions, while traditional requires distributed management functions

E. controller-based inflates software costs, while traditional decreases individual licensing costs

Correct Answer: BD
Section: Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 202
Which type of API allows SDN controllers to dynamically make changes to the network?

A. northbound API
B. REST API
C. SOAP API
D. southbound API

Correct Answer: D
Section: Automation and Programmability
Explanation

Explanation/Reference: