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CCNA 200-301 Dumps

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Sections

1. 1. Network Fundamentals
2. 2. Network Access
3. 3. IP Connectivity
4. 4. IP Services
5. 5. Security Fundamentals
6. 6. Automation and Programmability
7. Not categorized

Multiple Choice

QUESTION 1
What are two benefits of network automation? (Choose two)

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

Correct Answer: AC
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 2
Which command enables a router to become a DHCP client?

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

Correct Answer: A
Section: 4. IP Services
Explanation

Explanation/Reference:
If we want to get an IP address from the DHCP server on a Cisco device, we can use the command "ip address dhcp".
Note: The command "ip helper-address" enables a router to become a DHCP Relay Agent.
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 3
Which design element is a best practice when deploying an 802.11b wireless infrastructure?

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

Correct Answer: C
Section: 2. Network Access
Explanation

Explanation/Reference:

QUESTION 4
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: 1. Network Fundamentals
Explanation

Explanation/Reference:
When an interface is configured with IPv6 address, it automatically joins the all nodes (FF02::1) and solicited-node (FF02::1:FFxx:xxxx) multicast groups. The all-node group is used to communicate with all interfaces on the local link, and the solicited-nodes multicast group is required for link-layer address resolution. Routers also join a third multicast group, the all-routers group (FF02::2).
Reference:
https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipv6/configuration/xe-3s/ipv6-xe-36s-book/ip6-multicast.html

QUESTION 5
Which option about JSON is true?

A. uses predefined tags or angle brackets (<>) to delimit markup text
B. used to describe structured data that includes arrays
C. used for storing information
D. similar to HTML, it is more verbose than XML

Correct Answer: B
Section: Not categorized
Explanation

Explanation/Reference:
JSON data is written as name/value pairs.
A name/value pair consists of a field name (in double quotes), followed by a colon, followed by a value:
“name”:”Mark”
JSON can use arrays. Array values must be of type string, number, object, array, boolean or null..
For example:
{
“name”:”John”,
“age”:30,
“cars”:[“Ford”, “BMW”, “Fiat”]
}

QUESTION 6
Which IPv6 address type provides communication between subnets and cannot route on the Internet?

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

Correct Answer: B
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:
A IPv6 Unique Local Address is an IPv6 address in the block FC00::/7. It is the approximate IPv6 counterpart of

the IPv4 private address. It is not routable on the global Internet.
Note: In the past, Site-local addresses (FEC0::/10) are equivalent to private IP addresses in IPv4 but now they are deprecated.
Link-local addresses only used for communications within the local subnet. It is usually created dynamically using a link-local prefix of FE80::/10 and a 64-bit interface identifier (based on 48-bit MAC address).

QUESTION 7
Which command prevents passwords from being stored in the configuration as plaintext on a router or switch?

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

Correct Answer: B
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 8
What are two southbound APIs? (Choose two)

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

Correct Answer: AB
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:
OpenFlow is a well-known southbound API. OpenFlow defines the way the SDN Controller should interact with the forwarding plane to make adjustments to the network, so it can better adapt to changing business requirements.
The Network Configuration Protocol (NetConf) uses Extensible Markup Language (XML) to install, manipulate and delete configuration to network devices.
Other southbound APIs are:
+ onePK: a Cisco proprietary SBI to inspect or modify the network element configuration without hardware upgrades.
+ OpFlex: an open-standard, distributed control system. It send "summary policy" to network elements.

QUESTION 9
Which set of action satisfy the requirement for multi-factor authentication?

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

Correct Answer: B
Section: 5. Security Fundamentals

Explanation

Explanation/Reference:
This is an example of how two-factor authentication (2FA) works:
1. The user logs in to the website or service with their username and password.
2. The password is validated by an authentication server and, if correct, the user becomes eligible for the second factor.
3. The authentication server sends a unique code to the user's second-factor method (such as a smartphone app).
4. The user confirms their identity by providing the additional authentication for their second-factor method.

QUESTION 10
Which two capacities of Cisco DNA Center make it more extensible? (Choose two)

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

Correct Answer: BD
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:
Cisco DNA Center offers 360-degree extensibility through four distinct types of platform capabilities:
+ Intent-based APIs leverage the controller and enable business and IT applications to deliver intent to the network and to reap network analytics and insights for IT and business innovation.
+ Process adapters, built on integration APIs, allow integration with other IT and network systems to streamline IT operations and processes.
+ Domain adapters, built on integration APIs, allow integration with other infrastructure domains such as data center, WAN, and security to deliver a consistent intent-based infrastructure across the entire IT environment.
+ SDKs allow management to be extended to third-party vendor's network devices to offer support for diverse environments.

QUESTION 11
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. Physical access control
B. Social engineering attack
C. brute force attack
D. user awareness

Correct Answer: D
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
This is a training program which simulates an attack, not a real attack (as it says "The webpage that opens reports that it was safe") so we believed it should be called a "user awareness" program.
Therefore the best answer here should be "user awareness". This is the definition of
"User awareness" from CCNA 200- 301 Offical Cert Guide Book:
"User awareness: All users should be made aware of the need for data confidentiality to protect corporate information, as well as their own credentials and personal information. They should also be made aware of potential threats, schemes to mislead, and proper procedures to report security incidents. " Note: Physical

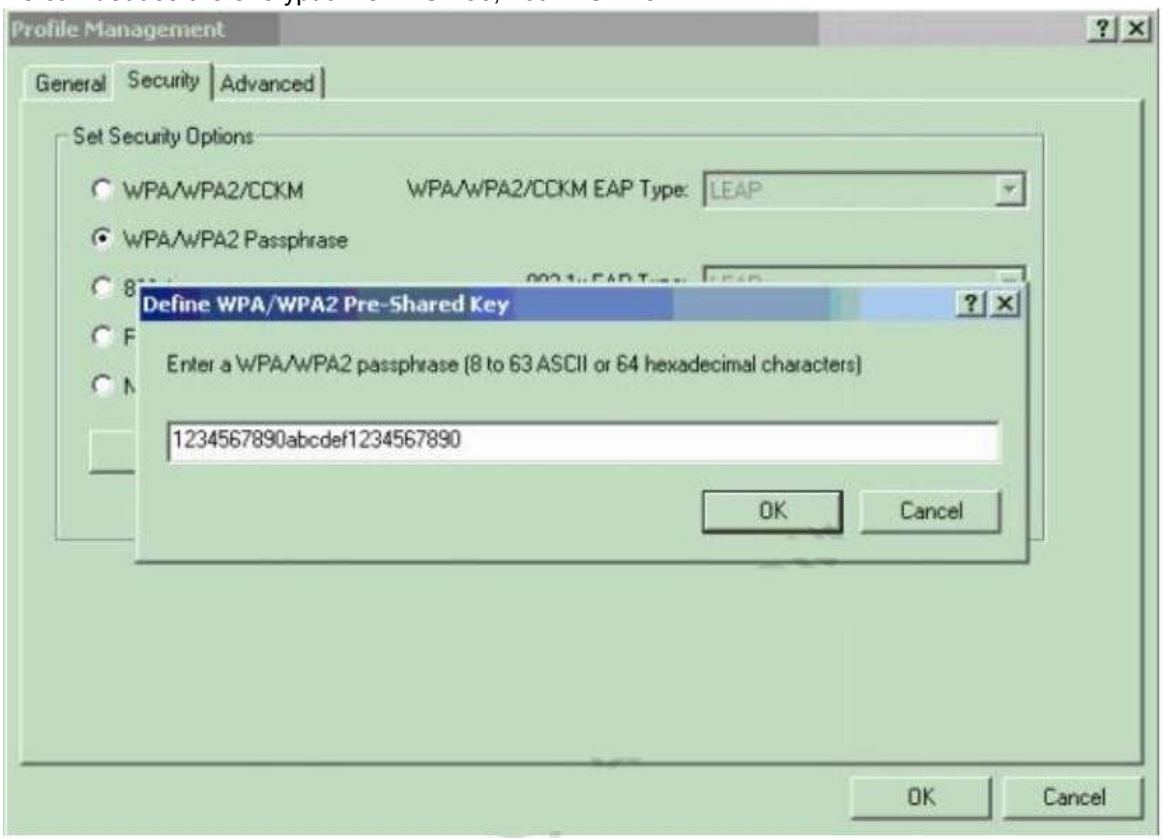
access control means infrastructure locations, such as network closets and data centers, should remain securely locked.

QUESTION 12
Which type of wireless encryption is used for WPA2 in pre-shared key mode?

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

Correct Answer: D
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
We can see in this picture we have to type 64 hexadecimal characters (256 bit) for the WPA2 passphrase so we can deduce the encryption is AES-256, not AES-128.



Reference: https://www.cisco.com/c/en/us/support/docs/wireless-mobility/wireless-lan-wlan/67134-wpa2-config.html

QUESTION 13
Which two must be met before SSH can operate normally on a Cisco IOS switch? (Choose two)

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

Correct Answer: AB
Section: 2. Network Access
Explanation

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

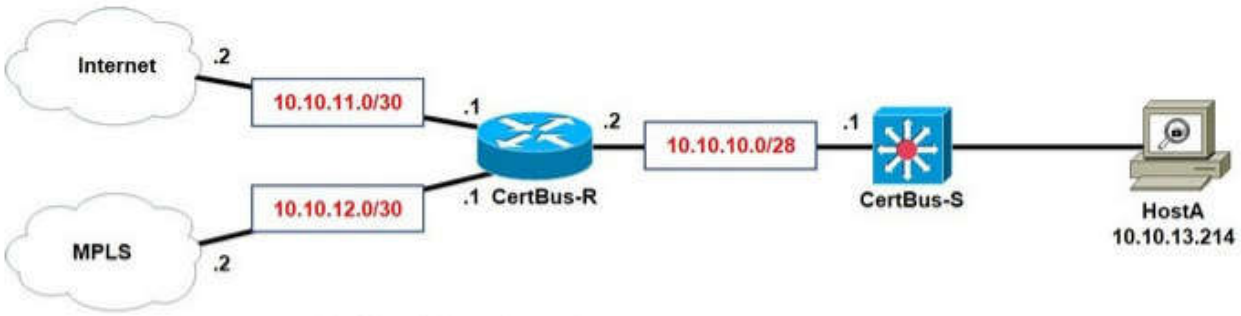
QUESTION 14
Which type of address is the public IP address of a NAT device?

A. outside global
B. outsdwde local
C. inside global
D. insride local
E. outside public
F. inside public

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:
NAT use four types of addresses:
* Inside local address - The IP address assigned to a host on the inside network. The address is usually not an IP address assigned by the Internet Network Information Center (InterNIC) or service provider.
This address is likely to be an RFC 1918 private address.
* Inside global address - A legitimate IP address assigned by the InterNIC or service provider that represents one or more inside local IP addresses to the outside world.
* Outside local address - The IP address of an outside host as it is known to the hosts on the inside network.
* Outside global address - The IP address assigned to a host on the outside network. The owner of the host assigns this address.

QUESTION 15
Refer to the exhibit. Which prefix does Router 1 use for traffic to Host A?




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

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

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: 1. Network Fundamentals
Explanation

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

QUESTION 16
How does HSRP provide first hop redundancy?

A. It load-balances traffic by assigning the same metric value to more than one route to the same destination m the IP routing table.
B. It load-balances Layer 2 traffic along the path by flooding traffic out all interfaces configured with the same VLAN.
C. It forwards multiple packets to the same destination over different routed links n the data path.
D. 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.

Correct Answer: D
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipapp_fhrp/configuration/xe-16/fhp-xe-16-book/fhp-hsrp-mgo.html

QUESTION 17
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 a single connection to a core spine switch.
D. A leaf switch can be added with connections to every spine switch.

Correct Answer: D
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:
Spine-leaf architecture is typically deployed as two layers: spines (such as an aggregation layer), and leaves (such as an access layer). Spine-leaf topologies provide high-bandwidth, low-latency, nonblocking server-to-server connectivity.
Leaf (aggregation) switches are what provide devices access to the fabric (the network of spine and leaf switches) and are typically deployed at the top of the rack. Generally, devices connect to the leaf switches. Devices can include servers, Layer 4-7 services (firewalls and load balancers), and WAN or Internet routers. Leaf switches do not connect to other leaf switches. In spine-and-leaf architecture, every leaf should connect to every spine in a full mesh.
Spine (aggregation) switches are used to connect to all leaf switches and are typically deployed at the end or middle of the row. Spine switches do not connect to other spine switches.

QUESTION 18
Which two actions are performed by the Weighted Random Early Detection mechanism? (Choose two)

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

Correct Answer: AD
Section: 4. IP Services
Explanation

Explanation/Reference:
Weighted Random Early Detection (WRED) is just a congestion avoidance mechanism. WRED drops packets selectively based on IP precedence. Edge routers assign IP precedences to packets as they enter the network. When a packet arrives, the following events occur:
1. The average queue size is calculated.
2. If the average is less than the minimum queue threshold, the arriving packet is queued.
3. If the average is between the minimum queue threshold for that type of traffic and the maximum threshold for the interface, the packet is either dropped or queued, depending on the packet drop probability for that type of traffic.
4. If the average queue size is greater than the maximum threshold, the packet is dropped. WRED reduces the chances of tail drop (when the queue is full, the packet is dropped) by selectively dropping packets when the output interface begins to show signs of congestion (thus it can mitigate congestion by preventing the queue from filling up). By dropping some packets early rather than waiting until the queue is full, WRED avoids dropping large numbers of packets at once and minimizes the chances of global synchronization. Thus, WRED

allows the transmission line to be used
fully at all times.
WRED generally drops packets selectively based on IP precedence. Packets with a higher IP precedence are less likely to be dropped than packets with a lower precedence. Thus, the higher the priority of a packet, the higher the probability that the packet will be delivered (-> answer A is correct).

QUESTION 19
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. CDP
B. SNMP
C. SMTP
D. ARP

Correct Answer: B
Section: 4. IP Services
Explanation

Explanation/Reference:
SNMP is an application-layer protocol that provides a message format for communication between SNMP managers and agents. SNMP provides a standardized framework and a common language used for the monitoring and management of devices in a network.
The SNMP framework has three parts:
+ An SNMP manager
+ An SNMP agent
+ A Management Information Base (MIB)
The Management Information Base (MIB) is a virtual information storage area for network management information, which consists of collections of managed objects.
With SNMP, the network administrator can send commands to multiple routers to do the backup.

QUESTION 20
Refer to the exhibit. What is the effect of this configuration?

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

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

Correct Answer: A
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
Dynamic ARP inspection (DAI) is a security feature that validates ARP packets in a network. It intercepts, logs, and discards ARP packets with invalid IP-to-MAC address bindings. This capability protects the network from certain man-in-the-middle attacks. After enabling DAI, all ports become untrusted ports.

QUESTION 21
A frame that enters a switch fails the Frame Check Sequence.
Which two interface counters are incremented? (Choose two)

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

Correct Answer: DE
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:
Whenever the physical transmission has problems, the receiving device might receive a frame whose bits have changed values. These frames do not pass the error detection logic as implemented in the FCS field in the Ethernet trailer. The receiving device discards the frame and counts it as some kind of input error.
Cisco switches list this error as a CRC error. Cyclic redundancy check (CRC) is a term related to how the FCS math detects an error.
The "input errors" includes runts, giants, no buffer, CRC, frame, overrun, and ignored counts.
The output below show the interface counters with the "show interface s0/0/0" command:

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

QUESTION 22
How do TCP and UDP differ in the way that they establish a connection between two endpoints?

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

Correct Answer: D
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 23
When OSPF learns multiple paths to a network, how does it select a route?

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

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:

QUESTION 24
Refer to the exhibit. Which password must an engineer use to enter the enable mode?

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

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

Correct Answer: C
Section: 2. Network Access
Explanation

Explanation/Reference:
If neither the enable password command nor the enable secret command is configured, and if there is a line password configured for the console, the console line password serves as the enable password for all VTY sessions -> The "enable secret" will be used first if available, then "enable password" and line password.
Reference:
https://www.cisco.com/c/en/us/td/docs/optical/cpt/r9_3/configuration/guide/cpt93_configuration/cpt93_configuration_chapter_0100

QUESTION 25
Which configuration is needed to generate an RSA key for SSH on a router?

A. Configure the version of SSH.

B. Configure VTY access.
C. Create a user with a password.
D. Assign a DNS domain name.

Correct Answer: D
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
In order to generate an RSA key for SSH, we need to configure the hostname and a DNS domain name on the router (a username and password is also required). Therefore in fact both answer C and answer D are correct.

QUESTION 26
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"
}
```

A. Option A
B. Option B
C. Option C
D. Option D

Correct Answer: C
Section: 6. Automation and Programmability

Explanation

Explanation/Reference:
JSON data is written as name/value pairs.
A name/value pair consists of a field name (in double quotes), followed by a colon, followed by a value:
“name”:”Mark”
JSON can use arrays. Array values must be of type string, number, object, array, boolean or null.
For example:
{
“name”:”John”,
“age”:30,
“cars”:[“Ford”, “BMW”, “Fiat”]
}
JSON can have empty object like “taskId”:{}

QUESTION 27
What is the primary different between AAA authentication and authorization?

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

Correct Answer: C
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
AAA stands for Authentication, Authorization and Accounting.
+ Authentication: Specify who you are (usually via login username & password)
+ Authorization: Specify what actions you can do, what resource you can access
+ Accounting: Monitor what you do, how long you do it (can be used for billing and auditing)
An example of AAA is shown below:
+ Authentication: "I am a normal user. My username/password is user_tom/learnforever"
+ Authorization: "user_tom can access LearnCCNA server via HTTP and FTP"
+ Accounting: "user_tom accessed LearnCCNA server for 2 hours". This user only uses "show" commands.

QUESTION 28
A Cisco IP phone receive untagged data traffic from an attached PC.
Which action is taken by the phone?

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

Correct Answer: A
Section: 2. Network Access
Explanation

Explanation/Reference:
Untagged traffic from the device attached to the Cisco IP Phone passes through the phone unchanged, regardless of the trust state of the access port on the phone.

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 29
An engineer must configure a /30 subnet between two routers. Which usable IP address and subnet mask combination meets this criteria?

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

Correct Answer: D
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:
A /30 subnet means subnet mask of 255.255.255.252. But 10.2.1.3 255.255.255.252 is a broadcast IP address; only 209.165.201.2/30 is the usable IP address.

QUESTION 30
What is a benefit of using a Cisco Wireless LAN Controller?

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

Correct Answer: D
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 31
What are two characteristics of a controller-based network? (Choose two)

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

Correct Answer: BC
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 32
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: 3. IP Connectivity
Explanation

Explanation/Reference:
Administrative distance is the feature used by routers to select the best path when there are two or more different routes to the same destination from different routing protocols. Administrative distance defines the reliability of a routing protocol.

QUESTION 33
Refer to Exhibit. How does SW2 interact with other switches in this VTP domain?

```
CertBus-SW2
vtp domain cisco
vtp mode transparent
vtp password ciscotest
interface fastethernet0/1
      description connection to CertBus-SW1
      switchport mode trunk
      switchport trunk encapsulation dot1q
```

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

Correct Answer: C
Section: 2. Network Access
Explanation

Explanation/Reference:
The VTP mode of SW2 is transparent so it only forwards the VTP updates it receives to its trunk links without processing them.
Reference: https://www.cisco.com/c/en/us/support/docs/lan-switching/vtp/10558-21.html

QUESTION 34

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

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

Correct Answer: C
Section: 2. 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 35
Which two encoding methods are supported by REST APIs? (Choose two)

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

Correct Answer: BE
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:
The Application Policy Infrastructure Controller (APIC) REST API is a programmatic interface that uses REST architecture. The API accepts and returns HTTP (not enabled by default) or HTTPS messages that contain JavaScript Object Notation (JSON) or Extensible Markup Language (XML) documents.
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 36
What are two reasons that cause late collisions to increment on an Ethernet interface? (Choose two)

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

Correct Answer: BC
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:
A late collision is defined as any collision that occurs after the first 512 bits (or 64th byte) of the frame have been transmitted. The usual possible causes are full-duplex/half-duplex mismatch, exceeded Ethernet cable length limits, or defective hardware such as incorrect cabling, noncompliant number of hubs in the network, or a bad NIC.
Late collisions should never occur in a properly designed Ethernet network. They usually occur when Ethernet cables are too long or when there are too many repeaters in the network.

Reference: Click here

QUESTION 37
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: 3. IP Connectivity
Explanation

Explanation/Reference:
The Administrative distance (AD) of EIGRP is 90 while the AD of OSPF is 110 so EIGRP route will be chosen to install into the routing table.

QUESTION 38
What is the primary effect of the spanning-tree portfast command?

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

Correct Answer: B
Section: 2. Network Access
Explanation

Explanation/Reference:
https://itexamanswers.net/ccna-200-301-dumps-full-questions-exam-study-guide-free.html#comment-49349

QUESTION 39
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 drops the received frame.
B. The Layer 2 switch floods packets to all ports except the receiving port in the given VLAN.
C. The Layer 2 switch sends a copy of a packet to CPU for destination MAC address learning.
D. The Layer 2 switch forwards the packet and adds the destination MAC address to its MAC address table.

Correct Answer: B
Section: 1. Network Fundamentals
Explanation

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

QUESTION 40
Refer to the exhibit. What is the effect of this configuration?

```
ip arp inspection vlan 5-10
interface fastethernet 0.1
     switchport mode access
     switchport access vlan 5
```

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

Correct Answer: D
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
Dynamic ARP inspection is an ingress security feature; it does not perform any egress checking.

QUESTION 41
Refer to the exhibit. An engineer configured NAT translations and has verified that the configuration is correct. Which IP address is the source IP?

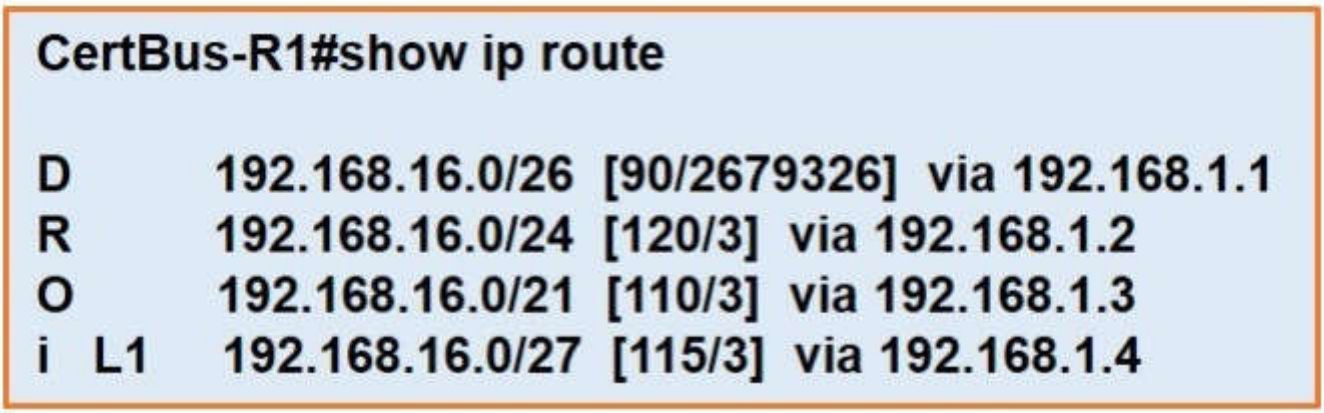
```
R2#show ip nat translations
Pro  Inside global      Inside local      Outside local      Outside global
tcp  172.23.104.3:43268 10.4.4.4:43268   172.23.103.10:23   172.23.103.10:23
tcp  172.23.104.4:45507 10.4.4.5:45507   172.23.103.10:80   172.23.103.10:80
```

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

Correct Answer: D
Section: 4. IP Services
Explanation

Explanation/Reference:

QUESTION 42
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: 3. IP Connectivity
Explanation

Explanation/Reference:
The destination IP addresses match all four entries in the routing table but the 192.168.16.0/27 has the longest prefix so it will be chosen. This is called the "longest prefix match" rule.

QUESTION 43
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: 1. Network Fundamentals
Explanation

Explanation/Reference:
FF00::/8 is used for IPv6 multicast and this is the IPv6 type of address the question wants to ask.
FE80::/10 range is used for link-local addresses. Link-local addresses only used for communications within the local subnetwork (automatic address configuration, neighbor discovery, router discovery, and by many routing protocols). It is only valid on the current subnet.
It is usually created dynamically using a link-local prefix of FE80::/10 and a 64-bit interface identifier (based on 48-bit MAC address).

QUESTION 44
Which two values or settings must be entered when configuring a new WLAN in the Cisco Wireless LAN Controller GUI? (Choose two)

A. management interface settings
B. QoS settings
C. Ip address of one or more access points
D. SSID

E. Profile name

Correct Answer: DE
Section: 2. Network Access
Explanation

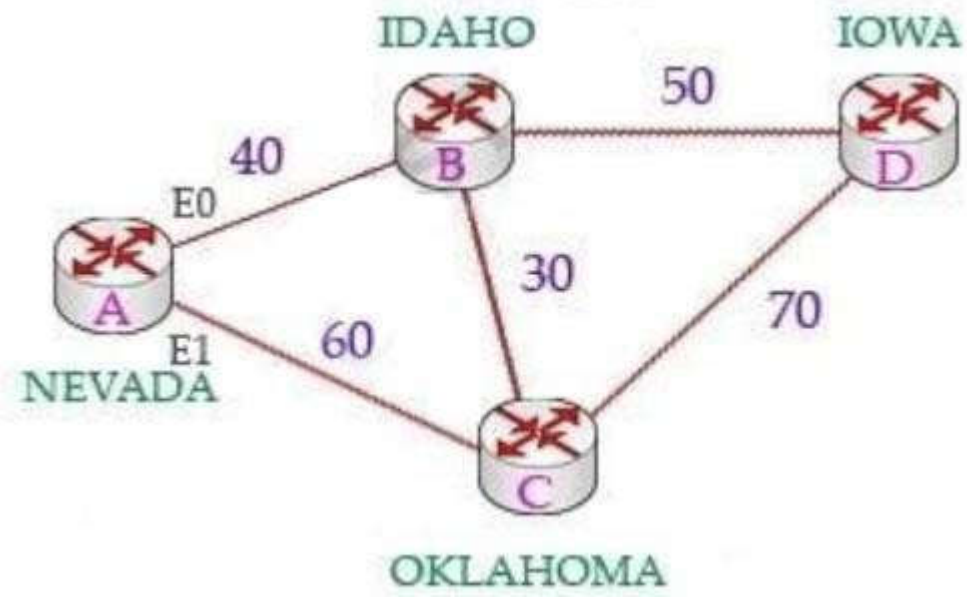
Explanation/Reference:

QUESTION 45
Which two actions influence the EIGRP route selection process? (Choose two)

A. The router calculates the reported distance by multiplying the delay on the exiting Interface by 256.
B. The router calculates the best backup path to the destination route and assigns it as the feasible successor.
C. The router calculates the feasible distance of all paths to the destination route.
D. The advertised distance is calculated by a downstream neighbor to inform the local router of the bandwidth on the link.
E. The router must use the advertised distance as the metric for any given route.

Correct Answer: BC
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
The reported distance (or advertised distance) is the cost from the neighbor to the destination. It is calculated from the router advertising the route to the network. For example in the topology below, suppose router A & B are exchanging their routing tables for the first time. Router B says "Hey, the best metric (cost) from me to IOWA is 50 and the metric from you to IOWA is 90" and advertises it to router A.
Router A considers the first metric (50) as the Advertised distance. The second metric (90), which is from NEVADA to IOWA (through IDAHO), is called the Feasible distance.



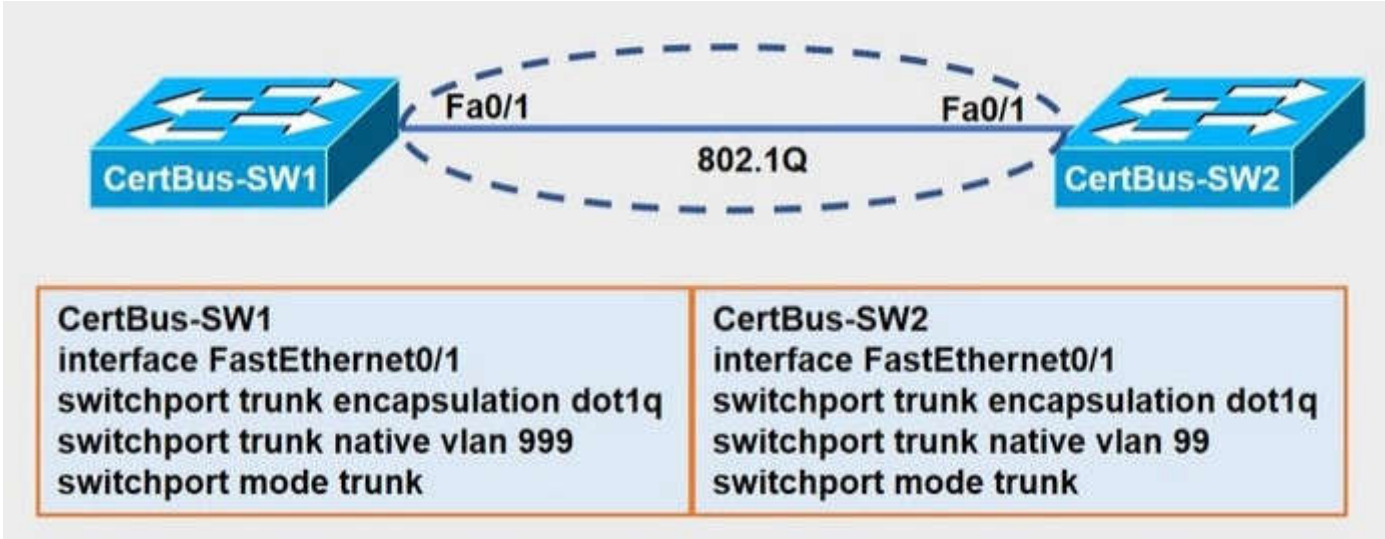
The reported distance is calculated in the same way of calculating the metric. By default (K1 = 1, K2 = 0, K3 = 1, K4 = 0, K5 = 0), the metric is calculated as follows:

$$metric = \left[\frac{10{,}000{,}000}{\text{slowest bandwidth[in kbps]}} + \frac{\text{sum of delay[in µsec]}}{10}\right] * 256$$

-> Answer A is not correct.

Feasible successor is the backup route. To be a feasible successor, the route must have an Advertised distance (AD) less than the Feasible distance (FD) of the current successor route -> Answer B is correct.
Feasible distance (FD): The sum of the AD plus the cost between the local router and the next- hop router. The router must calculate the FD of all paths to choose the best path to put into the routing table.
Note: Although the new CCNA exam does not have EIGRP topic but you should learn the basic knowledge of this routing protocol.

QUESTION 46
Refer to Exhibit. Which action do the switches take on the trunk link?



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

Correct Answer: B
Section: 2. Network Access
Explanation

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

QUESTION 47
Which command is used to specify the delay time in seconds for LLDP to initialize on any interface?

A. lldp timer
B. lldo holdtimt
C. lldp reinit
D. lldp tlv-select

Correct Answer: C
Section: 2. Network Access
Explanation

Explanation/Reference:

+ lldp holdtime seconds: Specify the amount of time a receiving device should hold the information from your device before discarding it
+ lldp reinit delay: Specify the delay time in seconds for LLDP to initialize on an interface
+ lldp timer rate: Set the sending frequency of LLDP updates in seconds
Reference: Click here

QUESTION 48
An engineer configured an OSPF neighbor as a designated router. Which state verifies the designated router is in the proper mode?

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

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:

QUESTION 49
Refer to the exhibit. The show ip ospf interface command has been executed on R1. How is OSPF configured?

```
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 time is 0 msec, 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)
```

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

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
Explanation:
From the output we can see there are Designated Router & Backup Designated Router for this OSPF domain so this is a broadcast network (point-to-point and point-to multipoint networks do not elect DR & BDR) -> Answer B is not correct.
By default, the timers on a broadcast network (Ethernet, point-to-point and point-to-multipoint) are 10 seconds hello and 40 seconds dead (therefore answer C is correct). The timers on a non- broadcast network are 30 seconds hello 120 seconds dead.
From the line "Neighbor Count is 3", we learn there are four OSPF routers in this OSPF domain -> Answer D is not correct.
Reference: https://www.cisco.com/c/en/us/support/docs/ip/open-shortest-path-first-ospf/13689-17.html

QUESTION 50
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 in an EtherChannel.
B. Administratively shut down the ports.
C. Configure the port type as access and place in VLAN 99.
D. Configure the ports as trunk ports.
E. Enable the Cisco Discovery Protocol.

Correct Answer: BC
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:

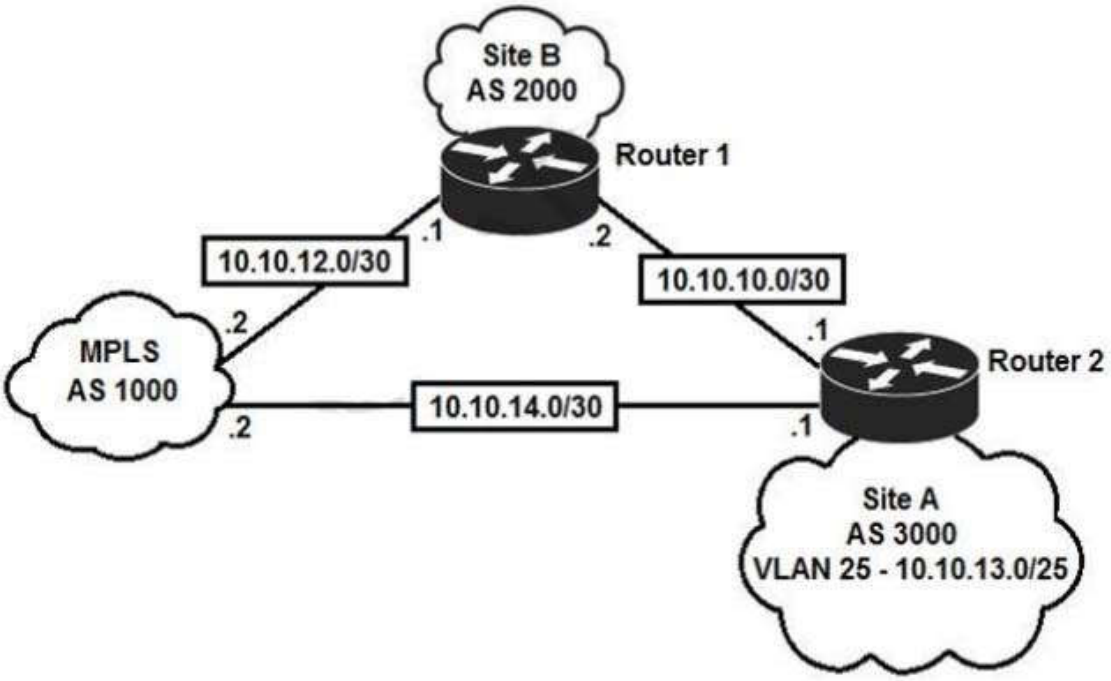
QUESTION 51
Which QoS Profile is selected in the GUI when configuring a voice over WLAN deployment?

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

Correct Answer: B
Section: 2. Network Access
Explanation

Explanation/Reference:
Cisco Unified Wireless Network solution WLANs support four levels of QoS: Platinum/Voice, Gold/Video, Silver/ Best Effort (default), and Bronze/Background.
Reference: https://www.cisco.com/c/en/us/td/docs/wireless/controller/7-4/configuration/guides/consolidated/ b_cg74_CONSOLIDATED/b_cg74_CONSOLIDATED_chapter_01010111.html

QUESTION 52
Refer to the exhibit. An engineer is bringing up a new circuit to the MPLS provider on the Gi0/1 interface of Router1. The new circuit uses eBGP and teams the route to VLAN25 from the BGP path.
Whats the expected behavior for the traffic flow for route 10.10.13.0/25?




```
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          10.10.13.208/30 [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
```

A. Traffic to 10.10.13.0.25 is load balanced out of multiple interfaces.
B. Route 10.10.13.0/25 is updated in the routing table as being learned from interface Gi0/1.
C. Traffic to 10.10.13.0/25 is asymmeteical.
D. Route 10.10.13.0/25 learned via the Gi0/0 interface remains in the routing table.

Correct Answer: D
Section: 3. IP Connectivity
Explanation

Explanation/Reference:

QUESTION 53
Which statement identifies the functionality of virtual machines?

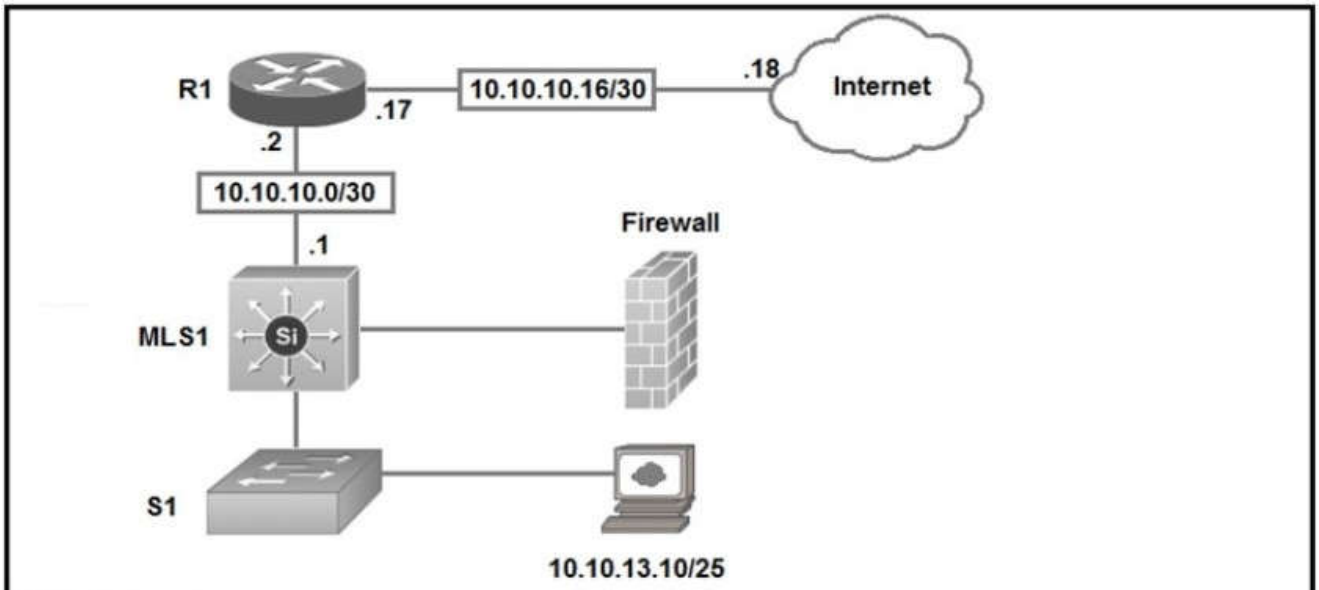
A. Virtualized servers run most efficiently when they are physically connected to a switch that is separate from the hypervisor.
B. The hypervisor can virtualize physical components including CPU, memory, and storage.

C. Each hypervisor can support a single virtual machine and a single software switch.
D. The hypervisor communicates on Layer 3 without the need for additional resources.

Correct Answer: B
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 54
Refer to the exhibit. Which type of route does R1 use to reach host 10.10.13.10/32?




```
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
```

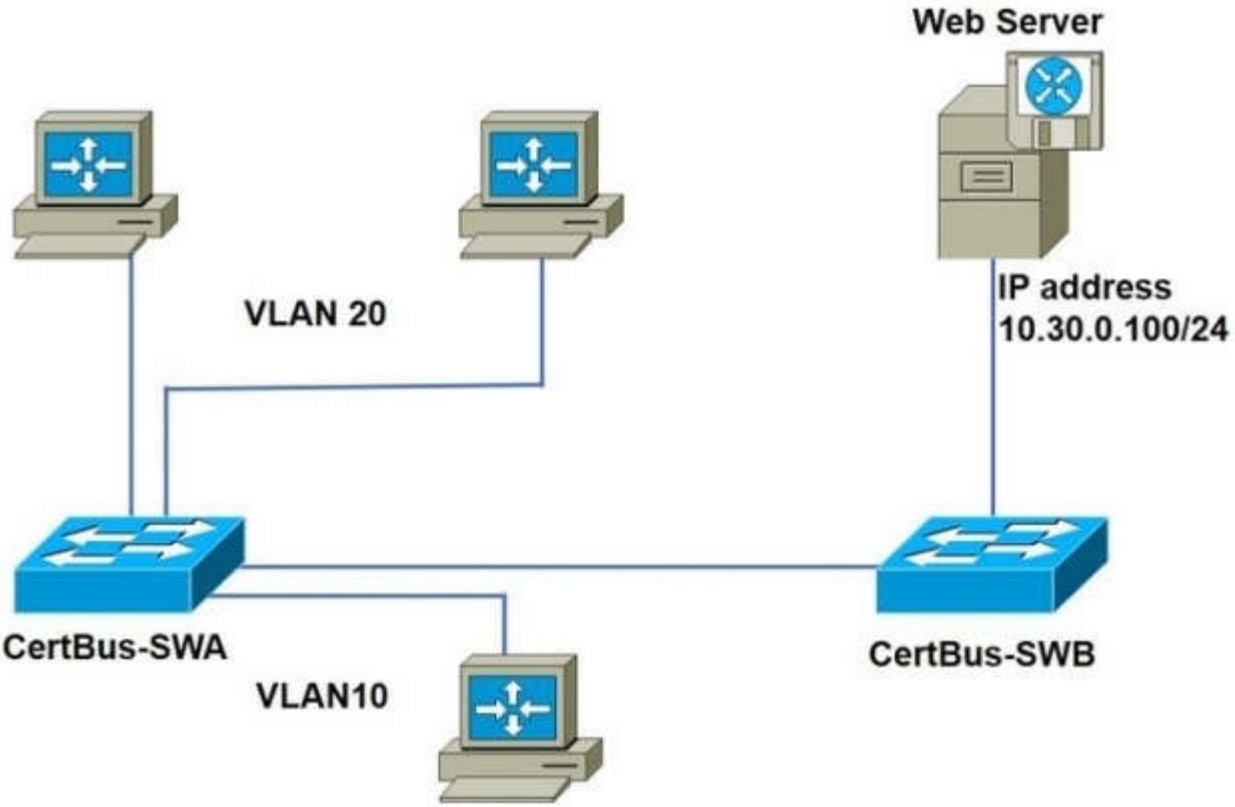
A. floating static route
B. host route
C. default route
D. network route

Correct Answer: D
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:
From the output, we see R1 will use the entry "O 10.10.13.0/25 [110/4576] via 10.10.10.1, ..." to reach host 10.10.13.10. This is a network route.
Note: "B* 0.0.0.0/0 ..." is a default route.

QUESTION 55

Refer to the exhibit. Which configuration when applied to switch A accomplishes this task?



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.

A
```
Config t
ip access-list extended wwwblock
deny tcp any host 10.30.0.100 eq 80
int vlan 10
ip address-group wwwblock in
```

B
```
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 address-group wwwblock in
```

C
```
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 address-group wwwblock in
```

A. Option A
B. Option B
C. Option C
D. Option D

Correct Answer: B
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 56
Two switches are connected and using Cisco Dynamic Trunking Protocol SW1 is set to Dynamic Desirable. What is the result of this configuration?

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

Correct Answer: D
Section: 2. Network Access
Explanation

Explanation/Reference:

QUESTION 57
Which feature on the Cisco Wireless LAN Controller when enabled restricts management access from specific networks?

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

Correct Answer: A
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
Whenever you want to control which devices can talk to the main CPU, a CPU ACL is used.
Note: CPU ACLs only filter traffic towards the CPU, and not any traffic exiting or generated by the CPU.
Reference: https://www.cisco.com/c/en/us/support/docs/wireless-mobility/wlan-security/71978-acl-wlc.html

QUESTION 58
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. port-to-multipoint
B. broadcast
C. point-to-point

D. nonbroadcast

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
The default OSPF network type for HDLC and PPP on Serial link is point-to-point (while the default OSPF network type for Ethernet link is Broadcast).

QUESTION 59
Refer to the exhibit. Based on the LACP neighbor status, in which mode is the SW1 port channel configured?

```
CertBus-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
```

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

Correct Answer: D
Section: 2. Network Access
Explanation

Explanation/Reference:
From the neighbor status, we notice the “Flags” are SP. “P” here means the neighbor is in Passive mode.
In order to create an Etherchannel interface, the (local) SW1 ports should be in Active mode.
Moreover, the “Port State” in the exhibit is “0x3c” (which equals to “00111100 in binary format).
Bit 3 is “1” which means the ports are synchronizing -> the ports are working so the local ports should be in Active mode.

QUESTION 60
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: 3. IP Connectivity
Explanation

Explanation/Reference:
The Broadcast network type is the default for an OSPF enabled ethernet interface (while Point-toPoint is the default OSPF network type for Serial interface with HDLC and PPP encapsulation).
Reference: https://www.oreilly.com/library/view/cisco-ios-cookbook/0596527225/ch08s15.html

QUESTION 61
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. software-as-a-service
C. network-as-a-service
D. infrastructure-as-a-service

Correct Answer: D
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:
Below are the 3 cloud supporting services cloud providers provide to customer:
+ SaaS (Software as a Service): SaaS uses the web to deliver applications that are managed by a thirdparty vendor and whose interface is accessed on the clients' side. Most SaaS applications can be run directly from a web browser without any downloads or installations required, although some require plugins.
+ PaaS (Platform as a Service): are used for applications, and other development, while providing cloud components to software. What developers gain with PaaS is a framework they can build upon to develop or customize applications. PaaS makes the development, testing, and deployment of applications quick, simple, and cost-effective. With this technology, enterprise operations, or a thirdparty provider, can manage OSes, virtualization, servers, storage, networking, and the PaaS software itself. Developers, however, manage the applications.
+ IaaS (Infrastructure as a Service): self-service models for accessing, monitoring, and managing remote datacenter infrastructures, such as compute (virtualized or bare metal), storage, networking, and networking services (e.g. firewalls). Instead of having to purchase hardware outright, users can purchase IaaS based on consumption, similar to electricity or other utility billing.
In general, IaaS provides hardware so that an organization can install their own operating system.

QUESTION 62
Which mode allows access points to be managed by Cisco Wireless LAN Controllers?

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

Correct Answer: B
Section: 2. Network Access
Explanation

Explanation/Reference:
A Lightweight Access Point (LAP) is an AP that is designed to be connected to a wireless LAN (WLAN) controller (WLC). APs are “lightweight,” which means that they cannot act independently of a wireless LAN controller (WLC). The WLC manages the AP configurations and firmware. The APs are “zero touch” deployed, and individual configuration of APs is not necessary.
Click hereClick here

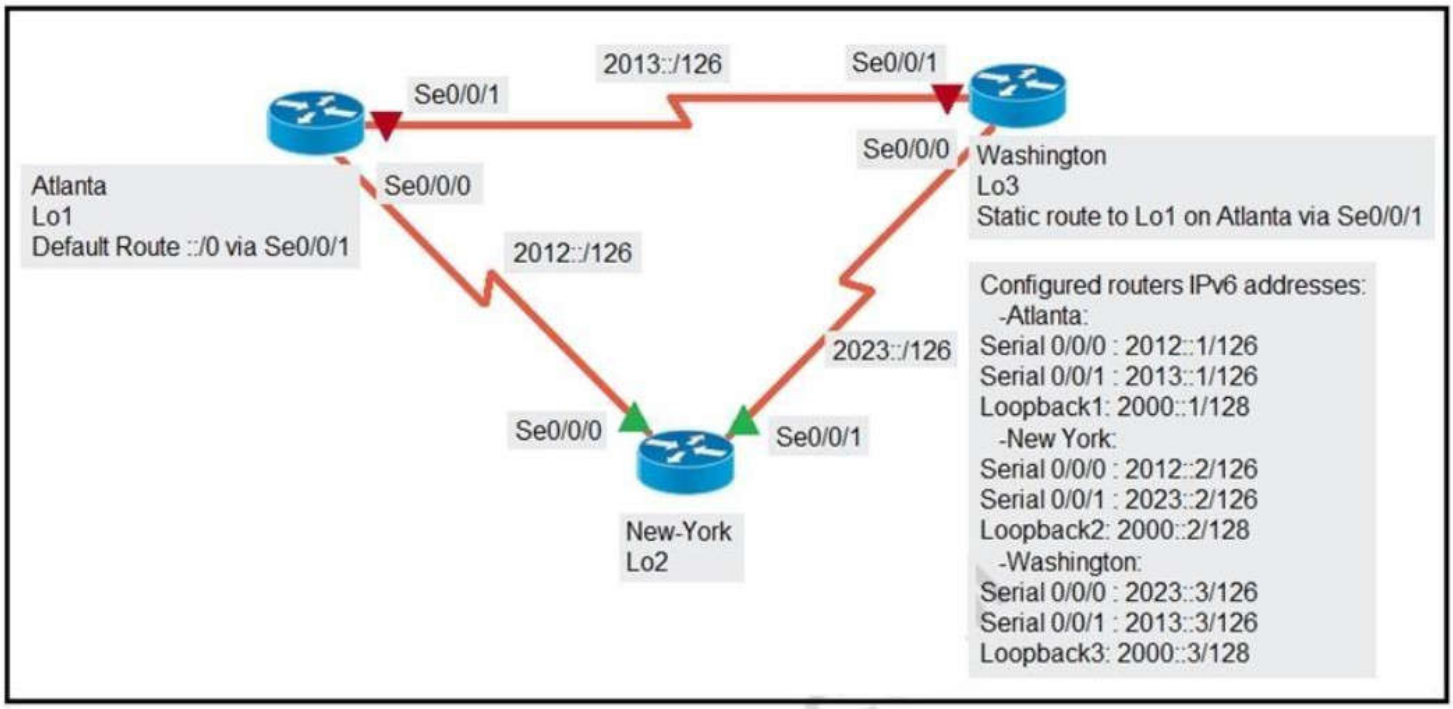
QUESTION 63
Which command automatically generates an IPv6 address from a specified IPvô prefix and MAC address of an interface?

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: 1. Network Fundamentals
Explanation

Explanation/Reference:
The “ipv6 address autoconfig” command causes the device to perform IPv6 stateless address autoconfiguration to discover prefixes on the link and then to add the EUI-64 based addresses to the interface.
Addresses are configured depending on the prefixes received in Router Advertisement (RA) messages.
The device will listen for RA messages which are transmitted periodically from the router (DHCP Server).
This RA message allows a host to create a global IPv6 address from:
+ Its interface identifier (EUI-64 address)
+ Link Prefix (obtained via RA)
Note: Global address is the combination of Link Prefix and EUI-64 address

QUESTION 64
Refer to Exhibit. An engineer is configuring the NEW York router to reach the Lot 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 router 2000::1/128 2012::1
B. ipv6 router 2000::1/128 2012:1 5

C. ipv6 router 2000::1/128 2012::2
D. ipv6 router 2000::1/128 2023:2 5
E. ipv6 router 2000::1/128 2023::3 5

Correct Answer: AE
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
Floating static routes are static routes that have an administrative distance greater than the administrative distance (AD) of another static route or dynamic routes. By default a static route has an AD of 1 then floating static route must have the AD greater than 1. Floating static route has a manually configured administrative distance greater than that of the primary route and therefore would not be in the routing table until the primary route fails.

QUESTION 65
Refer to the exhibit. Which command provides this output?

```
CertBus-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 Intrfce Holdtme   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   Gig 3/2       132       R I         CPT 600   Gig 4/2
10.1.1.2   Gig 4/2       174       R I         CPT 600   Gig 3/2
```

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

Correct Answer: D
Section: 2. Network Access
Explanation

Explanation/Reference:

QUESTION 66
Which two outcomes are predictable behaviors for HSRP? (Choose two)

A. The two routers share a virtual IP address that is used as the default gateway for devices on the LAN.
B. The two routers negotiate one router as the active router and the other as the standby router.
C. Each router has a different IP address both routers act as the default gateway on the LAN, and traffic is load balanced between them.

D. The two routers synchronize configurations to provide consistent packet forwarding.
E. The two routed share the same IP address, and default gateway traffic is load-balanced between them.

Correct Answer: AB
Section: 3. IP Connectivity
Explanation

Explanation/Reference:

QUESTION 67
Which action is taken by a switch port enabled for PoE power classification override?

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

Correct Answer: D
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:
Explanation: PoE monitoring and policing compares the power consumption on ports with the administrative maximum value (either a configured maximum value or the port's default value). If the power consumption on a monitored port exceeds the administrative maximum value, the following actions occur:
– A syslog message is issued.
– The monitored port is shut down and error-disabled.
– The allocated power is freed.
Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst6500/ios/12-2SX/configuration/guide/book/power_over_ethernet.pdf

QUESTION 68
Which 802.11 frame type is association response?

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

Correct Answer: A
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:
There are three main types of 802.11 frames: the Data Frame, the Management Frame and the Control Frame. Association Response belongs to Management Frame. Association response is sent in response to an association request.
Reference: https://en.wikipedia.org/wiki/802.11_Frame_Types

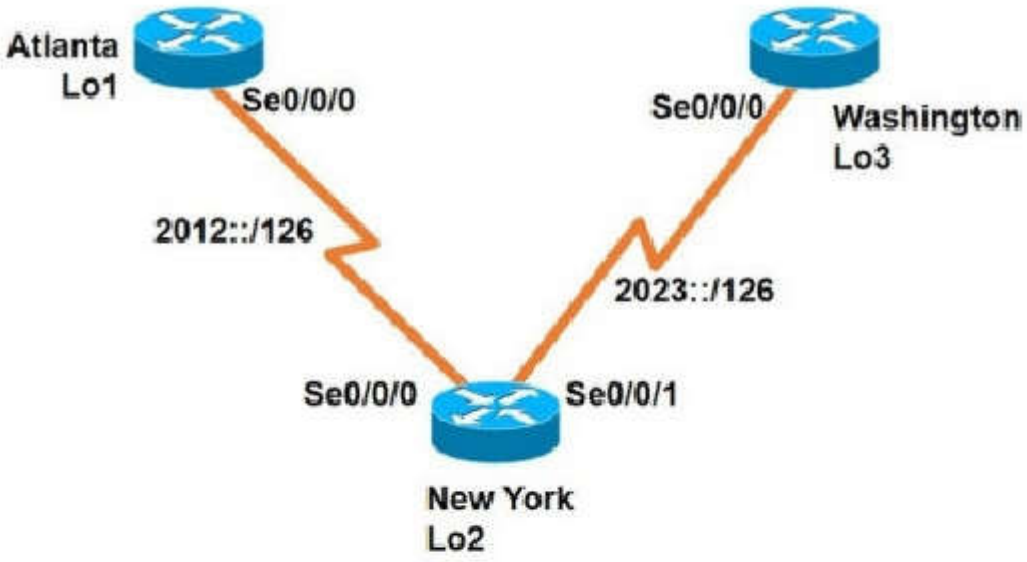
QUESTION 69
Which two tasks must be performed to configure NTP to a trusted server in client mode on a single network device? (Choose two)

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

Correct Answer: AD
Section: 4. IP Services
Explanation

Explanation/Reference:
To configure authentication, perform this task in privileged mode:
Step 1: Configure an authentication key pair for NTP and specify whether the key will be trusted or untrusted.
Step 2: Set the IP address of the NTP server and the public key.
Step 3: Enable NTP client mode.
Step 4: Enable NTP authentication.
Step 5: Verify the NTP configuration.
Reference: Click here

QUESTION 70
Refer to the exhibit. The New York router is configured with static routes pointing to the Atlanta and Washington sites.



Configured routers IPv6 addresses:

-Atlanta:
Serial 0/0/0: 2012::1/126
Loopback1: 2000::1/128

-New York:
Serial 0/0/0: 2012::2/126
Serial 0/0/1: 2023::2/126
Loopback2: 2000::2/128

-Wanshington:
Serial 0/0/0: 2023::3/126
Loopback3: 2000::3/128

Which two tasks must be performed so that the Serial0/0/0 interfaces on the Atlanta and Washington routers can reach one another? (Choose two.)

A. Configure the ipv6 route 2012::/126 2023::1 command on the Washington router.
B. Configure the ipv6 route 2023::/126 2012::1 command on the Atlanta router.
C. Configure the Ipv6 route 2012::/126 s0/0/0 command on the Atlanta router.
D. Configure the ipv6 route 2023::/126 2012::2 command on the Atlanta router.
E. Configure the ipv6 route 2012::/126 2023::2 command on the Washington router.

Correct Answer: DE
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
The short syntax of static IPv6 route is:
ipv6 route <destination-IPv6-address> {next-hop-IPv6-address | exit-interface}

QUESTION 71

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

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

Correct Answer: A
Section: 2. Network Access
Explanation

Explanation/Reference:
Enabling the PortFast feature causes a switch or a trunk port to enter the STP forwarding-state immediately or upon a linkup event, thus bypassing the listening and learning states.
Note: To enable portfast on a trunk port you need the trunk keyword "spanning-tree portfast trunk"

QUESTION 72
Refer to exhibit. Which statement explains the configuration error message that is received?

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

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

Correct Answer: A
Section: 1. Network Fundamentals
Explanation

Explanation/Reference:

QUESTION 73
When a floating static route is configured, which action ensures that the backup route is used when the primary route fails?

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

Correct Answer: A
Section: 3. IP Connectivity
Explanation

Explanation/Reference:

QUESTION 74
What makes Cisco DNA Center different from traditional network management applications and their management of networks?

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

Correct Answer: C
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 75
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: 1. Network Fundamentals
Explanation

Explanation/Reference:
This question asks about the private ranges of IPv4 addresses. The private ranges of each class of IPv4 are listed below:
Class A private IP address ranges from 10.0.0.0 to 10.255.255.255 Class B private IP address ranges from 172.16.0.0 to 172.31.255.255 Class C private IP address ranges from 192.168.0.0 to 192.168.255.255 Only the network 172.28.0.0/16 belongs to the private IP address (of class B).

QUESTION 76
Refer to the exhibit. What does router R1 use as its OSPF router-ID?

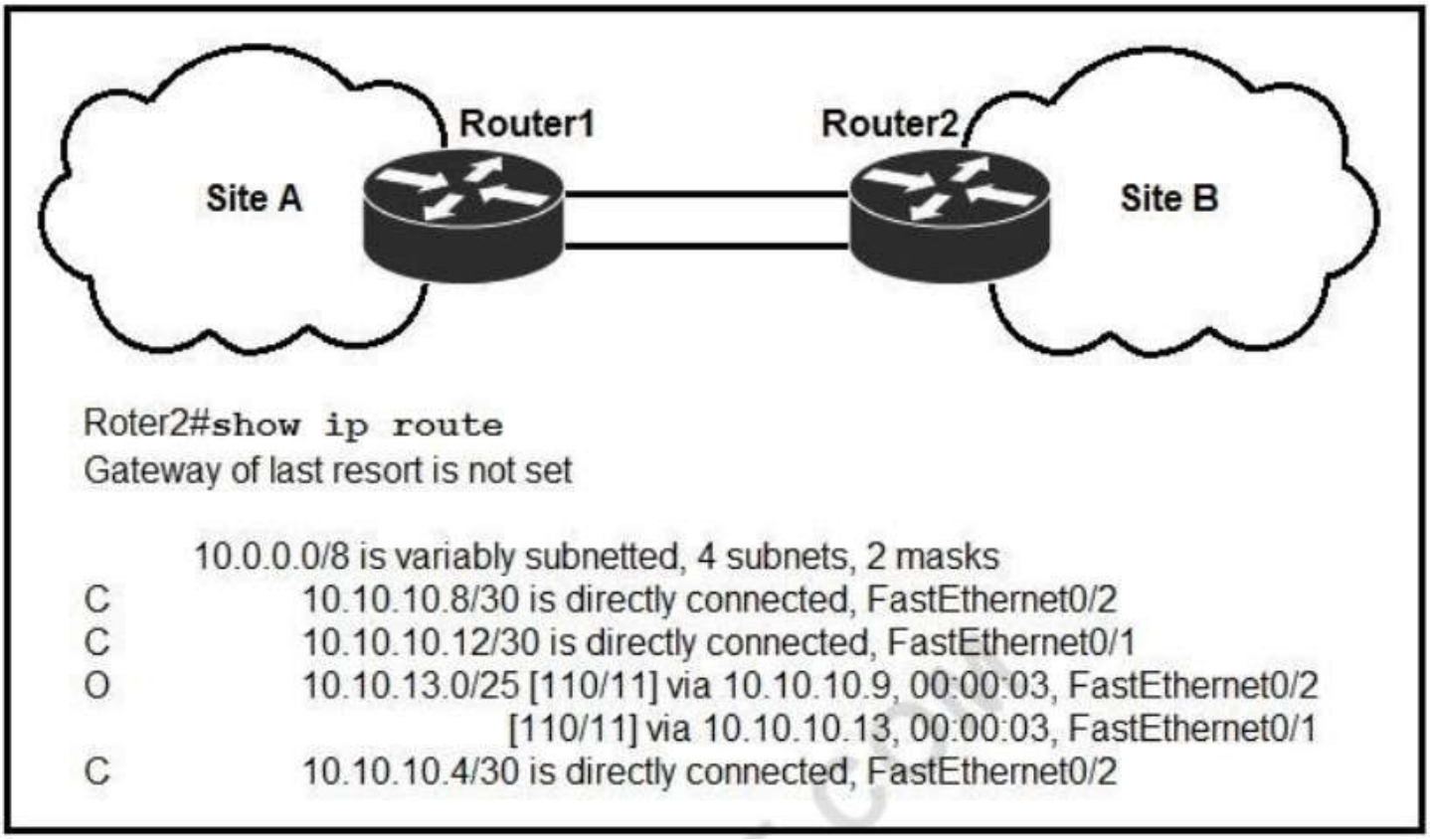
```
CertBus-R1#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        unassigned      YES NVRAM  administratively down down
GigabitEthernet1/0     192.168.0.1     YES NVRAM  up                    up
GigabitEthernet2/0     10.10.10.10     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
```

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

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
OSPF uses the following criteria to select the router ID:
1. Manual configuration of the router ID (via the "router-id x.x.x.x" command under OSPF router configuration mode).
2. Highest IP address on a loopback interface.
3. Highest IP address on a non-loopback and active (no shutdown) interface

QUESTION 77
Refer to the exhibit. If OSPF is running on this network, how does Router 2 handle traffic from Site B to 10.10.13.128/25 at Site A?



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

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
Router2 does not have an entry for the subnet 10.10.13.128/25. It only has an entry for 10.10.13.0/25, which ranges from 10.10.13.0 to 10.10.13.127.

QUESTION 78

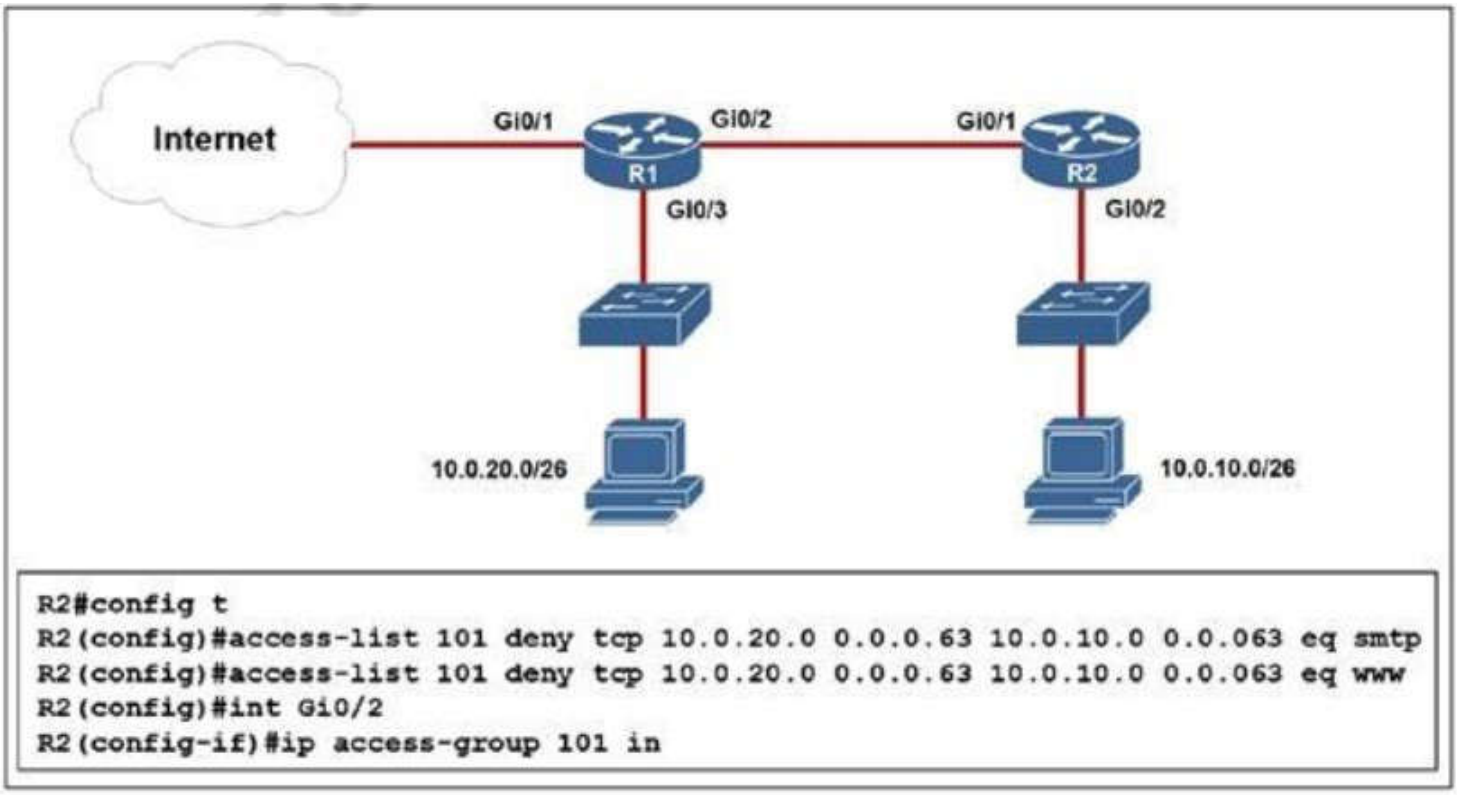
When a site-to-site VPN is used, which protocol is responsible for the transport of user data?

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

Correct Answer: C
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
A site-to-site VPN allows offices in multiple fixed locations to establish secure connections with each other over a public network such as the Internet. A site-to-site VPN means that two sites create a VPN tunnel by encrypting and sending data between two devices. One set of rules for creating a siteto-site VPN is defined by IPsec.

QUESTION 79
Refer to the exhibit. An extended ACL has been configured and applied to router R2 The configuration farted to work as intended.



Refer to the exhibit. An extended ACL has been configured and applied to router R2 The configuration started 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 to the begining of ACL 101 for allowed traffic.
B. Add a “permit ip any any” statement at the end of ACL 101 for allowed traffic.
C. The source and destination IPs must be swapped in ACL 101.
D. The ACL must be configured the Gi0/2 interface inbound on R1.
E. The ACL must be moved to the Gio/1 interface outbound on R2.

Correct Answer: BC
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:

QUESTION 80
Which mode must be used to configure EtherChannel between two switches without using a negotiation protocol?

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

Correct Answer: A
Section: 2. Network Access
Explanation

Explanation/Reference:
The Static Persistence (or “on” mode) bundles the links unconditionally and no negotiation protocol is used. In this mode, neither PAgP nor LACP packets are sent or received.

QUESTION 81
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. cost
B. adminstrative distance
C. metric
D. as-path

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
If a router learns two different paths for the same network from the same routing protocol, it has to decide which route is better and will be placed in the routing table. Metric is the measure used to decide which route is better (lower number is better). Each routing protocol uses its own metric.
For example, RIP uses hop counts as a metric, while OSPF uses cost.
Click hereClick here

QUESTION 82
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. RIP
C. Internal EIGRP
D. OSPF

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
With the same route (prefix), the router will choose the routing protocol with lowest Administrative Distance (AD) to install into the routing table. The AD of Internal EIGRP (90) is lowest so it would be chosen. The table below lists the ADs of popular routing protocols.

Route Source	Administrative Distance
Directly Connected	0
Static	1
EIGRP	90
EIGRP Summary route	5
OSPF	110
RIP	120

Note: The AD of IS-IS is 115. The "EIGRP" in the table above is "Internal EIGRP". The AD of "External EIGRP" is 170. An EIGRP external route is a route that was redistributed into EIGRP.

QUESTION 83
Which MAC address is recognized as a VRRP virtual address?

A. 0000.5E00.010a
B. 0005.3711.0975
C. 0000.0C07.AC99
D. 0007.C070/AB01

Correct Answer: A
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
With VRRP, the virtual router's MAC address is 0000.5E00.01xx , in which xx is the VRRP group.

QUESTION 84
Which statement correctly compares traditional networks and controller-based networks?

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

Correct Answer: D
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:
Most traditional devices use a distributed architecture, in which each control plane is resided in a networking device. Therefore they need to communicate with each other via messages to work correctly.
In contrast to distributed architecture, centralized (or controller-based) architectures centralizes the control of

networking devices into one device, called SDN controller -> Answer D is correct.

QUESTION 85
If a notice-level messaging is sent to a syslog server, which event has occurred?

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

Correct Answer: C
Section: 4. IP Services
Explanation

Explanation/Reference:
Usually no action is required when a route flaps so it generates the notification syslog level message (level 5).

QUESTION 86
Refer to the exhibit. With which metric was the route to host 172.16.0.202 learned?

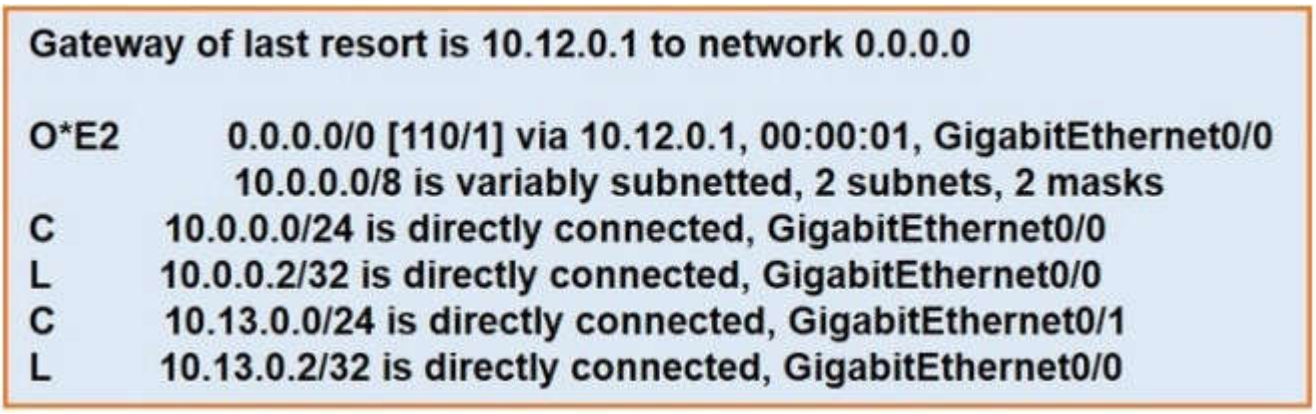
```
CertBus-R1#show ip route | begin gateway
Gateway of last resort is 209.165.200.246 to network 0.0.0.0
S*  0.0.0.0/0 [1/0] via 209.165.200.246, Serial0/1/0 is directly connected, Serial0/1/0

      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
```

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

Correct Answer: C
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
Both the line "O 172.16.0.128/25" and "S 172.16.0.0/24" cover the host 172.16.0.202 but with the "longest (prefix) match" rule the router will choose the first route.

QUESTION 87
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?

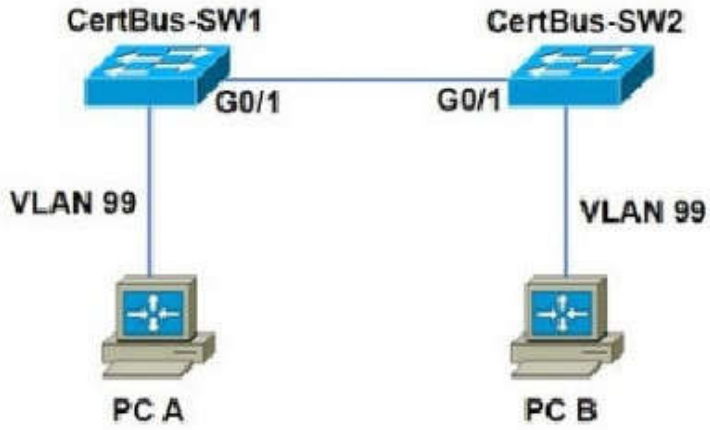


A. It ignores the new static route until the existing OSPF default route is removed.
B. It immediately replaces the existing OSPF route in the routing table with the newly configured static route.
C. It starts load-balancing traffic between the two default routes.
D. It starts sending traffic without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

Correct Answer: A
Section: 3. IP Connectivity
Explanation

Explanation/Reference:
Our new static default route has the Administrative Distance (AD) of 120, which is bigger than the AD of OSPF External route (O*E2) so it will not be pushed into the routing table until the current OSPF External route is removed.
For your information, if you don't type the AD of 120 (using the command "ip route 0.0.0.0 0.0.0.0 10.13.0.1") then the new static default route would replace the OSPF default route as the default AD of static route is 1. You will see such line in the routing table:
S* 0.0.0.0/0 [1/0] via 10.13.0.1

QUESTION 88
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.



CertBus-SW1:	CertBus-SW2:
Name: Gi0/1	Name: Gi0/1
Switchport: Enabled	Switchport: Enabled
Administrative Mode: Trunk	Administrative Mode: Trunk
Operational Mode: Trunk	Operational Mode: Trunk
Administrative Trunking Encapsulation: dot1q	Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q	Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: Off	Negotiation of Trunking: Off
Access Mode VLAN: 1 (default)	Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)	Trunking Native Mode VLAN: 99 (VLAN0099)
Administrative Native VLAN tagging: enabled	Administrative Native VLAN tagging: enabled
Voice VLAN: none	Voice VLAN: none
[output omitted]	[output omitted]
Trunking VLANs Enabled: 50-100	Trunking VLANs Enabled: 50-100
Pruning VLANs Enabled: 2-1001	Pruning VLANs Enabled: 2-1001
Capture Mode Disabled	Capture Mode Disabled
Capture VLANs Allowed: All	Capture VLANs Allowed: All

Which error must be corrected?

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

Correct Answer: A
Section: 2. Network Access
Explanation

Explanation/Reference:
From the output we see the native VLAN of Switch1 on Gi0/1 interface is VLAN 1 while that of Switch2 is VLAN 99 so there would be a native VLAN mismatch.

QUESTION 89
An engineer must configure a WLAN using the strongest encryption type for WPA2-PSK. Which cipher fulfills the configuration requirement?

A. WEP

B. RC4
C. AES
D. TKIP

Correct Answer: C
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
Many routers provide WPA2-PSK (TKIP), WPA2-PSK (AES), and WPA2-PSK (TKIP/AES) as options.
TKIP is actually an older encryption protocol introduced with WPA to replace the very-insecure WEP encryption at the time. TKIP is actually quite similar to WEP encryption. TKIP is no longer considered secure, and is now deprecated. In other words, you shouldn't be using it.
AES is a more secure encryption protocol introduced with WPA2 and it is currently the strongest encryption type for WPA2-PSK/

QUESTION 90
Which statement about Link Aggregation when implemented on a Cisco Wireless LAN Controller is true?

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

Correct Answer: D
Section: 2. Network Access
Explanation

Explanation/Reference:
Link aggregation (LAG) is a partial implementation of the 802.3ad port aggregation standard. It bundles all of the controller's distribution system ports into a single 802.3ad port channel.
Restriction for Link aggregation:
- LAG requires the EtherChannel to be configured for `mode on' on both the controller and the Catalyst switch -> Answer B is not correct.
- If the recommended load-balancing method cannot be configured on the Catalyst switch, then configure the LAG connection as a single member link or disable LAG on the controller -> Answer A is not correct while answer D is correct.
Reference: Click here

QUESTION 91
When configuring a WLAN with WPA2 PSK in the Cisco Wireless LAN Controller GUI, which two formats are available to select? (Choose two)

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

Correct Answer: AE
Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
When configuring a WLAN with WPA2 Preshared Key (PSK), we can choose the encryption key format as either ASCII or HEX.

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

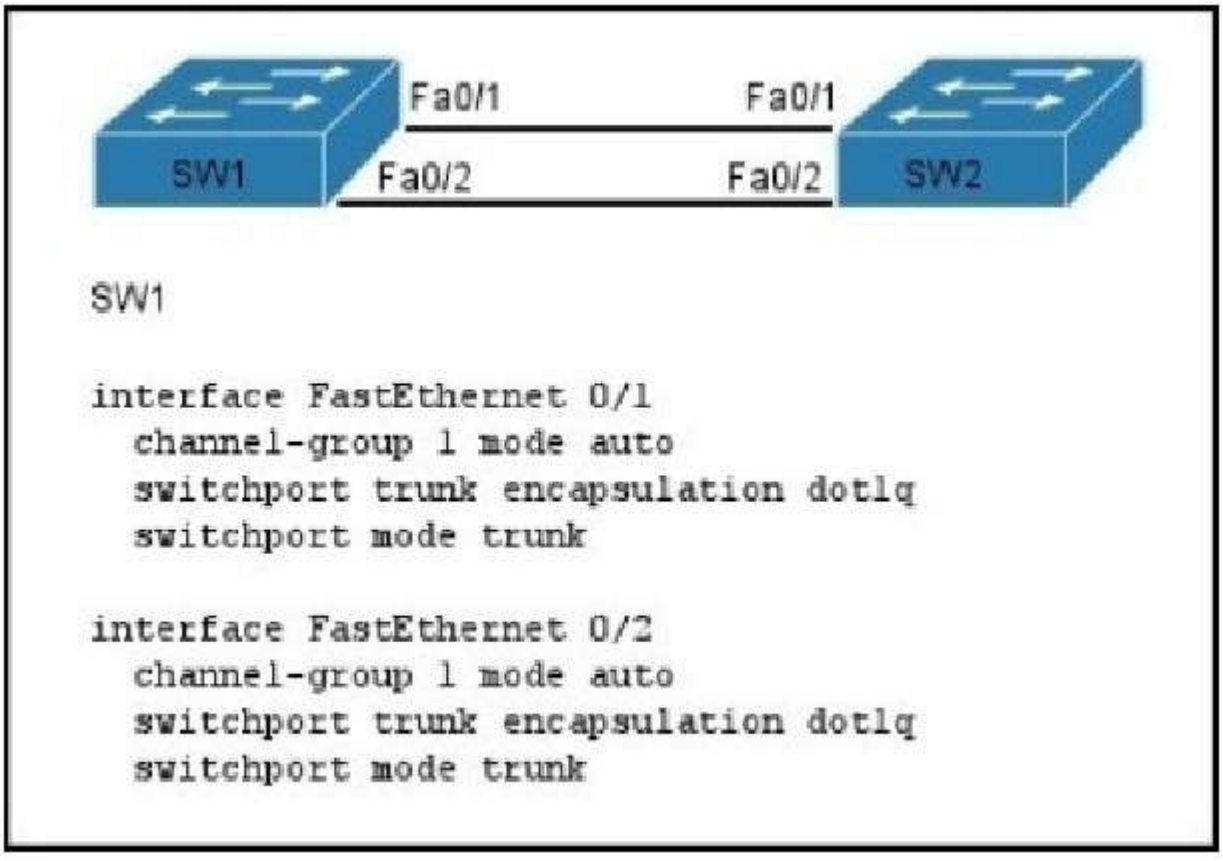
QUESTION 92
Which API is used in controller-based architectures to interact with edge devices?

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

Correct Answer: D
Section: 6. Automation and Programmability
Explanation

Explanation/Reference:

QUESTION 93
Refer to the exhibit. A network administrator is configuring an EtherChannel between SW1 and SW2. The SW1 configuration is shown.



What is the correct configuration for SW2?

A. interface FastEthernet 0/1
channel-group 1 mode active
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet 0/2
channel-group 1 mode active

switchport trunk encapsulation dot1q
switchport mode trunk

B. interface FastEthernet 0/1
channel-group 2 mode auto
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet 0/2
channel-group 2 mode auto
switchport trunk encapsulation dot1q
switchport mode trunk

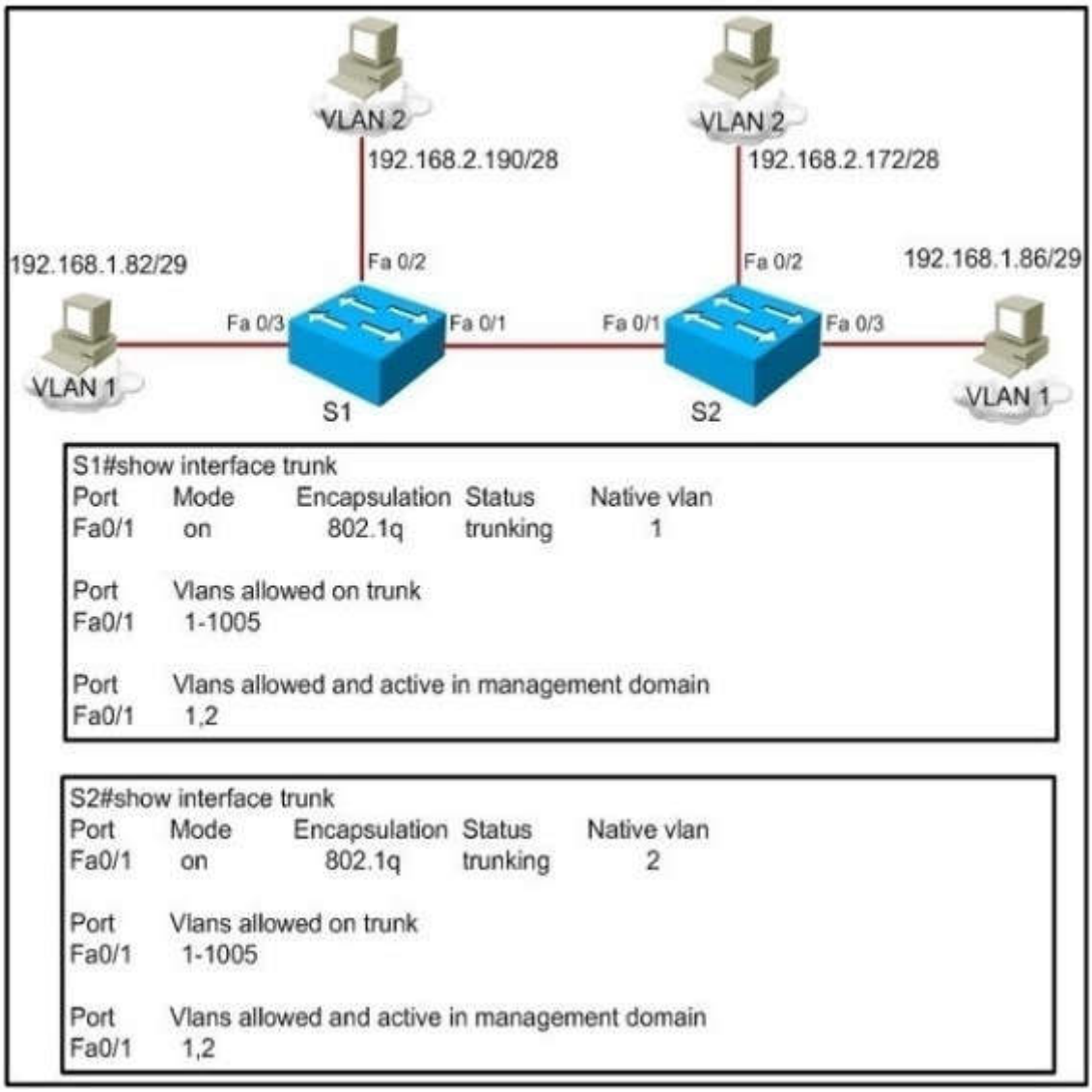
C. interface FastEthernet 0/1
channel-group 1 mode desirable
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet 0/2
channel-group 1 mode desirable
switchport trunk encapsulation dot1q
switchport mode trunk

D. interface FastEthernet 0/1
channel-group 1 mode passive
switchport trunk encapsulation
dot1q switchport mode trunk
interface FastEthernet 0/2
channel-group 1 mode passive
switchport trunk encapsulation dot1q
switchport mode trunk

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:
If the etherchannel was configured with mode “auto”, it was using PagP, so, we need to configure the other switch with “desirable” mode.
PagP modes: auto | Desirable
LACP modes: active | pasive

QUESTION 94
Refer to the exhibit. A frame on VLAN 1 on switch S1 is sent to switch S2 where the frame is received on VLAN 2.



What causes this behavior?

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

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:
Untagged frames are encapsulated with the native VLAN. In this case, the native VLANs are different so although S1 will tag it as VLAN 1 it will be received by S2.

QUESTION 95
What are two enhancements that OSPFv3 supports over OSPFV2? (Choose two.)

A. It requires the use of ARP.
B. It can support multiple IPv6 subnets on a single link.

C. It supports up to 2 instances of OSPFv3 over a common link.
D. It routes over links rather than over networks.

Correct Answer: BD
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 96
Which option is a valid IPv6 address?

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

Correct Answer: D
Section: Not categorized
Explanation

Explanation/Reference:
An IPv6 address is represented as eight groups of four hexadecimal digits, each group representing 16 bits (two octets). The groups are separated by colons (:). An example of an IPv6 address is 2001:0db8:85a3:0000:0000:8a2e:0370:7334.
The leading 0's in a group can be collapsed using ::, but this can only be done once in an IP address.

QUESTION 97
Which three are characteristics of an IPv6 anycast address? (Choose three.)

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

Correct Answer: BEF
Section: Not categorized
Explanation

Explanation/Reference:
A new address type made specifically for IPv6 is called the Anycast Address. These IPv6 addresses are global addresses, these addresses can be assigned to more than one interface unlike an IPv6 unicast address. Anycast is designed to send a packet to the nearest interface that is a part of that anycast group. The sender creates a packet and forwards the packet to the anycast address as the destination address which goes to the nearest router. The nearest router or interface is found by using the metric of a routing protocol currently running on the network. However in a LAN setting the nearest interface is found depending on the order the neighbors were learned. The anycast packet in a LAN setting forwards the packet to the neighbor it learned about first.

QUESTION 98
Which two statements describe characteristics of IPv6 unicast addressing? (Choose two.)

A. Global addresses start with 2000::/3.

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

Correct Answer: AD
Section: Not categorized
Explanation

Explanation/Reference:
Below is the list of common kinds of IPv6 addresses:

Loopback address ::1
Link-local address FE80::/10
Site-local address FEC0::/10
Global address 2000::/3
Multicast address FF00::/8

QUESTION 99
What is the alternative notation for the IPv6 address B514:82C3:0000:0000:0029:EC7A:0000:EC72?

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

Correct Answer: D
Section: Not categorized
Explanation

Explanation/Reference:
There are two ways that an IPv6 address can be additionally compressed: compressing leading zeros and substituting a group of consecutive zeros with a single double colon(::). Both of these can be used in any number of combinations to notate the same address. It is important to note that the double colon (::) can only be used once within a single IPv6 address notation. So, the extra 0's can only be compressed once.

QUESTION 100
Which IPv6 address is valid?

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

Correct Answer: D
Section: Not categorized
Explanation

Explanation/Reference:
An IPv6 address is represented as eight groups of four hexadecimal digits, each group representing 16 bits (two octets). The groups are separated by colons (:). An example of an IPv6 address is 2001:0db8:85a3:0000:0000:8a2e:0370:7334.
The leading O's in a group can be collapsed using ::, but this can only be done once in an IP address.

QUESTION 101
Which two are features of IPv6? (Choose two.)

A. anycast
B. broadcast
C. multicast
D. podcast
E. allcast

Correct Answer: AC
Section: Not categorized
Explanation

Explanation/Reference:
IPv6 addresses are classified by the primary addressing and routing methodologies common in networking: unicast addressing, anycast addressing, and multicast addressing. A unicast address identifies a single network interface. The Internet Protocol delivers packets sent to a unicast address to that specific interface. An anycast address is assigned to a group of interfaces, usually belonging to different nodes. A packet sent to an anycast address is delivered to just one of the member interfaces, typically the nearest host, according to the routing protocol's definition of distance. Anycast addresses cannot be identified easily, they have the same format as unicast addresses, and differ only by their presence in the network at multiple points. Almost any unicast address can be employed as an anycast address.
A multicast address is also used by multiple hosts, which acquire the multicast address destination by participating in the multicast distribution protocol among the network routers. A packet that is sent to a multicast address is delivered to all interfaces that have joined the corresponding multicast group.

QUESTION 102
Which command enables IPv6 forwarding on a Cisco router?

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

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:
To enable IPv6 routing on the Cisco router use the following command: ipv6 unicast-routing
If this command is not recognized, your version of IOS does not support IPv6.

QUESTION 103
Which IPv6 address is the equivalent of the IPv4 interface loopback address 127.0.0.1?

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

Correct Answer: A
Section: Not categorized
Explanation

Explanation/Reference:
In IPv6 the loopback address is written as, ::1
This is a 128bit number, with the first 127 bits being '0' and the 128th bit being '1'. It's just a single address, so could also be written as ::1/128.

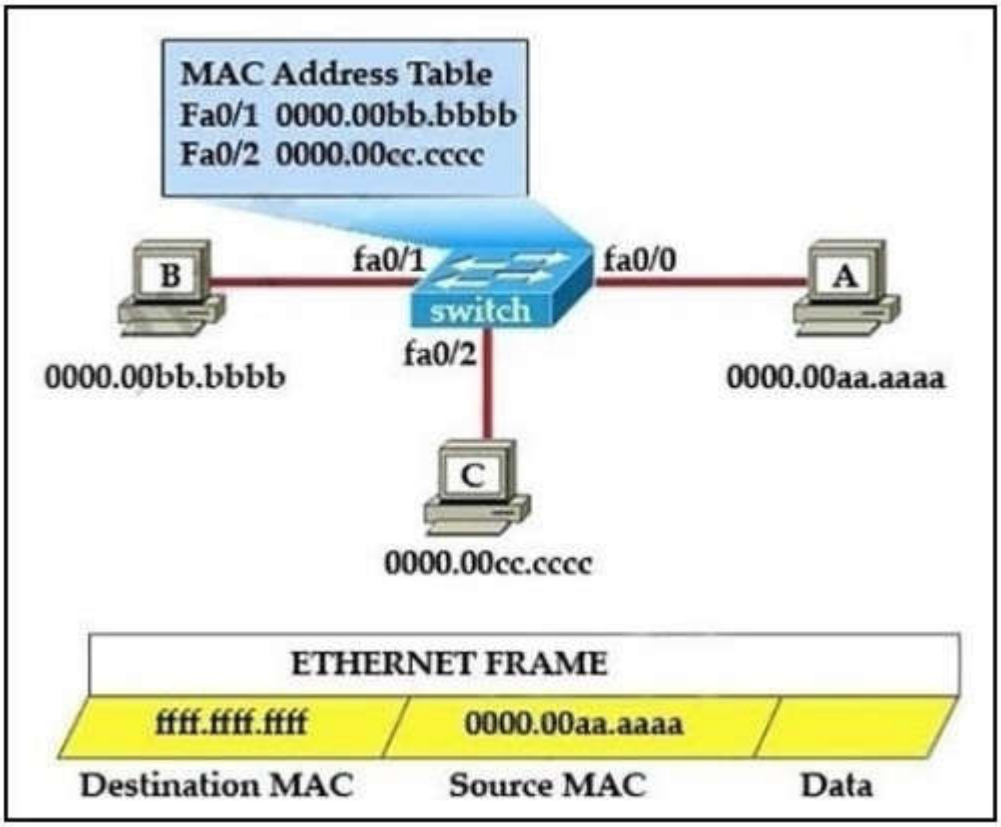
QUESTION 104
In which two formats can the IPv6 address fd15:0db8:0000:0000:0700:0003:400F:572B be written? (Choose two.)

A. fd15:0db8:0000:0000:700:3:400F:527B
B. fd15::db8::700:3:400F:527B
C. fd15:db8:0::700:3:4F:527B
D. fd15:0db8::7:3:4F:527B
E. fd15:db8::700:3:400F:572B

Correct Answer: AE
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 105
Refer to the exhibit. The MAC address table is shown in its entirety. The Ethernet frame that is shown arrives at the switch.



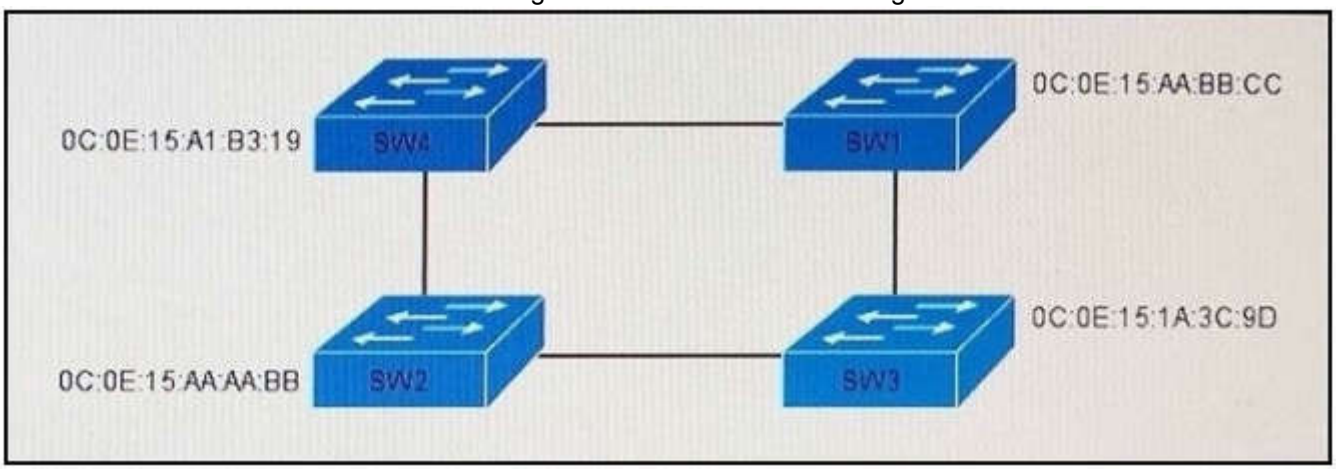
What two operations will the switch perform when it receives this frame? (Choose two.)

A. The switch will not forward a frame with this destination MAC address.
B. The frame will be forwarded out of all the ports on the switch.
C. The MAC address of ffff.ffff.ffff will be added to the MAC address table.
D. The frame will be forwarded out of all the active switch ports except for port fa0/0.
E. The MAC address of 0000.00aa.aaaa will be added to the MAC Address Table.
F. The frame will be forwarded out of fa0/0 and fa0/1 only.

Correct Answer: DE
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 106
Refer to the exhibit. Which switch in this configuration becomes the root bridge?

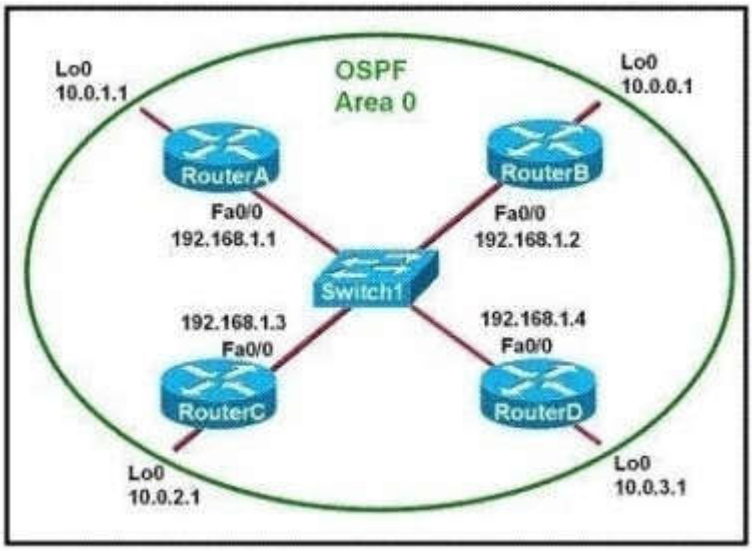


A. SW1
B. SW2
C. SW3
D. SW4

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 107
Refer to the exhibit. Which two statements are true about the loopback address that is configured on RouterB? (Choose two.)



A. It ensures that data will be forwarded by RouterB.
B. It provides stability for the OSPF process on RouterB.
C. It specifies that the router ID for RouterB should be 10.0.0.1.
D. It decreases the metric for routes that are advertised from RouterB.
E. It indicates that RouterB should be elected the DR for the LAN.

Correct Answer: BC
Section: Not categorized
Explanation

Explanation/Reference:
A loopback interface never comes down even if the link is broken so it provides stability for the OSPF process (for example we use that loopback interface as the router-id) – The router-ID is chosen in the order below:
+ The highest IP address assigned to a loopback (logical) interface. + If a loopback interface is not defined, the highest IP address of all active router's physical interfaces will be chosen.
-> The loopback interface will be chosen as the router ID of RouterB ?

QUESTION 108
Refer to the exhibit. Which two statements about the interface that generated the output are true? (Choose two.)

```
Port Security              : Enabled
Port Status                : Secure-shutdown
Violation Mode             : Shutdown
Aging Time                 : 0 mins
Aging Type                 : Absolute
SecureStatic Address Aging : Disabled
Maximum MAC Addresses      : 2
Total MAC Addresses        : 2
Configured MAC Addresses   : 0
Sticky MAC Addresses       : 2
Last Source Address:Vlan   : 0001.0rAA.33BB:1
Security Violation Count   : 1
```

A. Two secure MAC address are manually configured on the interface.
B. A syslog message is generated when the maximum number of secure MAC addresses is on the interface.
C. The interface is error-disabled.
D. The interface dynamically learned two secure MAC addresses.

E. An SNMP trap is generated when the maximum number of secure MAC addresses is reached on the interface.

Correct Answer: CD
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 109
Refer to the exhibit. Which two statements about the interface that generated the output are true? (Choose two.)

Port Security	:	Enabled
Port Status	:	Secure-up
Violation Mode	:	Protect
Aging Time	:	5 mins
Aging Type	:	Inactivity
SecureStatic Address Aging	:	Disabled
Maximum MAC Addresses	:	3
Total MAC Addresses	:	3
Configured MAC Addresses	:	1
Sticky MAC Addresses	:	2
Last Source Address:Vlan	:	0001.0fAA.33BB:1
Security Violation Count	:	0

A. learned MAC addresses are deleted after five minutes of inactivity
B. the interface is error-diabled if packets arrive from a new unknown source address
C. it has dynamically learned two secure MAC addresses
D. it has dynamically learned three secure MAC addresses
E. the security violation counter increments if packets arrive from a new unknown source address

Correct Answer: AC
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 110
Refer to the exhibit. Which two events occur on the interface, if packets from an unknown Source address arrive after the interface learns the maximum number of secure MAC address? (Choose two.)

Port Security	:	Enabled
Port Status	:	Secure-up
Violation Mode	:	Protect
Aging Time	:	0 mins
Aging Type	:	Absolute
SecureStatic Address Aging	:	Disabled
Maximum MAC Addresses	:	4
Total MAC Addresses	:	3
Configured MAC Addresses	:	1
Sticky MAC Addresses	:	2
Last Source Address:Vlan	:	0001.0fAA.33BB:1
Security Violation Count	:	0

A. The security violation counter dose not increment
B. The port LED turns off
C. The interface is error-disabled
D. A syslog message is generated
E. The interface drops traffic from unknown MAC address

Correct Answer: AE
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 111
Refer to the exhibit. Which two statements about the network environment of router R1 must be true? (Choose two.)

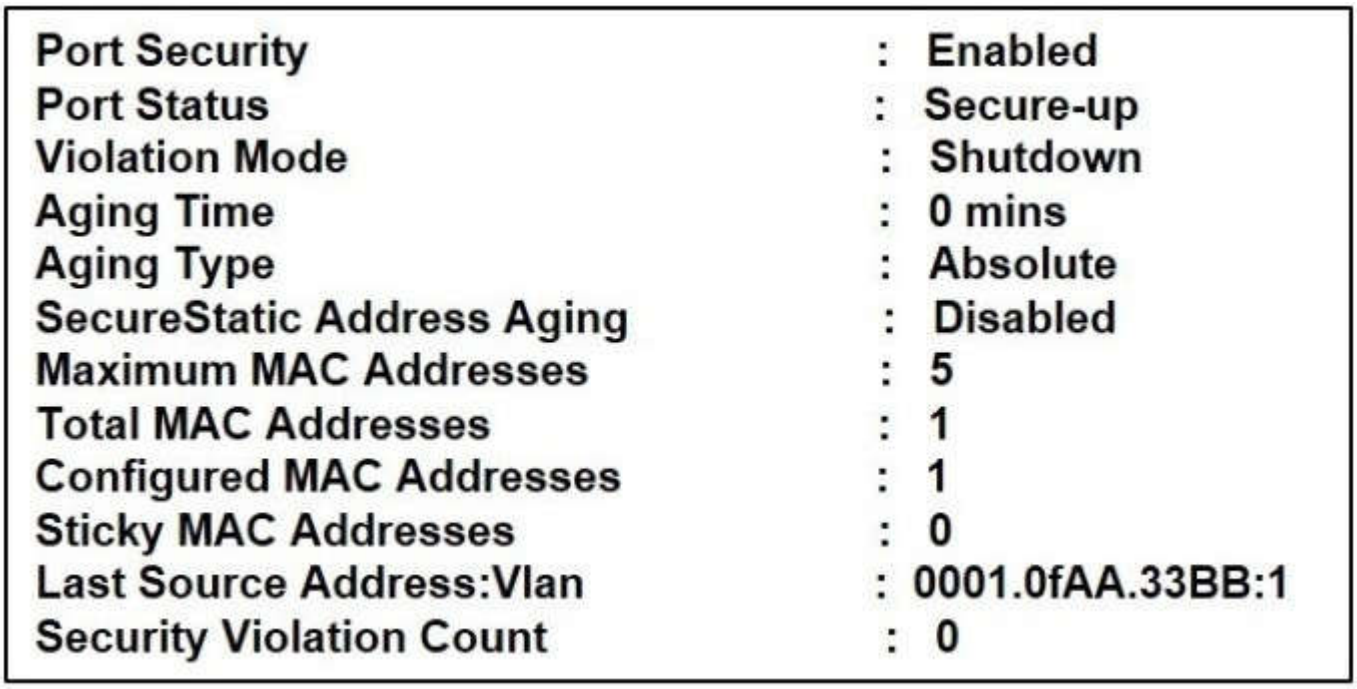
```
R1#show ip route
Gateway of last resort is 10.85.33.14 to network 0.0.0.0
D*EX  0.0.0.0/0
                [170/257024] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/257024] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
        10.0.0.0/8 is variably subnettted, 6692 subnets, 20 masks
B               10.0.0.0/8  [20/0]  via 10.48.144.14, 1w5d
D  EX           10.0.1.0/24
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
D  EX           10.0.2.0/24
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
D  EX           10.0.4.0/24
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
D  EX           10.0.8.0/24
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
D  EX           10.0.16.0/24
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
D  EX           10.0.32.0/24
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
B               10.1.96.0/23  [20/0]  via 10.111.33.217, 2w3d
B               10.1.96.0/24  [20/0]  via 10.111.33.217, 2w3d
B               10.1.97.0/24  [20/0]  via 10.111.33.217, 2w3d
D  EX           10.1.255.240/28
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
D  EX           10.2.0.0/16
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
B               10.2.0.0/24  [20/0]  via 10.48.144.14, 4w5d
B               10.2.96.0/23  [20/0]  via 10.48.144.14, 4w5d
B               10.2.96.0/24  [20/0]  via 10.48.144.14, 3w1d
B               10.2.97.0/24  [20/0]  via 10.48.144.14, 4w5d
D  EX           10.3.0.0/16
                [170/51968] via 10.85.33.14, 7w0d,  TenGigabitEthernet0/2/0, 100
                [170/51968] via 10.85.33.10, 7w0d,  TenGigabitEthernet0/1/0, 100
B               10.5.1.0/24  [20/0]  via 10.111.33.217, 1w4d
B               10.5.5.0/24  [20/0]  via 10.111.33.217, 4w3d
B               10.6.0.0/24  [20/0]  via 10.111.33.217, 3w5d
```

A. there are 20 different network masks within the 10.0.0.0/8 network
B. A static default route to 10.85.33.14 was defined
C. Ten routes are equally load-balanced between Te0/1/0.100 and Te0/2/0.100
D. The 10.0.0.0/8 network was learned via external EIGRP
E. The EIGRP administrative distance was manually changed from 90 to 170

Correct Answer: AC
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 112
Refer to the exhibit. Which statement about the interface that generated the output is true?

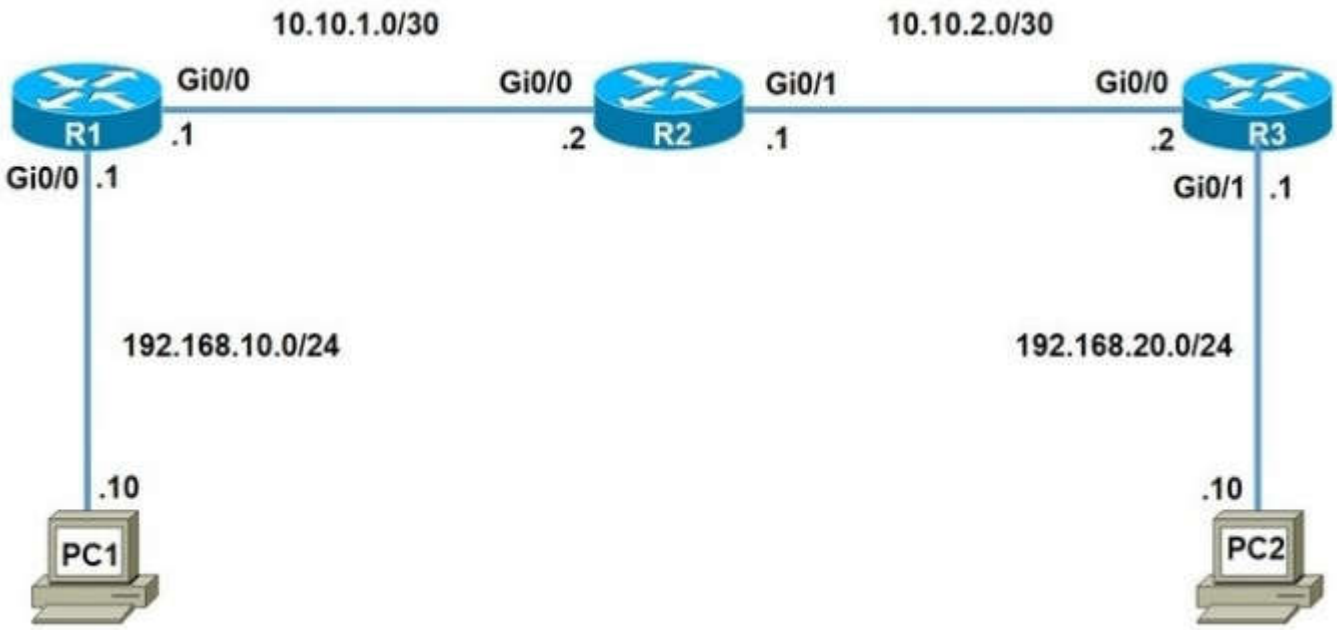


A. Five secure MAC addresses are dynamically learned on the interface.
B. A syslog message is generated when a violation occurs.
C. One secure MAC address is manually configured on the interface.
D. One secure MAC address is dynamically configured on the interface.

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 113
Refer to the exhibit. When PC 1 sends a packet to PC2,the packet has. Which source and destination IP address when it arrives at interface Gi0/0 on router R2?

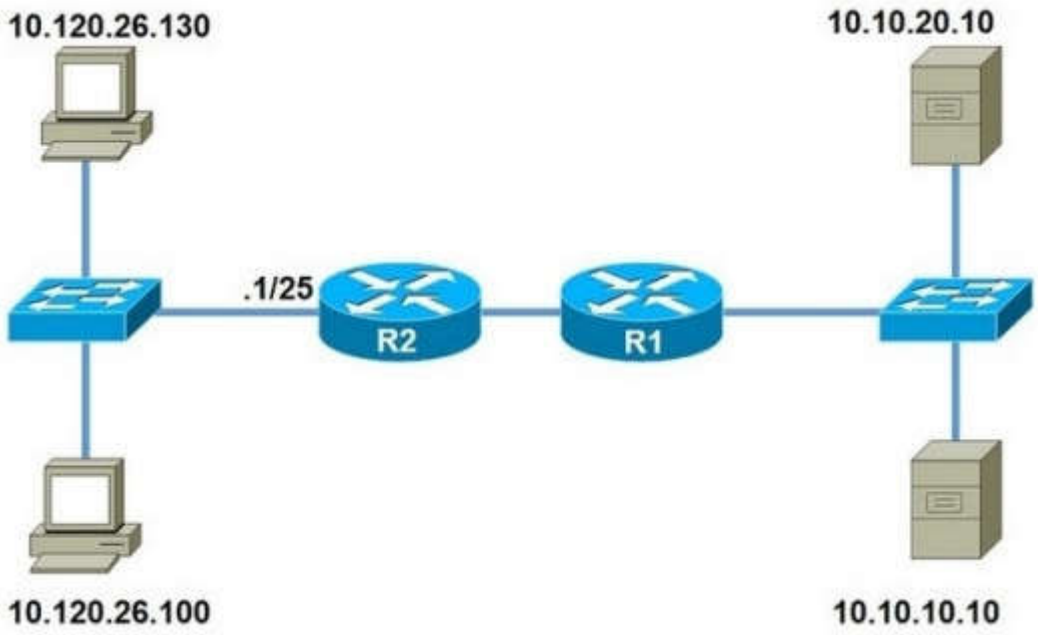


A. source 192.168.10.10 and destination 10.10.2.2
B. source 192.168.20.10 and destination 192.168.20.1
C. source 192.168.10.10 and destination 192.168.20.10
D. source 10.10.1.1 and destination 10.10.2.2

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:
The source and destination IP addresses of the packets are unchanged on all the way. Only source and destination MAC addresses are changed.

QUESTION 114
Refer to the exhibit Users in your office are complaining that they cannot connect to the severs at a remote site. When troubleshooting, you find that you can successfully reach the severs from router R2. What is the most likely reason that the other users are experiencing connection failure?




```
R2
ip dhcp excluded-address 10.120.26.1 10.120.26.10

ip dhcp pool VLAN120
    network 10.120.26.0 255.255.255.0
    default-router 10.120.26.1
```

A. interface ports are shut down on the remote servers
B. The DHCP address pool has been exhausted
C. The ip helper-address command is missing on the R2 interface that connects to the switch
D. VLSM is misconfigured between the router interface and the DHCP pool.

Correct Answer: D
Section: Not categorized
Explanation

Explanation/Reference:

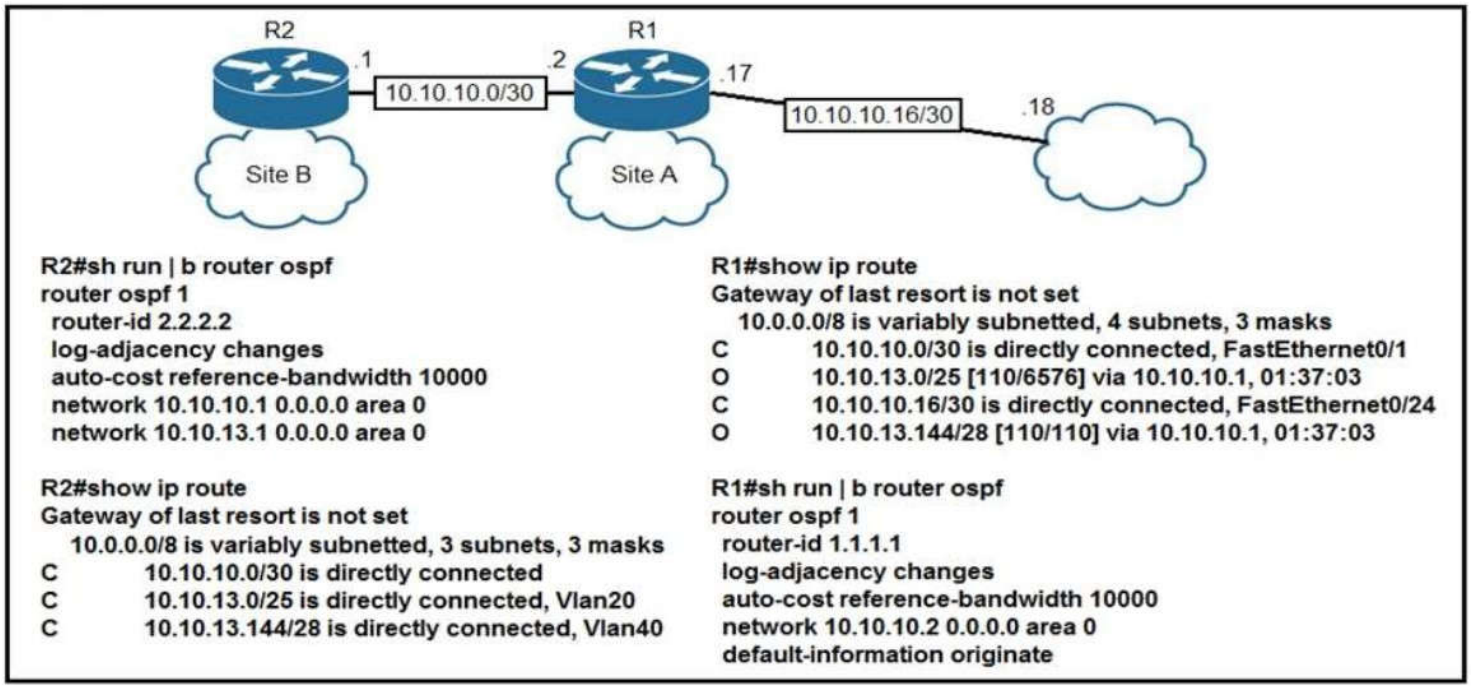
QUESTION 115
After you deploy a new WLAN controller on your network, which two additional tasks should you consider? (Choose two)

A. deploy load balancers
B. configure additional vlans
C. configure multiple VRRP groups
D. deploy POE switches
E. configure additional security policies

Correct Answer: AE
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 116
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: Not categorized
Explanation

Explanation/Reference:

QUESTION 117
Which of the following is the JSON encoding of a dictionary or hash?

A. {“key”:”value”}
B. [“key”,”value”]
C. {“key”,”value”}
D. (“key”:”value”)

Correct Answer: A
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 118
Which option best describes an API?

A. A contract that describes how various components communicate and exchange data with each other.
B. an architectural style (versus a protocol) for designing applications
C. a stateless client-server model
D. request a certain type of data by specifying the URL path that models the data

Correct Answer: A
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 119
Which command verifies whether any IPv6 ACLs are configured on a router?

A. show ipv6 interface
B. show access-list
C. show ipv6 access-list
D. show ipv6 route

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 120
Which command can you enter to allow Telnet to be supported in addition to SSH?

A. transport input telnet ssh
B. transport input telnet
C. no transport input telnet
D. privilege level 15

Correct Answer: A
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 121
AAA stands for authentication, authorization, and accounting

A. False
B. True

Correct Answer: B
Section: Not categorized

Explanation

Explanation/Reference:

QUESTION 122
What will happen if you configure the logging trap debug command on a router?

A. It causes the router to send messages with lower severity levels to the syslog server.
B. It causes the router to send all messages with the severity levels Warning, Error, Critical, and Emergency to the syslog server.
C. It causes the router to send all messages to the syslog server
D. It causes the router to stop sending all messages to the syslog server.

Correct Answer: C
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 123
Which Cisco IOS command will indicate that interface GigabitEthernet 0/0 is configured via DHCP?

A. show ip interface GigabitEthernet 0/0 dhcp
B. show interface GigabitEthernet 0/0
C. show ip interface dhcp
D. show ip interface GigabitEthernet 0/0
E. show ip interface GigabitEthernet 0/0 brief

Correct Answer: D
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 124
Which statement about the nature of NAT overload is true?

A. applies a one-to-many relationship to internal IP addresses
B. applies a one-to-one relationship to internal IP addresses
C. applies a many-to-many relationship to internal IP addresses
D. can be configured only on Gigabit interface

Correct Answer: A
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 125
Which command is used to configure an IPv6 static default route?

A. ipv6 route ::/0 interface next-hop5
B. ipv6 route default interface next-hop
C. ipv6 route 0.0.0.0/0 interface next-hop
D. ip route 0.0.0.0/0 interface next-hop

Correct Answer: A
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 126
Which statement about static and dynamic routes is true?

A. Dynamic routes are manually configured by a network administrator, while static routes are automatically learned and adjusted by a routing protocol.
B. Static routes are manually configured by a network administrator, while dynamic routes are automatically learned and adjusted by a routing protocol.
C. Static routes tell the router how to forward packets to networks that are not directly connected, while dynamic routes tell the router how to forward packets to networks that are directly connected.
D. Dynamic routes tell the router how to forward packets to networks that are not directly connected, while static routes tell the router how to forward packets to networks that are directly connected.

Correct Answer: B
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 127
What is the purpose of the show ip ospf interface command?

A. displaying OSPF-related interface information
B. displaying general information about OSPF routing processes
C. displaying OSPF neighbor information on a per-interface basis
D. displaying OSPF neighbor information on a per-interface-type basis

Correct Answer: A
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 128
How can the Cisco Discovery Protocol be used?

A. to allow a switch to discover the devices that are connected to its ports
B. to determine the hardware platform of the device
C. to determine the IP addresses of connected Cisco devices
D. all of the above

Correct Answer: D

Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 129
How does STP prevent forwarding loops at OSI Layer 2?

A. TTL
B. MAC address forwarding
C. Collision avoidance
D. Port blocking

Correct Answer: D
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 130
Which two statements about EtherChannel technology are true? (Choose two.)

A. EtherChannel provides increased bandwidth by bundling existing FastEthernet or Gigabit Ethernet interfaces into a single EtherChannel.
B. STP does not block EtherChannel links.
C. You can configure multiple EtherChannel links between two switches, using up to a limit of sixteen physical ports.
D. EtherChannel does not allow load sharing of traffic among the physical links within the EtherChannel.
E. EtherChannel allows redundancy in case one or more links in the EtherChannel fail.

Correct Answer: AE
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 131
Which three statements about MAC addresses are correct? (Choose three.)

A. To communicate with other devices on a network, a network device must have a unique MAC address.
B. The MAC address is also referred to as the IP address.
C. The MAC address of a device must be configured in the Cisco IOS CLI by a user with administrative privileges.
D. A MAC address contains two main components, the first of which identifies the manufacturer of the hardware and the second of which uniquely identifies the hardware.
E. An example of a MAC address is 0A:26:38: D6:65:90.
F. A MAC address contains two main components, the first of which identifies the network on which the host resides and the second of which uniquely identifies the host on the network.

Correct Answer: ADE
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 132
Which three statements about network characteristics are true? (Choose three.)

A. Speed is a measure of the data rate in bits per second of a given link in the network.
B. Scalability indicates how many nodes are currently on the network.
C. The logical topology is the arrangement of cables, network devices, and end systems.
D. Availability is a measure of the probability that the network will be available for use when it is required.
E. Reliability indicates the dependability of the components that make up the network.

Correct Answer: ADE
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 133
Which two statements about the purpose of the OSI model are accurate? (Choose two.)

A. Defines the network functions that occur at each layer
B. Facilitates an understanding of how information travels throughout a network
C. Changes in one layer do not impact other layer
D. Ensures reliable data delivery through its layered approach

Correct Answer: AB
Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 134
You have two paths for the 10.10.10.0 network – one that has a feasible distance of 3072 and the other of 6144. What do you need to do to load balance your EIGRP routes?

A. Change the maximum paths to 2
B. Change the configuration so they both have the same feasible distance
C. Change the variance for the path that has a feasible distance of 3072 to 2
D. Change the IP addresses so both paths have the same source IP address

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 135
Which of the following dynamic routing protocols are Distance Vector routing protocols?

A. IS-IS

B. EIGRP
C. OSPF
D. BGP
E. RIP

Correct Answer: BE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 136
Refer to the exhibit. If R1 receives a packet destined to 172.16.1.1, to which IP address does it send the packet?

```
R1@show ip route
Codes:  C - connected, S - static, 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
        i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        ia - IS-IS inter area, * - candidate default, U - per-user static route
        o - ODR, P - periodic downloaded static route

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C   192.168.12.0/24 is directly connected, FastEthernet0/0
C   192.168.13.0/24 is directly connected, FastEthernet0/1
C   192.168.14.0/24 is directly connected, FastEthernet1/0
    192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
O       192.168.10.0/24 [110/2] via 192.168.14.4, 00:02:01, FastEthernet1/0
O       192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:52, FastEthernet0/1
O       192.168.0.0/16 [110/2] via 192.168.15.5, 00:05:01, FastEthernet1/1
D       192.168.10.1/32 [90/52778] via 192.168.12.2, 00:03:44, FastEthernet0/0
O*E2 0.0.0.0/0 [110/1] via 192.168.14.4, 00:00:10, FastEthernet1/0
```

A. 192.168.14.4
B. 192.168.12.2
C. 192.168.13.3
D. 192.168.15.5

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

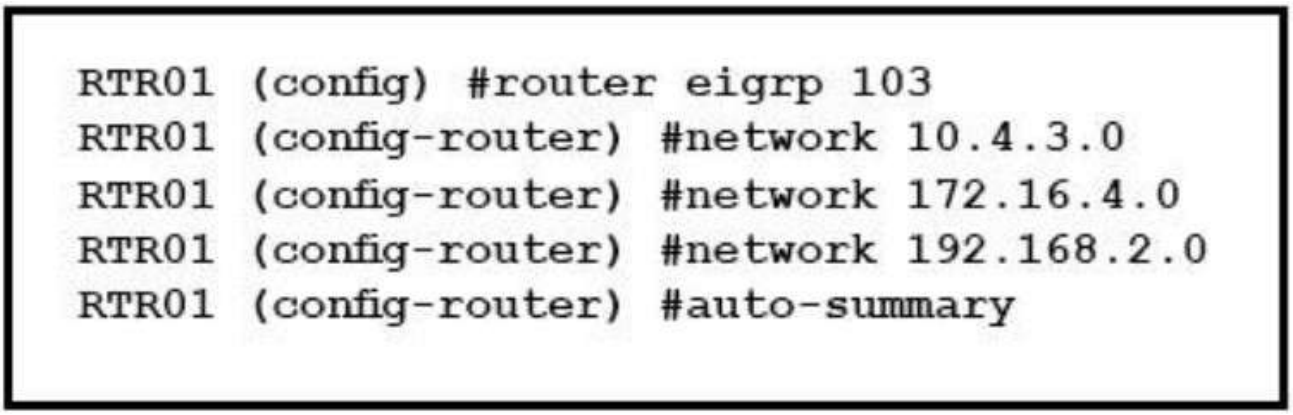
QUESTION 137
Which two VLAN IDs indicate a default VLAN? (Choose two.)

A. 0
B. 1
C. 1005
D. 1006
E. 4096

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:
VLAN 1 is a system default VLAN, you can use this VLAN but you cannot delete it. By default VLAN 1 is use for every port on the switch.
Standard VLAN range from 1002-1005 it's Cisco default for FDDI and Token Ring. You cannot delete VLANs 1002-1005. mostly we don't use VLAN in this range.

QUESTION 138
Refer to the exhibit. If RTR01 is configured as shown, which three addresses will be received by other routers that are running EIGRP on the network? (Choose three)



A. 192.168.2.0
B. 10.4.3.0
C. 10.0.0.0
D. 172.16.0.0
E. 172.16.4.0
F. 192.168.0.0

Correct Answer: ACD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 139
Which two options are the best reasons to use an IPV4 private IP space?(choose two)

A. to enable intra-enterprise communication
B. to implement NAT
C. to connect applications
D. to conserve global address space

E. to manage routing overhead

Correct Answer: AD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 140
Which technique can you use to route IPv6 traffic over an IPv4 infrastructure?

A. NAT
B. 6to4 tunneling
C. L2TPv3
D. dual-stack

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 141
Which three describe the reasons large OSPF networks use a hierarchical design? (Choose Three)

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

Correct Answer: ABE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 142
Which statements describe the routing protocol OSPF? (Choose three.)

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

Correct Answer: ACE
Section: (none)
Explanation

Explanation/Reference:
The OSPF protocol is based on link-state technology, which is a departure from the Bellman-Ford vector based algorithms used in traditional Internet routing protocols such as RIP. OSPF has introduced new concepts such as authentication of routing updates, Variable Length Subnet Masks (VLSM), route summarization, and so forth.
OSPF uses flooding to exchange link-state updates between routers. Any change in routing information is flooded to all routers in the network. Areas are introduced to put a boundary on the explosion of link-state updates. Flooding and calculation of the Dijkstra algorithm on a router is limited to changes within an area.

QUESTION 143
Which command should you enter to view the error log in an EIGRP for IPv6 environment?

A. show ipv6 eigrp neighbors
B. show ipv6 eigrp topology
C. show ipv6 eigrp traffic
D. show ipv6 eigrp events

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 144
Which component of an Ethernet frame is used to notify a host that traffic is coming?

A. start of frame delimiter
B. Type field
C. preamble
D. Data field

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 145
Which command must you enter to guarantee that an HSRP router with higher priority becomes the HSRP primary router after it is reloaded?

A. standby 10 preempt
B. standby 10 version 1
C. standby 10 priority 150
D. standby 10 version 2

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
The “preempt” command enables the HSRP router with the highest priority to immediately become the active router.

QUESTION 146
Which configuration command can u apply to a HSRP router so that its local interface becomes active if all other routers in the group fail?

A. no additional config is required
B. standby 1 track ethernet
C. standby 1 preempt
D. standby 1 priority 250

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Simply because that will be the default behavior routers would follow in the event all other routers in the HSRP group fail, then it would not keep attributes such as priority or preemption.
What preemption does in summary is to make sure that the configured Priority on all routers within the same HSRP group is always respected. That is, if R1 is configured on the HSRP group with a priority of 150 but he stands as active since all other routers currently subscribed to that group have a priority 150, then will router will preempt the current active router and will take over hence becoming the new active router.
With preemption disabled, the new router does not preempt the current active router, unless routers in the group have to renegotiate their roles based on each router's priority at the time of negotiation.

QUESTION 147
You are configuring your edge routers interface with a public IP address for Internet connectivity.
The router needs to obtain the IP address from the service provider dynamically. Which command is needed on interface FastEthernet 0/0 to accomplish this?

A. ip default-gateway
B. ip route
C. ip default-network
D. ip address dhcp
E. ip address dynamic

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 148
Which type does a port become when it receives the best BPDU on a bridge?

A. The designated port
B. The backup port
C. The alternate port
D. The root port

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 149
Which two command sequences must you configure 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 on
B. interface GigabitEthernet0/0/1
channel-group 10 mode active
C. interface GigabitEthernet0/0/1
channel-group 10 mode auto
D. interface port-channel 10
switchport
switchport mode trunk
E. interface port-channel 10
no switchport
ip address 172.16.0.1.255.255.255.0

Correct Answer: BE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 150
Which statement about VLAN configuration is true?

A. The switch must be in VTP server or transparent mode before you can configure a VLAN
B. The switch must be in config-vlan mode before you configure an extended VLAN
C. Dynamic inter-VLAN routing is supported on VLAN2 through VLAN 4064
D. A switch in VTP transparent mode save the VLAN databases to the running configuration only

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 151
Refer to the exhibit. After you apply the given configuration to arouter, the DHCP clients behind the device connot communicate with hosts outside of their subnet. Which action is most likely to correct the problem?

```
ip dhcp pool test
    network 192.168.10.0 /27
    domain-name cisco.com
    dns-server 172.16.1.1 172.16.2.1
    netbios-name-server 172.16.1.10 172.16.2.10
```

A. Configure the dns server on the same subnet as the clients

B. Activate the dhcp pool
C. Correct the subnet mask
D. configure the default gateway

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 152
Refer to the exhibit. How will the router handle a packet destined for 192.0.2.156?

```
router#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 192.168.4.1 to network 0.0.0.0

  10.0.0.0/24 is subnetted, 3 subnets
C           10.0.2.0 is directly connected, Ethernet1
D           10.0.3.0 [90/2195456] via 192.168.1.2, 00:03:01, Serial0
D           10.0.4.0 [90/2195456] via 192.168.3.1, 00:03:01, Serial1
C       192.168.1.0/24 is directly connected, Serial0
D       192.168.2.0/24 [90/2681856] via 192.168.1.2, 00:03:01, Serial0
                       [90/2681856] via 192.168.3.1, 00:03:01, Serial1
C       192.168.3.0/24 is directly connected, Serial1
C       192.168.4.0/24 is directly connected, Serial2
```

A. The router will forward the packet via either Serial0 or Serial1.
B. The router will return the packet to its source.
C. The router will forward the packet via Serial2.
D. The router will drop the packet.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 153
Which unified access point mode continues to serve wireless clients after losing connectivity to the Cisco Wireless LAN Controller?

A. sniffer

B. mesh
C. flexconnect
D. local

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
In previous releases, whenever a FlexConnect access point disassociates from a controller, it moves to the standalone mode. The clients that are centrally switched are disassociated.
However, the FlexConnect access point continues to serve locally switched clients. When the FlexConnect access point rejoins the controller (or a standby controller), all clients are disconnected and are authenticated again. This functionality has been enhanced and the connection between the clients and the FlexConnect access points are maintained intact and the clients experience seamless connectivity. When both the access point and the controller have the same configuration, the connection between the clients and APs is maintained.
Reference: https://www.cisco.com/c/en/us/td/docs/wireless/controller/7-4/configuration/guides/consolidated/b_cg74_CONSOLIDATED/b_cg74_CONSOLIDATED_chapter_010001101.html

QUESTION 154
Refer to exhibit. What Administrative distance has route to 192.168.10.1 ?

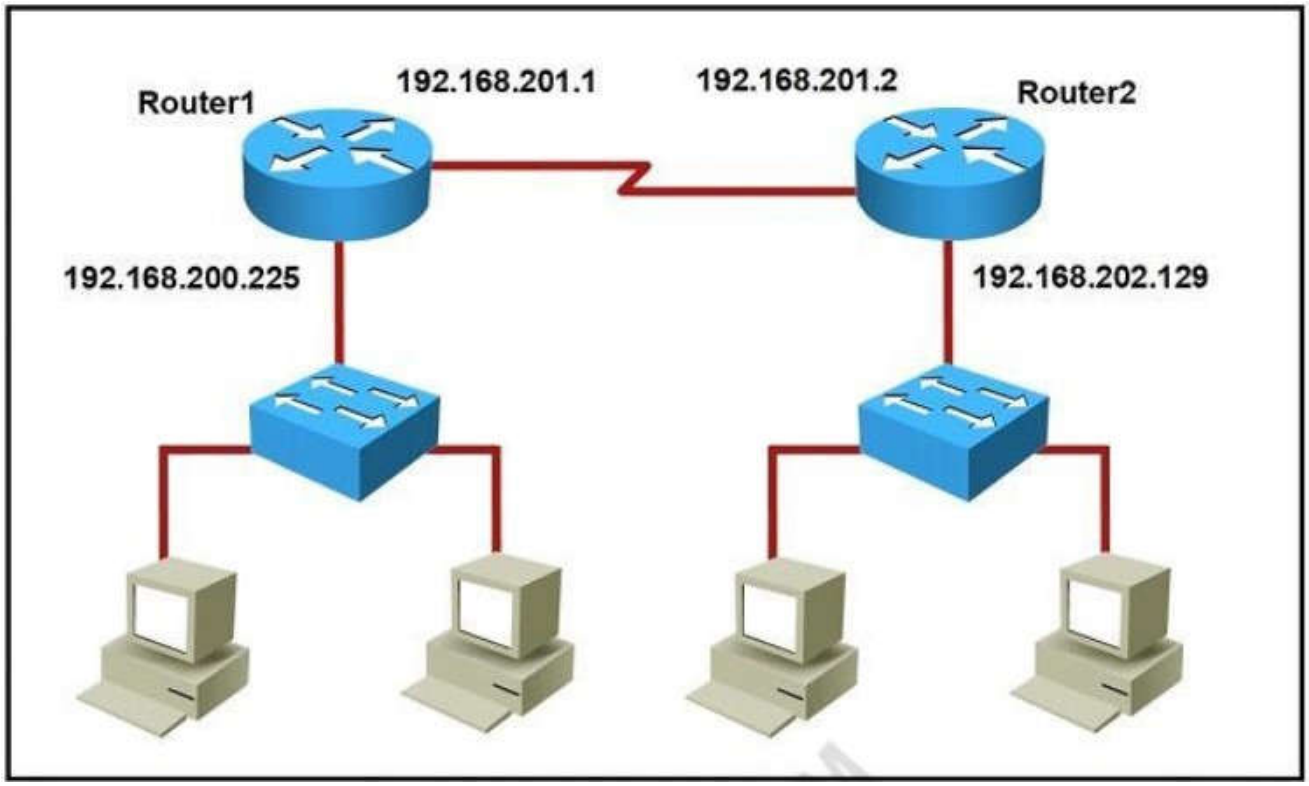
```
R1@show ip route
Codes:  C - connected, S - static, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2
        i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        ia - IS-IS inter area, * - candidate default, U - per-user static route
        o - ODR, P - periodic downloaded static route

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C   192.168.12.0/24 is directly connected, FastEthernet0/0
C   192.168.13.0/24 is directly connected, FastEthernet0/1
C   192.168.14.0/24 is directly connected, FastEthernet1/0
    192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
O       192.168.10.0/24 [110/2] via 192.168.14.4, 00:02:01, FastEthernet1/0
O       192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:52, FastEthernet0/1
O       192.168.0.0/16 [110/2] via 192.168.15.5, 00:05:01, FastEthernet1/1
D       192.168.10.1/32 [90/52778] via 192.168.12.2, 00:03:44, FastEthernet0/0
O*E2 0.0.0.0/0 [110/1] via 192.168.14.4, 00:00:10, FastEthernet1/0
```

A. 1
B. 90
C. 110
D. 120

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 155
Refer to the exhibit. Which command would you use to configure a static route on Router1 to network 192.168.202.0/24 with a nondefault administrative distance?



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

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
The default AD of static route is 1 so we need to configure another number for the static route.

QUESTION 156
Which feature or protocol is required for an IP SLA to measure UDP jitter?

A. LLDP
B. EEM
C. CDP
D. NTP

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

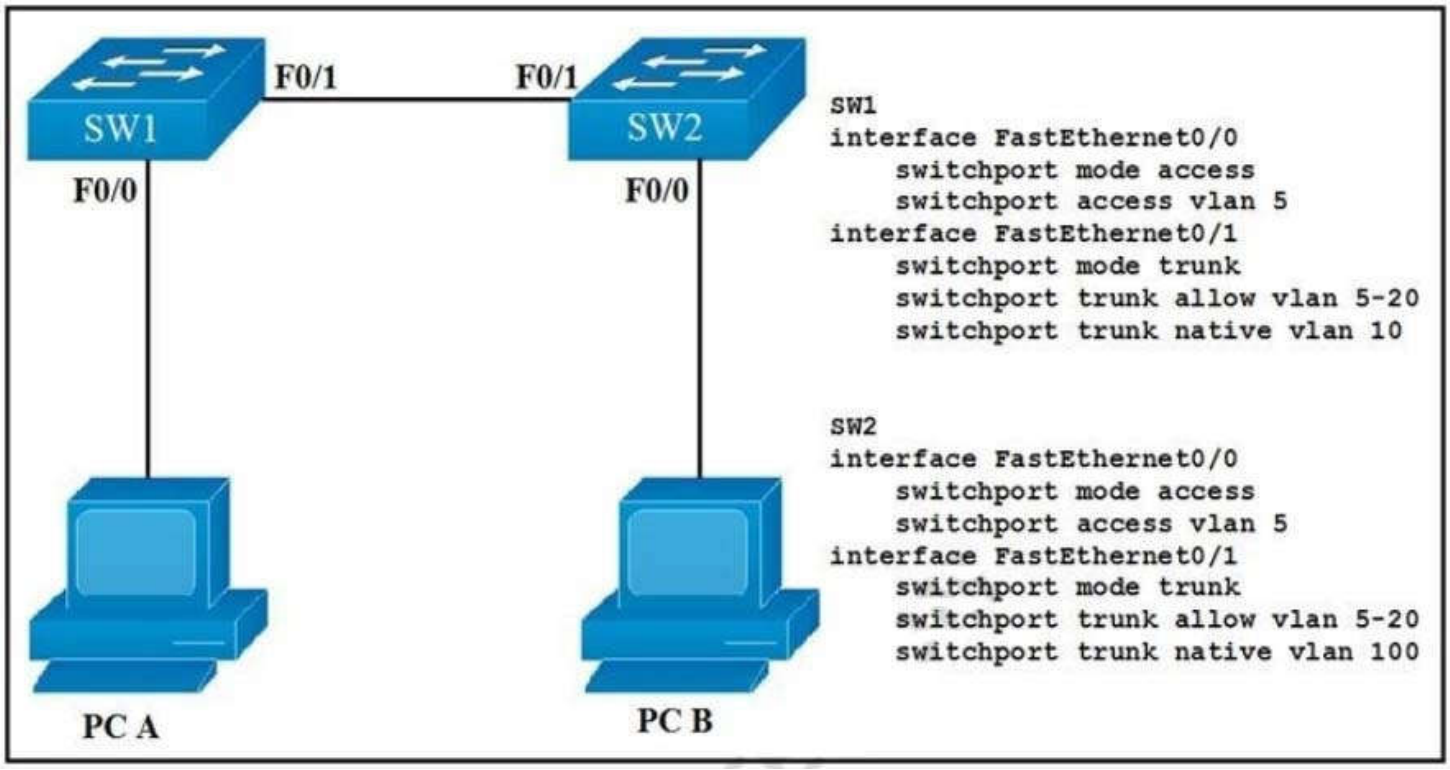
QUESTION 157
Which effete does the aaa new-model configuration command have?

A. It enables AAA services on the device
B. It configures the device to connect to a RADIUS server for AAA
C. It associates a RADIUS server to an group.
D. It configures a local user on the device.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 158
Refer to the exhibit. How will switch SW2 handle traffic from VLAN 10 on SW1?



A. It sends the traffic to VLAN 10.
B. It sends the traffic to VLAN 100.
C. It drops the traffic.
D. It sends the traffic to VLAN 1.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Since SW-1 is configured native VLAN is VLAN10, so traffic coming out of VLAN-10 is untagged, & goes directly to SW-2 Native VLAN: VLAN100, due to VLAN mismatch.

QUESTION 159
Which two commands can you use to configure an actively negotiate EtherChannel? (Choose two)

A. channel-group 10 mode on
B. channel-group 10 mode auto
C. channel-group 10 mode passive
D. channel-group 10 mode desirable
E. channel-group 10 mode active

Correct Answer: DE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 160
What is the binary pattern of unique ipv6 unique local address?

A. 00000000
B. 11111100
C. 11111111
D. 11111101

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
A IPv6 Unique Local Address is an IPv6 address in the block FC00::/7, which means that IPv6 Unique Local addresses begin with 7 bits with exact binary pattern as 1111 110 -> Answer B is correct.
Note: IPv6 Unique Local Address is the approximate IPv6 counterpart of the IPv4 private address. It is not routable on the global Internet.

QUESTION 161
Which two statements about exterior routing protocols are true? (Choose two.)

A. They determine the optimal within an autonomous system.
B. They determine the optimal path between autonomous systems.
C. BGP is the current standard exterior routing protocol.
D. Most modern networking supports both EGP and BGP for external routing.
E. Most modern network routers support both EGP and EIGRP for external routing.

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 162
What is the destination MAC address of a broadcast frame?

A. 00:00:0c:07:ac:01
B. ff:ff:ff:ff:ff:ff
C. 43:2e:08:00:00:0c
D. 00:00:0c:43:2e:08
E. 00:00:0c:ff:ff:ff

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 163
You have configured a router with an OSPF router ID, but its IP address still reflects the physical interface. Which action can you take to correct the problem in the least disruptive way?

A. Reload the OSPF process.
B. Specify a loopback address
C. Reboot the router.
D. Save the router configuration

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Once an OSPF Router ID selection is done, it remains there even if you remove it or configure another OSPF Router ID. So the least disruptive way is to correct it using the command "clear ip ospf process".

QUESTION 164
Which two statements about VTP are true? (Choose two.)

A. All switches must be configured with the same VTP domain name
B. All switches must be configured to perform trunk negotiation.
C. All switches must be configured with a unique VTP domain name
D. The VTP server must have the highest revision number in the domain
E. All switches must use the same VTP version.

Correct Answer: AE
Section: (none)
Explanation

Explanation/Reference:
https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst3750/software/release/12-2_25_sea/configuration/guide/3750scg/swvtp.pdf

QUESTION 165
Which two pieces of information about a Cisco device can Cisco Discovery Protocol communicate? (Choose two.)

A. the native VLAN
B. the trunking protocol
C. the VTP domain

D. the spanning-tree priority
E. the spanning tree protocol

Correct Answer: AC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 166
Refer to the exhibit. On R1 which routing protocol is in use on the route to 192.168.10.1?

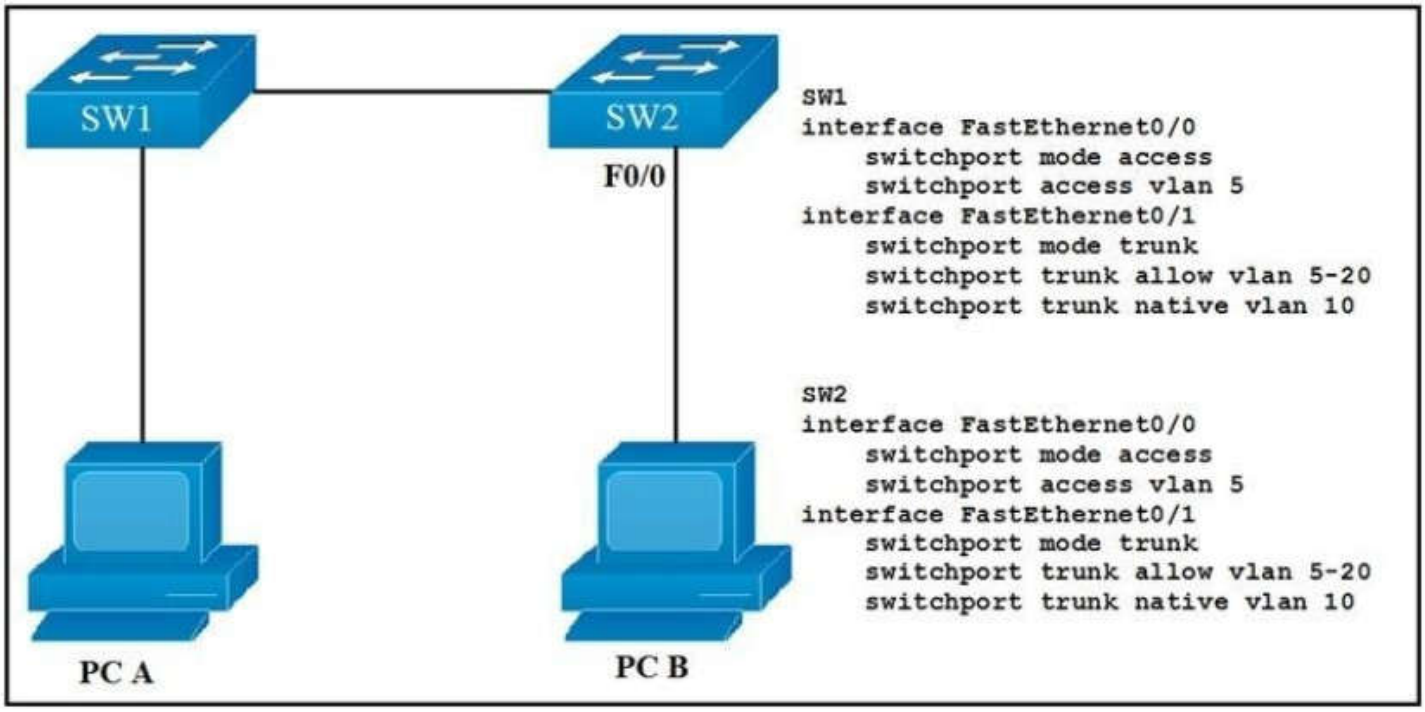
```
R1@show ip route
Codes:  C - connected, S - static, R - RIP, M - mobile, B - BGP
        D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
        N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
        E1 - OSPF external type 1, E2 - OSPF external type 2
        i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
        ia - IS-IS inter area, * - candidate default, U - per-user static route
        o - ODR, P - periodic downloaded static route

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C   192.168.12.0/24 is directly connected, FastEthernet0/0
C   192.168.13.0/24 is directly connected, FastEthernet0/1
C   192.168.14.0/24 is directly connected, FastEthernet1/0
    192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
O       192.168.10.0/24 [110/2] via 192.168.14.4, 00:02:01, FastEthernet1/0
O       192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:52, FastEthernet0/1
O       192.168.0.0/16 [110/2] via 192.168.15.5, 00:05:01, FastEthernet1/1
D       192.168.10.1/32 [90/52778] via 192.168.12.2, 00:03:44, FastEthernet0/0
O*E2 0.0.0.0/0 [110/1] via 192.168.14.4, 00:00:10, FastEthernet1/0
```

A. RIP
B. OSPF
C. IGRP
D. EIGRP

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 167
Refer to the exhibit. Which VLAN ID is associated with the default VLAN in the given environment?



A. VLAN 1
B. VLAN 5
C. VLAN 10
D. VLAN 20

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 168
Which two circumstances can prevent two routers from establishing an OSPF neighbor adjacency? (Choose two.)

A. mismatched autonomous system numbers
B. an ACL blocking traffic from multicast address 224.0.0.10
C. mismatched process IDs
D. mismatched hello timers and dead timers
E. use of the same router ID on both devices

Correct Answer: DE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 169
Which two statements about eBGP neighbor relationships are true? (Choose two)

A. The two devices must reside in different autonomous systems
B. Neighbors must be specifically declared in the configuration of each device
C. They can be created dynamically after the network statement is configured.
D. The two devices must reside in the same autonomous system
E. The two devices must have matching timer settings

Correct Answer: AB
Section: (none)
Explanation

Explanation/Reference:

QUESTION 170
Which two pieces of information can you determine from the output of the show ntp status command? (Choose two)

A. whether the NTP peer is statically configured
B. the IP address of the peer to which the clock is synchronized
C. the configured NTP servers
D. whether the clock is synchronized
E. the NTP version number of the peer

Correct Answer: BD
Section: (none)
Explanation

Explanation/Reference:
Below is the output of the "show ntp status" command. From this output we learn that R1 has a stratum of 10 and it is getting clock from 10.1.2.1.

```
R1#show ntp status
Clock is synchronized, stratum 10, reference is 10.1.2.1
nominal freq is 250.0000 Hz, actual freq is 249.9987 Hz, precision is 2**18
reference time is D5E492E9.98ACB4CF (13:00:25.596 CST Wed Sep 18 2013)
clock offset is 15.4356 msec, root delay is 52.17 msec
root dispersion is 67.61 msec, peer dispersion is 28.12 msec
```

QUESTION 171
Which keyword in a NAT configuration enables the use of one outside IP address for multiple inside hosts?

A. source
B. static
C. pool
D. overload

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
By adding the keyword "overload" at the end of a NAT statement, NAT becomes PAT (Port Address

Translation). This is also a kind of dynamic NAT that maps multiple private IP addresses to a single public IP address (many-to-one) by using different ports. Static NAT and Dynamic NAT both require a one-to-one mapping from the inside local to the inside global address. By using PAT, you can have thousands of users connect to the Internet using only one real global IP address. PAT is the technology that helps us not run out of public IP address on the Internet.
This is the most popular type of NAT.
An example of using "overload" keyword is shown below:
R1(config)# ip nat inside source list 1 interface ethernet1 overload

QUESTION 172
Which two pieces of information can you learn by viewing the routing table? (Choose two)

A. whether an ACL was applied inbound or outbound to an interface
B. the EIGRP or BGP autonomous system
C. whether the administrative distance was manually or dynamically configured
D. Which neighbor adjacencies are established
E. the length of time that a route has been known

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 173
Which NAT term is defined as a group of addresses available for NAT use?

A. NAT pool
B. dynamic NAT
C. static NAT
D. one-way NAT

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 174
Which command is used to enable LLDP globally on a Cisco IOS ISR?

A. lldp run
B. lldp enable
C. lldp transmit
D. cdp run
E. cdp enable

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Link Layer Discovery Protocol (LLDP) is a industry standard protocol that allows devices to advertise, and discover connected devices, and there capabilities (same as CDP of Cisco). To enable it on Cisco devices, we

have to use this command under global configuration mode:
Sw(config)# lldp run

QUESTION 175
Refer to the exhibit. After you apply the give configurations to R1 and R2 you notice that OSPFv3 fails to start. Which reason for the problem is most likely true ?

```
R1
ipv6 unicast-routing

interface FastEthernet0/0
     no ip address
ipv6 enable
     ipv6 address 3001:DBB:13::1/64
     ipv6 ospf 1 area 0
ipv6 router ospf 1
router-id 172.16.1.1

R2
ipv6 unicast-routing

interface FastEthernet0/0
     no ip address
     ipv6 enable
     ipv6 address 2001:DBB:12::12/64
     ipv6 ospf 1 area 3
ipv6 router ospf 1
router-id 172.16.3.3
```

A. The area numbers on R1 and R2 are mismatched
B. The IPv6 network addresses on R1 and R2 are mismatched
C. The autonomous system numbers on R1 and R2 are mismatched
D. The router ids on R1 and R2 are mismatched

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 176
Which command should you enter to configure a device as an NTP sever?

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

Correct Answer: D
Section: (none)

Explanation

Explanation/Reference:
To configure a Cisco device as an Authoritative NTP Server, use the ntp master [stratum] command.
To configure a Cisco device as a NTP client, use the command ntp server <IP address>. For example:
Router(config)#ntp server 192.168.1.1. This command will instruct the router to query 192.168.1.1 for the time.

QUESTION 177
Which feature or protocol determines whether the QOS on the network is sufficient to support IP services?

A. LLDP
B. CDP
C. IP SLA
D. EEM

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
IP SLA allows an IT professional to collect information about network performance in real time.
Therefore it helps determine whether the QoS on the network is sufficient for IP services or not.
Cisco IOS Embedded Event Manager (EEM) is a powerful and flexible subsystem that provides realtime network event detection and onboard automation. It gives you the ability to adapt the behavior of your network devices to align with your business needs.

QUESTION 178
Refer to the exhibit. Which feature is enabled by this configuration?

```
R1(config)#ip nat pool cisco 10.1.1.0 10.1.1.50 255.255.255.0
```

A. static NAT translation
B. a DHCP pool
C. a dynamic NAT address pool
D. PAT

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 179
In a CDP environment, what happens when the CDP interface on an adjacent device is configured without an IP address?

A. CDP becomes inoperable on that neighbor
B. CDP uses the IP address of another interface for that neighbor
C. CDP operates normally,but it cannot provide IP address information for that neighbor
D. CDP operates normally,but it cannot provide any information for that neighbor

Correct Answer: C
Section: (none)

Explanation

Explanation/Reference:
Although CDP is a Layer 2 protocol but we can check the neighbor IP address with the "show cdp neighbor detail" command. If the neighbor does not has an IP address then CDP still operates without any problem. But the IP address of that neighbor is not provided.

QUESTION 180
Which two statements about NTP operations are true? (Choose two.)

A. NTP uses UDP over IP.
B. Cisco routers can act as both NTP authoritative servers and NTP clients.
C. Cisco routers can act only as NTP servers.
D. Cisco routers can act only as NTP clients.
E. NTP uses TCP over IP.

Correct Answer: AB
Section: (none)
Explanation

Explanation/Reference:

QUESTION 181
Which command should you enter to configure an LLDP delay time of 5 seconds?

A. lldp timer 5000
B. lldp holdtime 5
C. lldp reinit 5000
D. lldp reinit 5

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
+ lldp holdtime seconds: Specify the amount of time a receiving device should hold the information from your device before discarding it
+ lldp reinit delay: Specify the delay time in seconds for LLDP to initialize on an interface
+ lldp timer rate: Set the sending frequency of LLDP updates in seconds
Reference: Click here

QUESTION 182
Which value is used to determine the active router in an HSRP default configuration?

A. Router loopback address
B. Router IP address
C. Router priority
D. Router tracking number

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
In the case of an equal priority, the router with the highest IP address for the respective group is elected as

active. Furthermore, if there are more than two routers in the group, the second highest IP address determines the standby router and the other router/routers are in the listen state.

QUESTION 183
Which statement about Cisco Discovery Protocol is true?

A. It is a Cisco-proprietary protocol.
B. It runs on the network layer.
C. It can discover information from routers, firewalls, and switches.
D. It runs on the physical layer and the data link layer.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 184
Which value can you modify to configure a specific interface as the preferred forwarding interface?

A. The interface number
B. The port priority
C. The VLAN priority
D. The hello time

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 185
When configuring an EtherChannel bundle, which mode enables LACP only if a LACP device is detected?

A. Passive
B. Desirable
C. On
D. Auto
E. Active

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
The LACP is Link Aggregation Control Protocol. LACP is an open protocol, published under the 802.3ad.
The modes of LACP are active, passive or on. The side configured as "pasive" will waiting the other side that should an Active for the Etherchannel to be established.
PAgP is Port-Aggregation Protocol. It is Cisco proprietary protocol. The mode are On, Desirable or Auto.
Desirable - Auto will establish a EtherChannel.
An example of how to configure an Etherchannel:
SwitchFormula1>enable
SwitchFormula1#configure terminal
SwitchFormula1(config)# interface range f0/5 -14

SwitchFormula1(config-if-range)# channel-group 13 mode ?
active Enable LACP unconditionally
auto Enable PAgP only if a PAgP device is detected
desirable Enable PAgP unconditionally
on Enable Etherchannel only
passive Enable LACP only if a LACP device is detected

QUESTION 186
Which command should you enter to verify the priority of a router in an HSRP group?

A. show hsrp
B. show sessions
C. show interfaces
D. show standby

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
The following is sample output from the show standby command:

```
Router# show standby

Ethernet0/1 - Group 1
  State is Active
   2 state changes, last state change 00:30:59
  Virtual IP address is 10.1.0.20
   Secondary virtual IP address 10.1.0.21
  Active virtual MAC address is 0004.4d82.7981
   Local virtual MAC address is 0004.4d82.7981 (bia)
  Hello time 4 sec, hold time 12 sec
   Next hello sent in 1.412 secs
  Gratuitous ARP 14 sent, next in 7.412 secs
  Preemption enabled, min delay 50 sec, sync delay 40 sec
  Active router is local
  Standby router is 10.1.0.6, priority 75 (expires in 9.184 sec)
  Priority 95 (configured 120)
   Tracking 2 objects, 0 up
      Down Interface Ethernet0/2, pri 15
      Down Interface Ethernet0/3
Group name is "HSRP1" (cfgd)
Follow by groups:
    Et1/0.3 Grp 2 Active 10.0.0.254 0000.0c07.ac02 refresh 30 secs (nex
    Et1/0.4 Grp 2 Active 10.0.0.254 0000.0c07.ac02 refresh 30 secs (nex
  Group name is "HSRP1", advertisement interval is 34 sec
```

QUESTION 187
Refer to the exhibit. Which Command do you enter so that R1 advertises the loopback0 interface to the BGP Peers?

```
R1
interface Loopback0
    ip address 172.16.1.33 255.255.255.224

interface FastEthernet0/0
    ip address 192.168.12.1 255.255.255.0

router bgp 100
neighbor 192.168.12.2 remote-as 100
```

A. Network 172.16.1.32 mask 255.255.255.224
B. Network 172.16.1.0 0.0.0.255
C. Network 172.16.1.32 255.255.255.224
D. Network 172.16.1.33 mask 255.255.255.224
E. Network 172.16.1.32 mask 0.0.0.31
F. Network 172.16.1.32 0.0.0.31

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 188
For what two purposes does the Ethernet protocol use physical addresses?

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

Correct Answer: AE
Section: (none)
Explanation

Explanation/Reference:

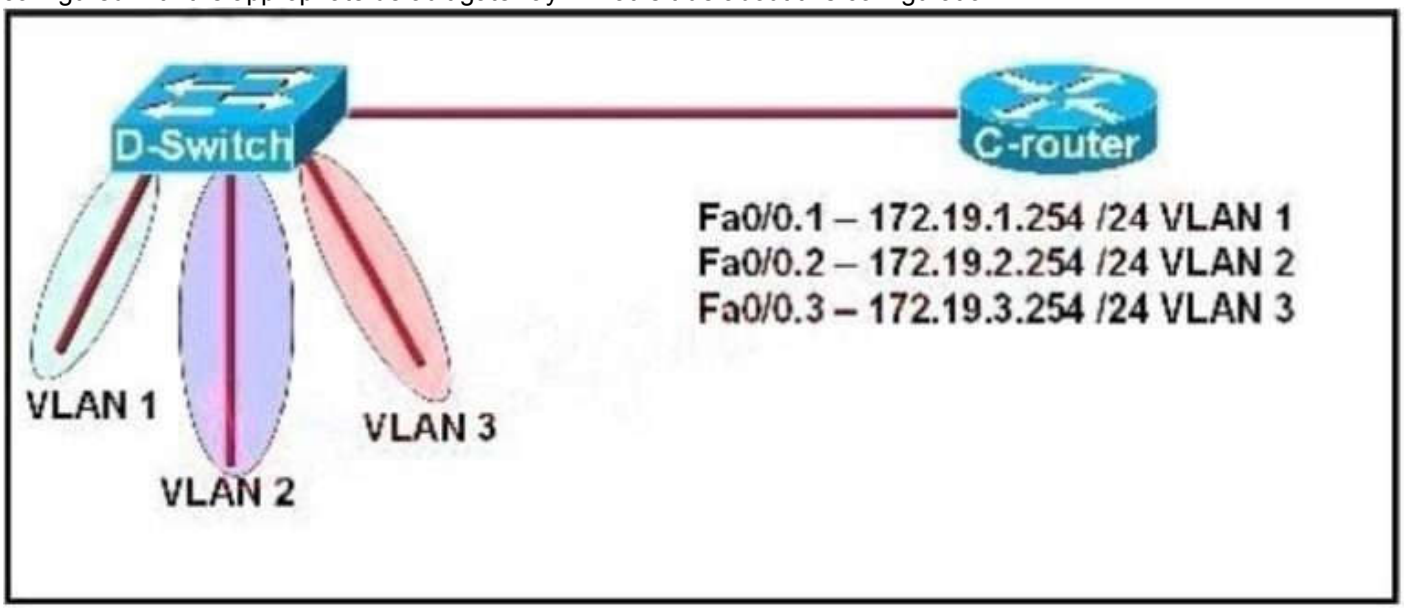
QUESTION 189
Which command is used to display the collection of OSPF link states?

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
The “show ip ospf database” command displays the link states. Here is an example:
Here is the lsa database on R2.
R2#show ip ospf database
OSPF Router with ID (2.2.2.2) (Process ID 1)
Router Link States (Area 0)
Link ID ADV Router Age Seq# Checksum Link count2.2.2.2 2.2.2.2 793 0x80000003 0x004F85 210.4.4.4 10.4.4.4 776 0x80000004 0x005643 1111.111.111.111 111.111.111.111 755 0x80000005 0x0059CA 2133.133.133.133 133.133.133.133 775 0x80000005 0x00B5B1 2 Net Link States (Area 0) Link ID ADV Router Age Seq# Checksum10.1.1.1 111.111.111.111 794 0x80000001 0x001E8B10.2.2.3 133.133.133.133 812 0x80000001 0x004BA910.4.4.1 111.111.111.111 755 0x80000001 0x007F1610.4.4.3 133.133.133.133 775 0x80000001 0x00C31F

QUESTION 190
Refer to the exhibit. C-router is to be used as a “router-on-a-stick” to route between the VLANs. All the interfaces have been properly configured and IP routing is operational. The hosts in the VLANs have been configured with the appropriate default gateway. What is true about this configuration?



A. These commands need to be added to the configuration:
C-router(config)# router eigrp 123
C-router(config-router)# network 172.19.0.0
B. These commands need to be added to the configuration:
C-router(config)# router ospf 1
C-router(config-router)# network 172.19.0.0 0.0.3.255
C. These commands need to be added to the configuration:

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

D. No further routing configuration is required.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Since all the same router (C-router) is the default gateway for all three VLANs, all traffic destined to a different VLAN will be sent to the C-router. The C-router will have knowledge of all three networks since they will appear as directly connected in the routing table. Since the C-router already knows how to get to all three networks, no routing protocols need to be configured.

QUESTION 191
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. port-to-multipoint
B. broadcast
C. point-to-point
D. non-broadcast

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
The default OSPF network type for HDLC and PPP on Serial link is point-to-point (while the default OSPF network type for Ethernet link is Broadcast).

QUESTION 192
Refer to the exhibit. Which address and mask combination represents a summary of the routes learned by EIGRP?

```
Gateway of last resort is not set

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

A. 192.168.25.0 255.255.255.240
B. 192.168.25.0 255.255.255.252

C. 192.168.25.16 255.255.255.240
D. 192.168.25.16 255.255.255.252
E. 192.168.25.28 255.255.255.240
F. 192.168.25.28 255.255.255.252

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
The binary version of 20 is 10100.
The binary version of 16 is 10000.
The binary version of 24 is 11000.
The binary version of 28 is 11100.
The subnet mask is /28. The mask is 255.255.255.240.
Note:
From the output above, EIGRP learned 4 routes and we need to find out the summary of them:
+ 192.168.25.16
+ 192.168.25.20
+ 192.168.25.24
+ 192.168.25.28
-> The increment should bE. 28 ?16 = 12 but 12 is not an exponentiation of 2 so we must choose 16 (24).
Therefore the subnet mask is /28 (=1111 1111.1111 1111.1111 1111.11110000) = 255.255.255.240
So the best answer should be 192.168.25.16 255.255.255.240

QUESTION 193
Refer to the exhibit. A network associate has configured OSPF with the command:
City(config-router)# network 192.168.12.64 0.0.0.63 area 0.
After completing the configuration, the associate discovers that not all the interfaces are participating in OSPF.
Which three of the interfaces shown in the exhibit will participate in OSPF according to this configuration statement? (Choose three.)

```
City#show ip interface brief

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

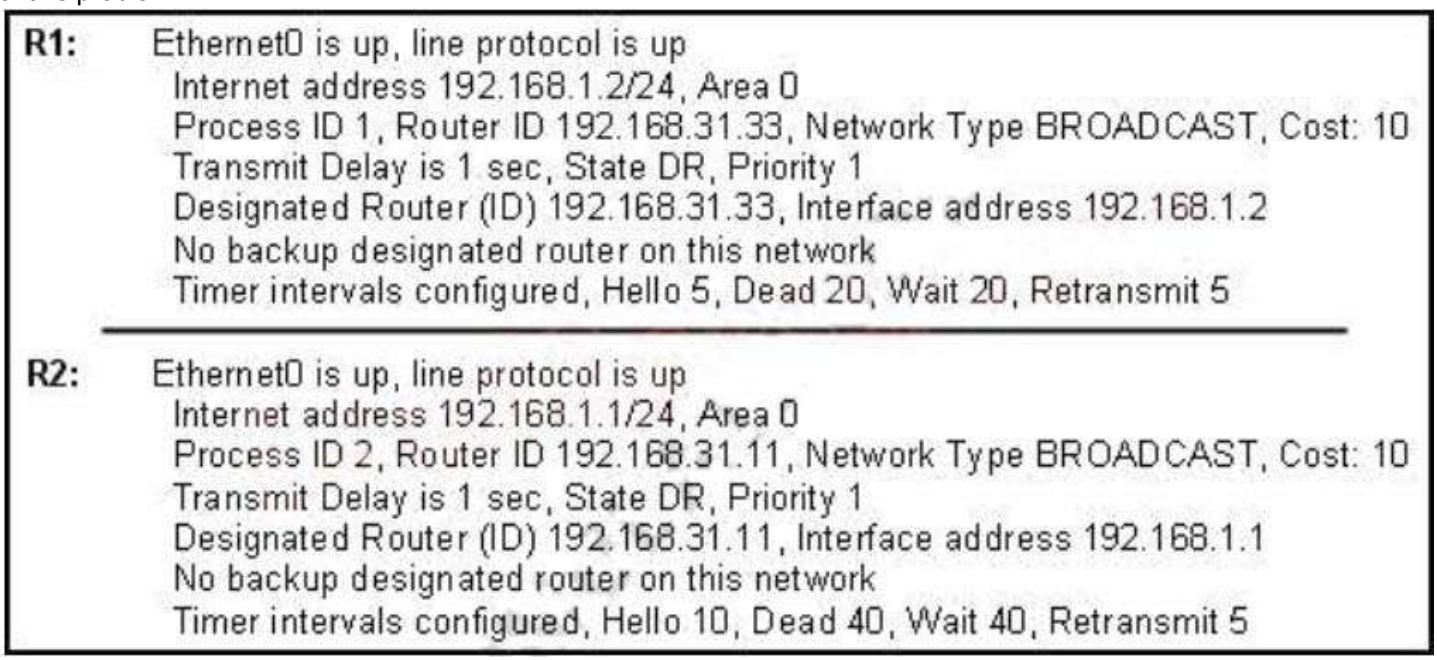
A. FastEthernet0 /0
B. FastEthernet0 /1
C. Serial0/0
D. Serial0/1.102
E. Serial0/1.103

F. Serial0/1.104

Correct Answer: BCD
Section: (none)
Explanation

Explanation/Reference:
The "network 192.168.12.64 0.0.0.63 equals to network 192.168.12.64/26. This network has:
+ Increment: 64 (/26= 1111 1111.1111 1111.1111 1111.1100 0000) + Network address: 192.168.12.64
+ Broadcast address: 192.168.12.127
Therefore all interface in the range of this network will join OSPF.

QUESTION 194
A network administrator is troubleshooting the OSPF configuration of routers R1 and R2. The routers cannot establish an adjacency relationship on their common Ethernet link. The graphic shows the output of the show ip ospf interface e0 command for routers R1 and R2. Based on the information in the graphic, what is the cause of this problem?

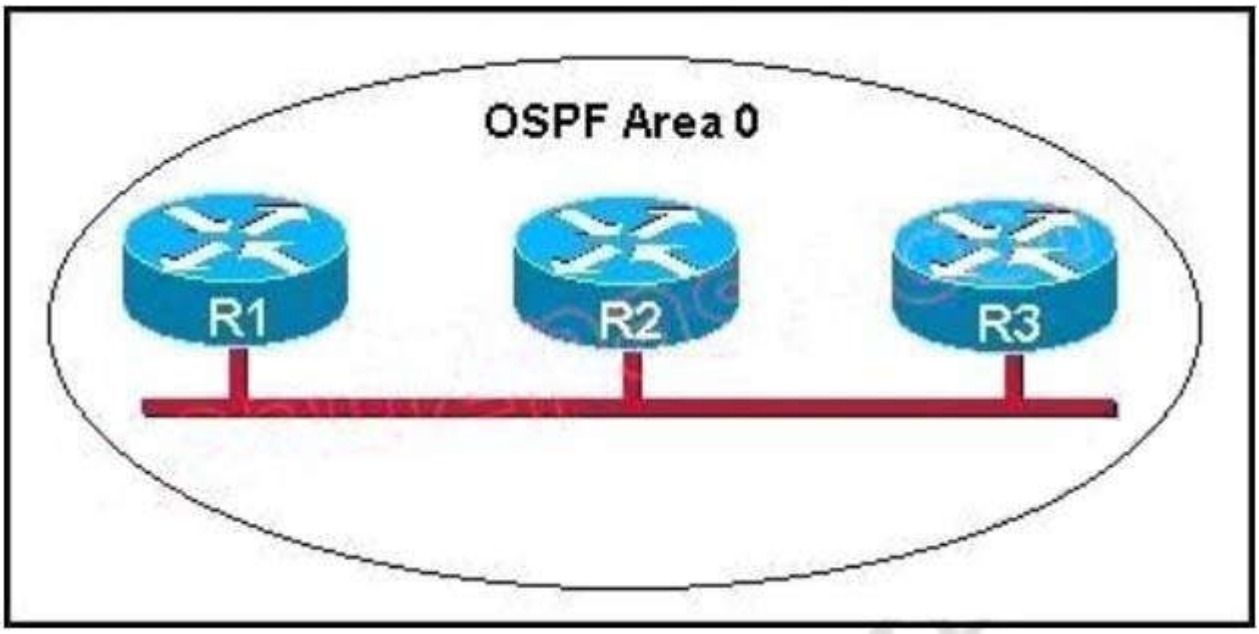


A. The OSPF area is not configured properly.
B. The OSPF area is not configured properly.
C. The cost on R1 should be set higher.
D. The hello and dead timers are not configured properly.
E. A backup designated router needs to be added to the network.
F. The OSPF process ID numbers must match.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 195
Refer to the graphic. R1 is unable to establish an OSPF neighbor relationship with R3. What are possible reasons for this problem? (Choose two.)



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

Correct Answer: DF
Section: (none)
Explanation

Explanation/Reference:
This question is to examine the conditions for OSPF to create neighborhood. So as to make the two routers become neighbors, each router must be matched with the following items:
1. The area ID and its types;
2. Hello and failure time interval timer;
3. OSPF Password (Optional);

QUESTION 196
Refer to the exhibit. Given the output for this command, if the router ID has not been manually set, what router ID will OSPF use for this router?

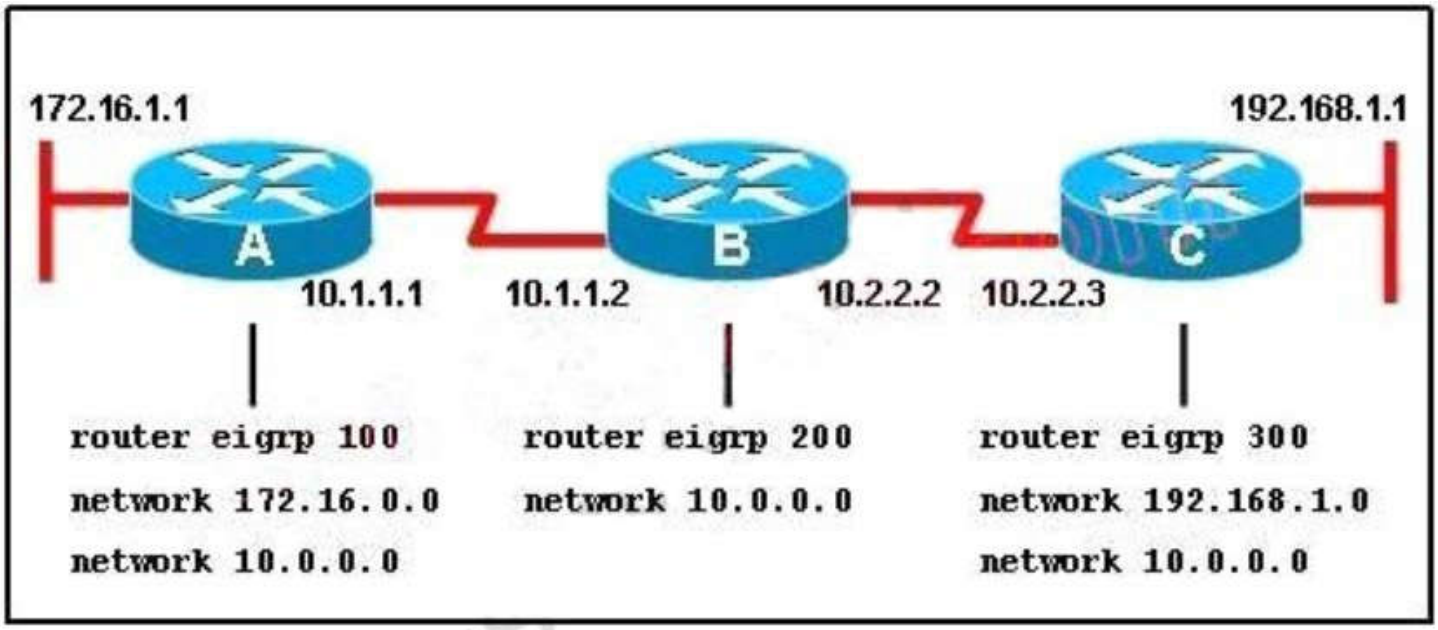
```
RouterD# show ip interface brief
Interface          IP-Address      OK? Method  Status  Protocol
FastEthernet0/0    192.168.5.3     YES manual  up      up
FastEthernet0/1    10.1.1.2        YES manual  up      up
Loopback0          172.16.5.1      YES NVRAM   up      up
Loopback1          10.154.154.1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

A. 10.1.1.2
B. 10.154.154.1
C. 172.16.5.1
D. 192.168.5.3

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
The highest IP address of all loopback interfaces will be chosen -> Loopback 0 will be chosen as the router ID.

QUESTION 197
Refer to the exhibit. When running EIGRP, what is required for RouterA to exchange routing updates with RouterC?



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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
This question is to examine the understanding of the interaction between EIGRP routers. The following information must be matched so as to create neighborhood. EIGRP routers to establish, must match the following information:
1. AS Number;
2. K value.

QUESTION 198
Refer to the exhibit. Which rule does the DHCP server use when there is an IP address conflict?

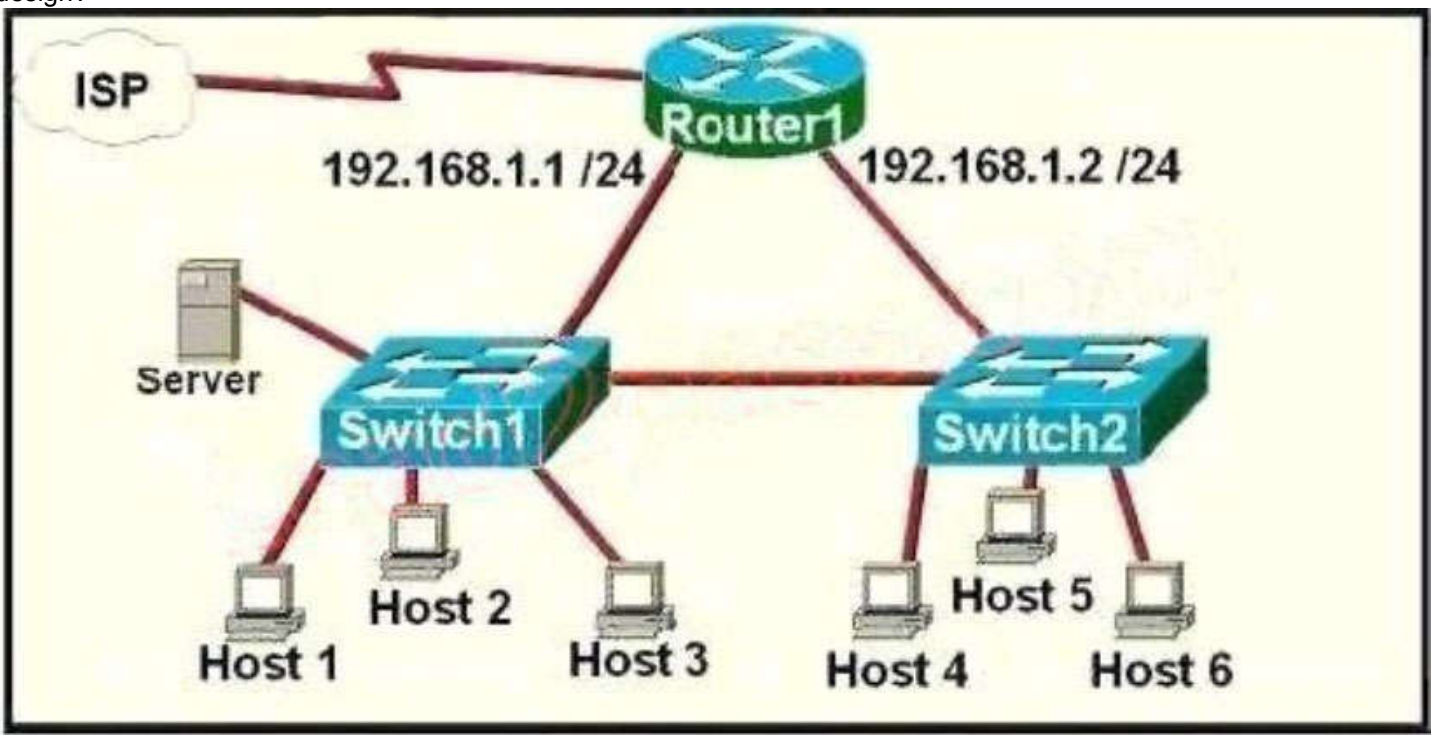
```
Router# show ip dhcp conflict
IP address        Detection method   Detection time
172.16.1.32       Ping               Feb 16 1998 12:28 PM
172.16.1.64       Gratuitous ARP     Feb 23 1998 08:12 AM
```

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
An address conflict occurs when two hosts use the same IP address. During address assignment, DHCP checks for conflicts using ping and gratuitous ARP. If a conflict is detected, the address is removed from the pool. The address will not be assigned until the administrator resolves the conflict.

QUESTION 199
Refer to the exhibit. A network technician is asked to design a small network with redundancy. The exhibit represents this design, with all hosts configured in the same VLAN. What conclusions can be made about this design?



A. This design will function as intended.
B. Spanning-tree will need to be used.
C. The router will not accept the addressing scheme.

D. The connection between switches should be a trunk.
E. The router interfaces must be encapsulated with the 802.1Q protocol.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Each interface on a router must be in a different network. If two interfaces are in the same network, the router will not accept it and show error when the administrator assigns it.

QUESTION 200
What benefit does controller-based networking provide versus traditional networking?

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

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 201
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: (none)
Explanation

Explanation/Reference:

QUESTION 202
What are two descriptions of three-tier network topologies? (Choose two)

A. The core and distribution layers perform the same functions
B. The access layer manages routing between devices in different domains
C. The network core is designed to maintain continuous connectivity when devices fail.
D. The core layer maintains wired connections for each host
E. The distribution layer runs Layer 2 and Layer 3 technologies

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 203
What is the expected outcome when an EUI-64 address is generated?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 204
Which function docs an SNMP agent perform?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 205
R1 has learned route 10.10.10.0/24 via numerous routing protocols. Which route is installed?

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 206
What is a characteristic of spine-and-leaf architecture?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 207
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. configure a stateful DHCPv6 server on the network
B. enable SLAAC on an interface
C. disable the EUI-64 bit process
D. explicitly assign a link-local address

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 208
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. metric
C. cost
D. administrative distance

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 209
Router R1 must send all traffic without a matching routing-table entry to 192.168.1.1. Which configuration accomplishes this task?

```
R1#Config t
R1(config)#ip routing
R1(config)#ip route default-route 192.168.1.1
```

```
R1#Config t
R1(config)#ip routing
R1(config)#ip route 192.168.1.1 0.0.0.0 0.0.0.0
```

```
R1#Config t
R1(config)#ip routing
R1(config)#ip route 0.0.0.0 0.0.0.0 192.168.1.1
```

```
R1#Config t
R1(config)#ip routing
R1(config)#ip default-gateway 192.168.1.1
```

A. Option A
B. Option B
C. Option C
D. Option D

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

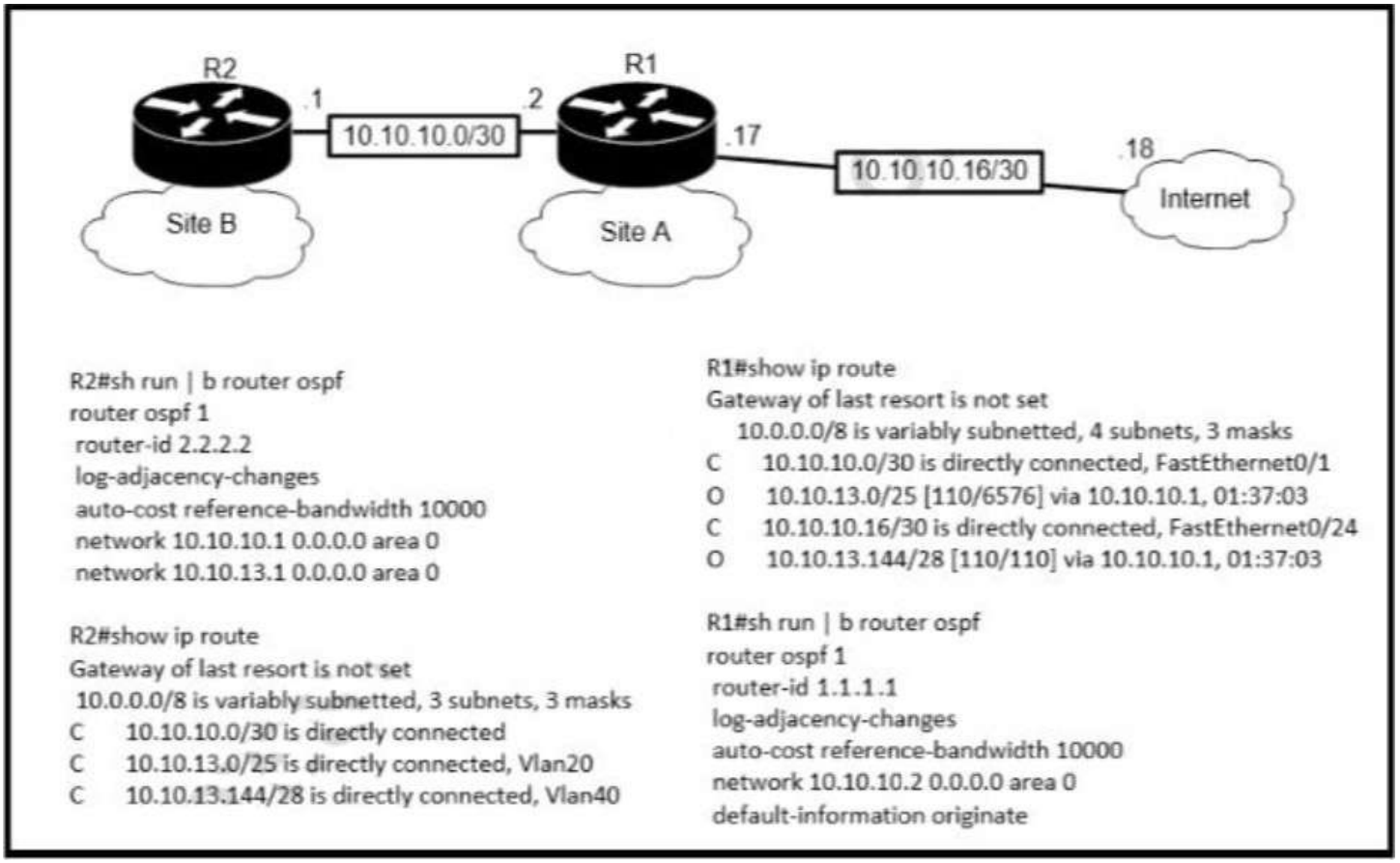
QUESTION 210
Which WPA3 enhancement protects against hackers viewing traffic on the Wi-Fi network?

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 211
Refer to the exhibit. An engineer is bringing up a new circuit to the MPLS provider on the Gi0/1 interface of Router1 The new circuit uses eBGP and teams the route to VLAN25 from the BGP path What s 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. Route 10.10.13.0/25 is updated in the routing table as being learned from interface Gi0/1.
C. Traffic to 10.10.13.0/25 is asymmeteical
D. Route 10.10.13.0/25 learned via the GiO/0 interface remains in the routing table

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 212
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 EIGRP route because it has the lowest administrative distance.
C. It selects the OSPF route because it has the lowest cost.
D. It selects the RIP route because it has the longest prefix inclusive of the destination address.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 213
Refer to the exhibit.

```
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)
```

Which two commands were used to create port channel 10? (Choose two)

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

A. Option A
B. Option B
C. Option C
D. Option D
E. Option E

Correct Answer: AC
Section: (none)
Explanation

Explanation/Reference:

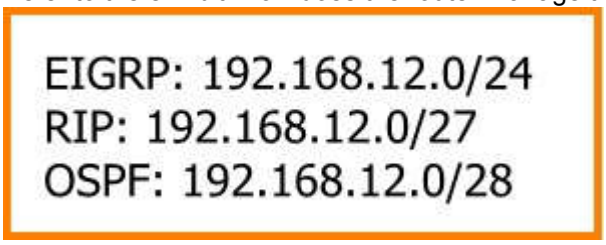
QUESTION 214
What is a difference between RADIUS and TACACS+?

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

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 215
Refer to the exhibit. How does the router manage traffic to 192.168.12.16?



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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 216
What is an advantage of Cisco DNA Center versus traditional campus device management?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 217
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 packets fail to match any permit statement
B. A matching permit statement is too high in the access test
C. A matching permit statement is too broadly defined
D. The ACL is empty
E. A matching deny statement is too high in the access list

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 218
How do traditional campus device management and Cisco DNA Center device management differ in regards to deployment?

A. Cisco DNA Center device management can deploy a network more quickly than traditional campus device management
B. Traditional campus device management allows a network to scale more quickly than with Cisco DNA Center 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: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 219
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: (none)
Explanation

Explanation/Reference:

QUESTION 220
What is a difference between local AP mode and FiexConnet AP mode?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 221
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: (none)
Explanation

Explanation/Reference:

QUESTION 222
What event has occurred if a router sends a notice level message to a syslog server?

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

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 223
Refer to the exhibit. An administrator configures four switches for local authentication using passwords that are stored in 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: (none)
Explanation

Explanation/Reference:

QUESTION 224
What are two fundamentals of virtualization? (choose two)

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

E. It requires that some servers, virtual machines and network gear reside on the Internet

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 225
Refer to the exhibit. What two conclusions should be made about this configuration? (Choose two)

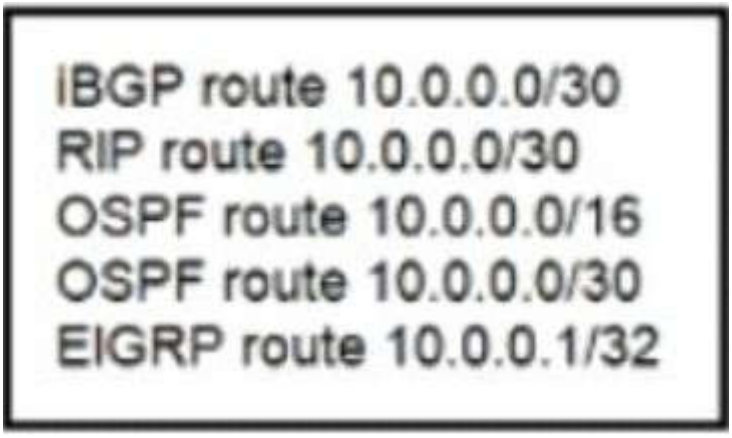
```
SW1#show spanning-tree vlan 30

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

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 226
Refer to the exhibit. A router reserved these five routes from different routing information sources. Which two routes does the router install in its routing table? (Choose two)

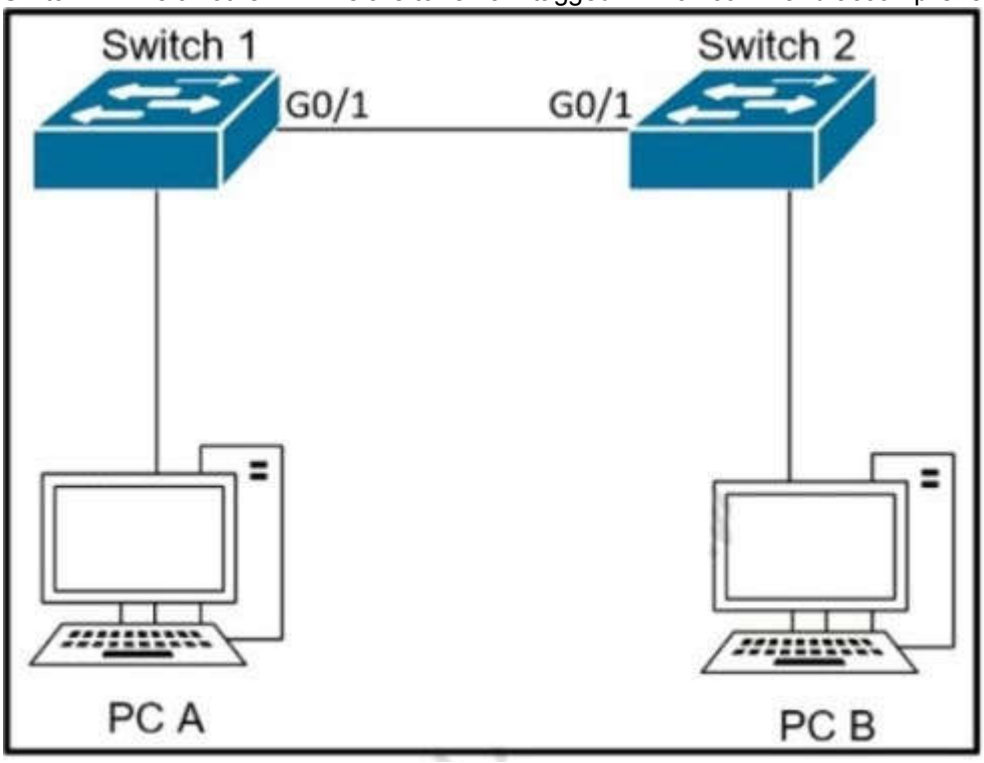


A. RIP route 10.0.0.0/30
B. iBGP route 10.0.0.0/30
C. OSPF route 10.0.0.0/30
D. EIGRP route 10.0.0.1/32
E. OSPF route 10.0.0.0/16

Correct Answer: CD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 227
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: (none)
Explanation

Explanation/Reference:

QUESTION 228
What are two differences between optical-fiber cabling and copper cabling? (Choose two)

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

Correct Answer: AC
Section: (none)
Explanation

Explanation/Reference:

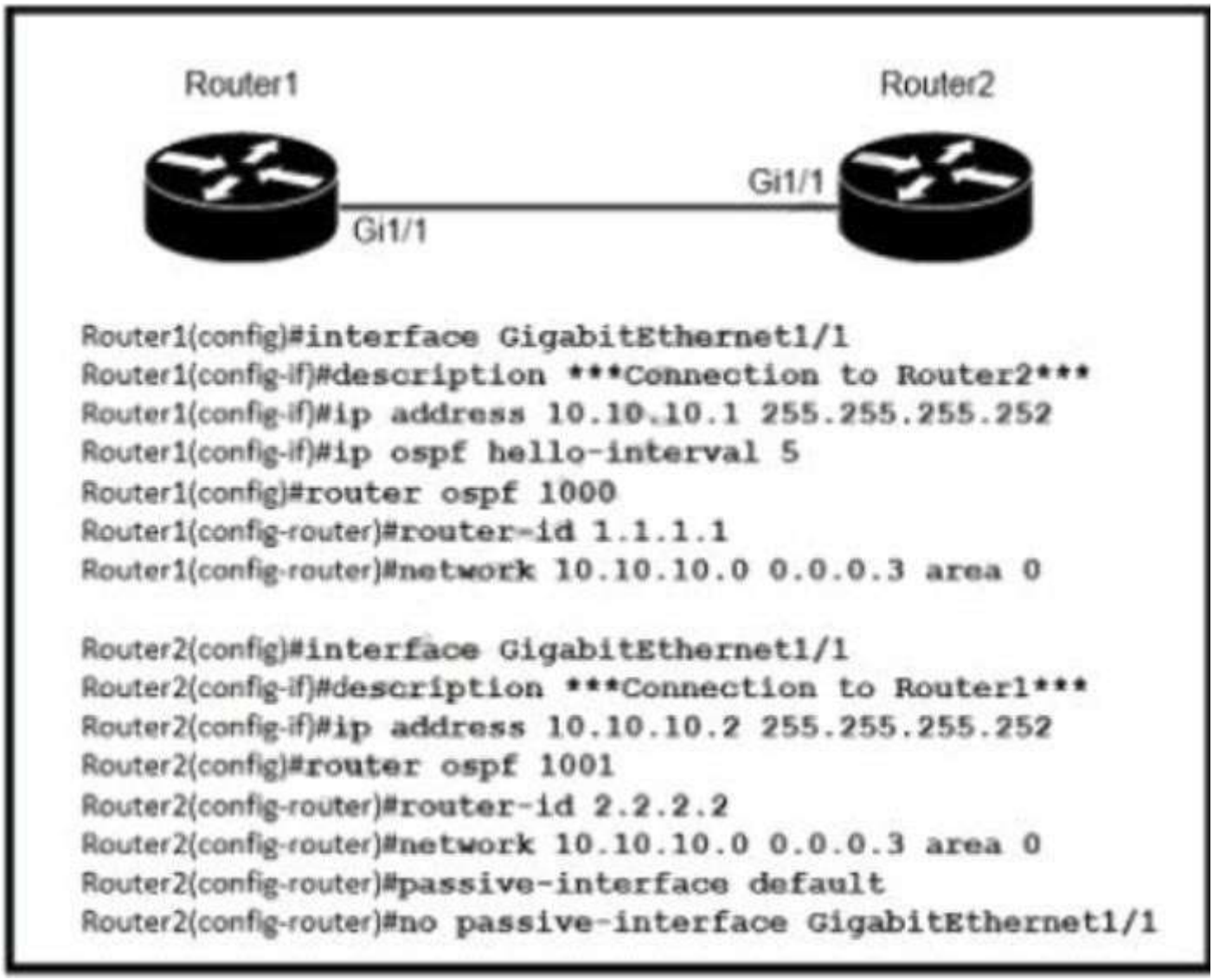
QUESTION 229
Which two minimum parameters must be configured on an active interface to enable OSPFv2 to operate? (Choose two)

A. OSPF area
B. OSPF MD5 authentication key
C. iPv6 address
D. OSPf process ID
E. OSPf stub flag

Correct Answer: AD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 230
Refer to the exhibit. 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 router IDs are mismatched.
B. Router2 is using the default hello timer.
C. The network statement on Router1 is misconfigured.
D. The OSPF process IDs are mismatched.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 231
How do TCP and UDP differ in the way they provide reliability for delivery of packets?

A. 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.
B. 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.

C. 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 for sequencing
D. TCP uses windowing to deliver packets reliably; UDP provides reliable message transfer between hosts by establishing a three-way handshake

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

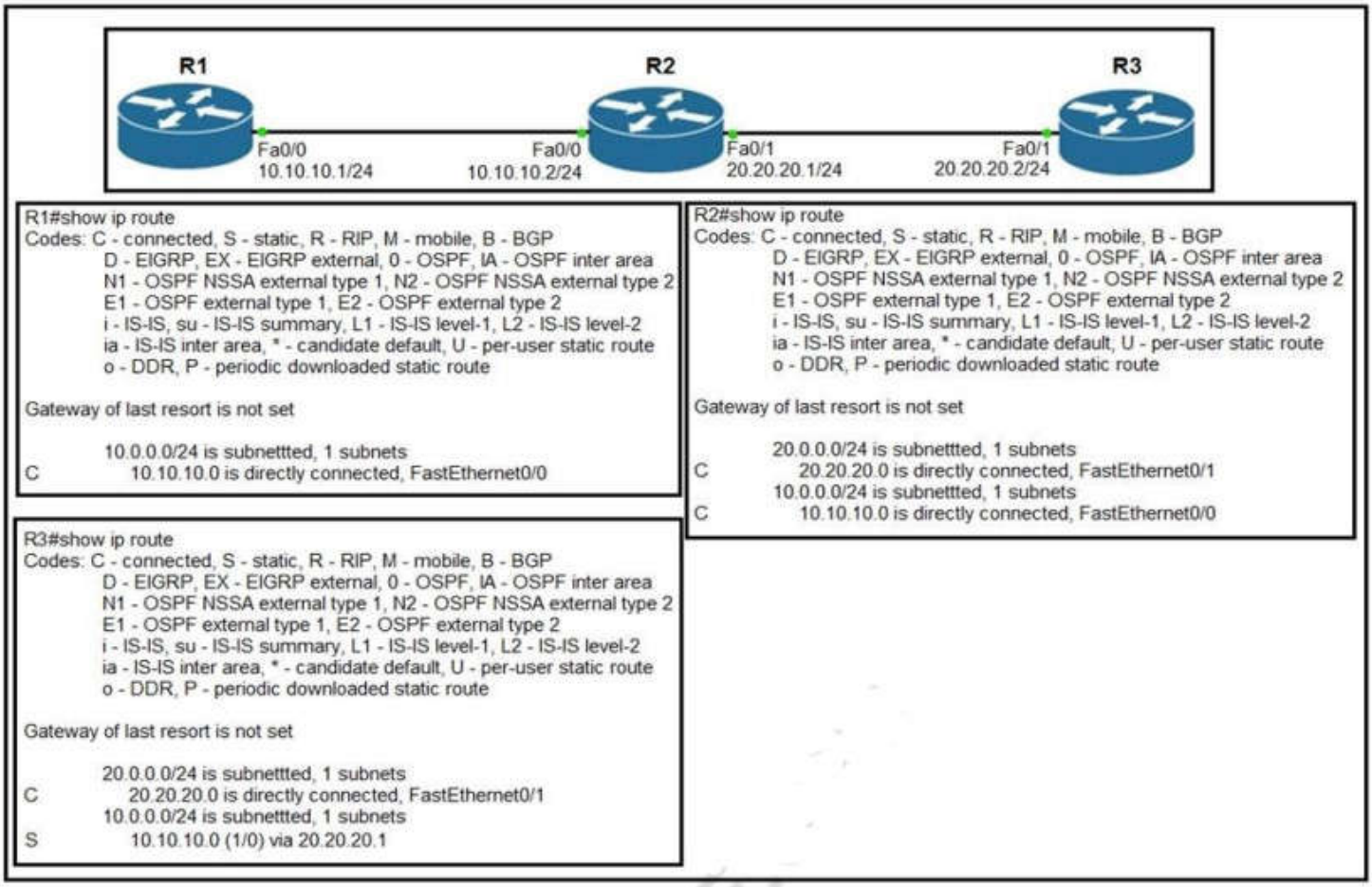
QUESTION 232
A packet is destined for 10.10.1.22. Which static route does the router choose to forward the packet?

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

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 233
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?

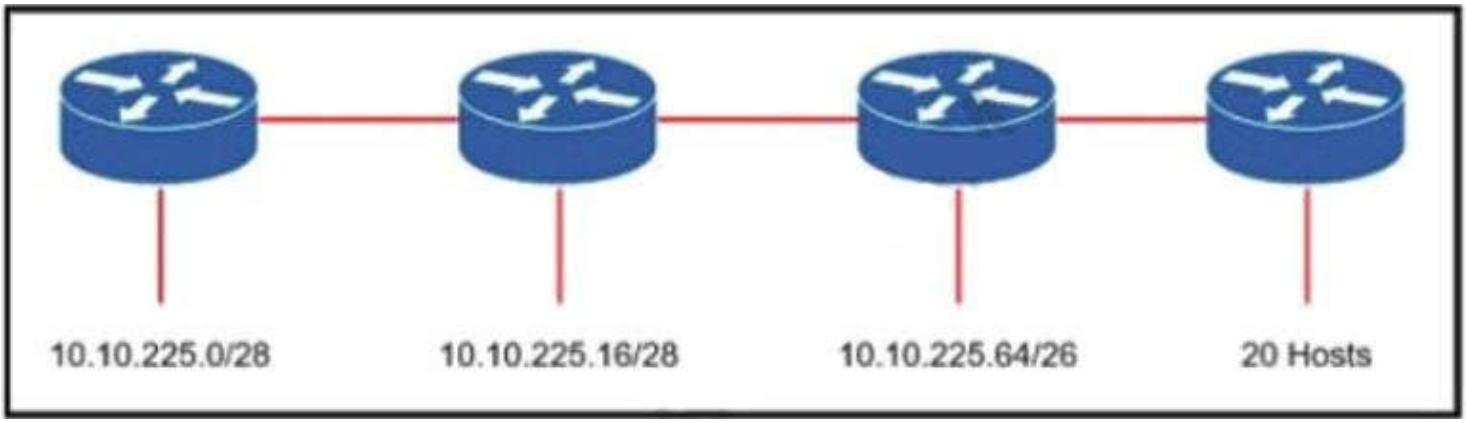


A. set the default network as 20.20.20.0/24
B. set the default gateway as 20.20.20.2
C. configure a static route with Fa0/1 as the egress interface to reach the 20.20.20.0/24 network
D. configure a static route with 10.10.10.2 as the next hop to reach the 20.20.20.0/24 network

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 234
Refer to the exhibit. 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: (none)
Explanation

Explanation/Reference:

QUESTION 235
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. 192.168.0.0/26 as summary and 192.168.0.0/29 for each floor
B. 192.168.0.0.24 as summary and 192.168.0.0/28 for each floor
C. 192.168.0.0/23 as summary and 192.168.0.0/25 for each floor
D. 192.168.0.0/25 as summary and 192.168.0.0/27 for each floor

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

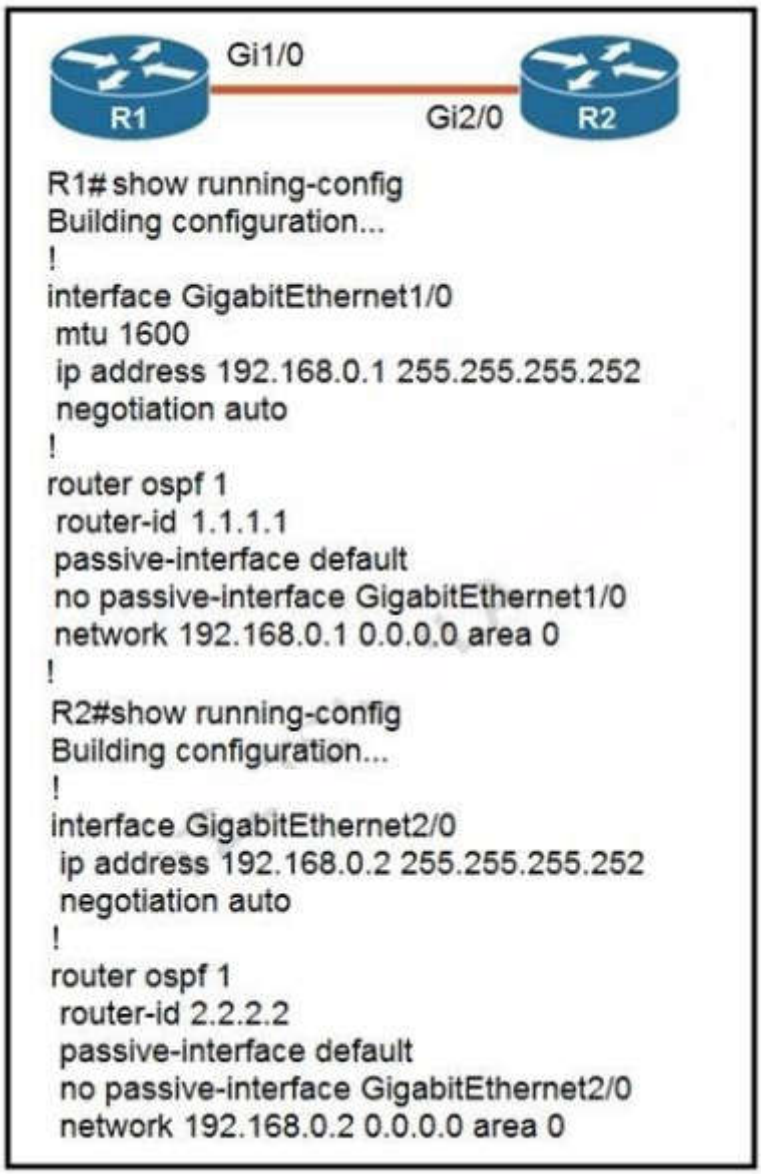
QUESTION 236
By default, how Does EIGRP determine the metric of a route for the routing table?

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 uses a reference Bandwidth and the actual bandwidth of the connected link to calculate the route metric
D. it counts the number of hops between the receiving and destination routers and uses that value as the metric

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 237
Refer to the exhibit. Which configuration issue is preventing the OSPF neighbor relationship from being established between the two routers?



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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 238
What are two roles of the Dynamic Host Configuration Protocol (DHCP)? (Choose two)

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

Correct Answer: AD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 239
How does CAPWAP communicate between an access point in local mode and a WLC?

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 240
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 5.
B. The frame is processed in VLAN 11
C. The frame is processed in VLAN 1
D. The frame is dropped

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

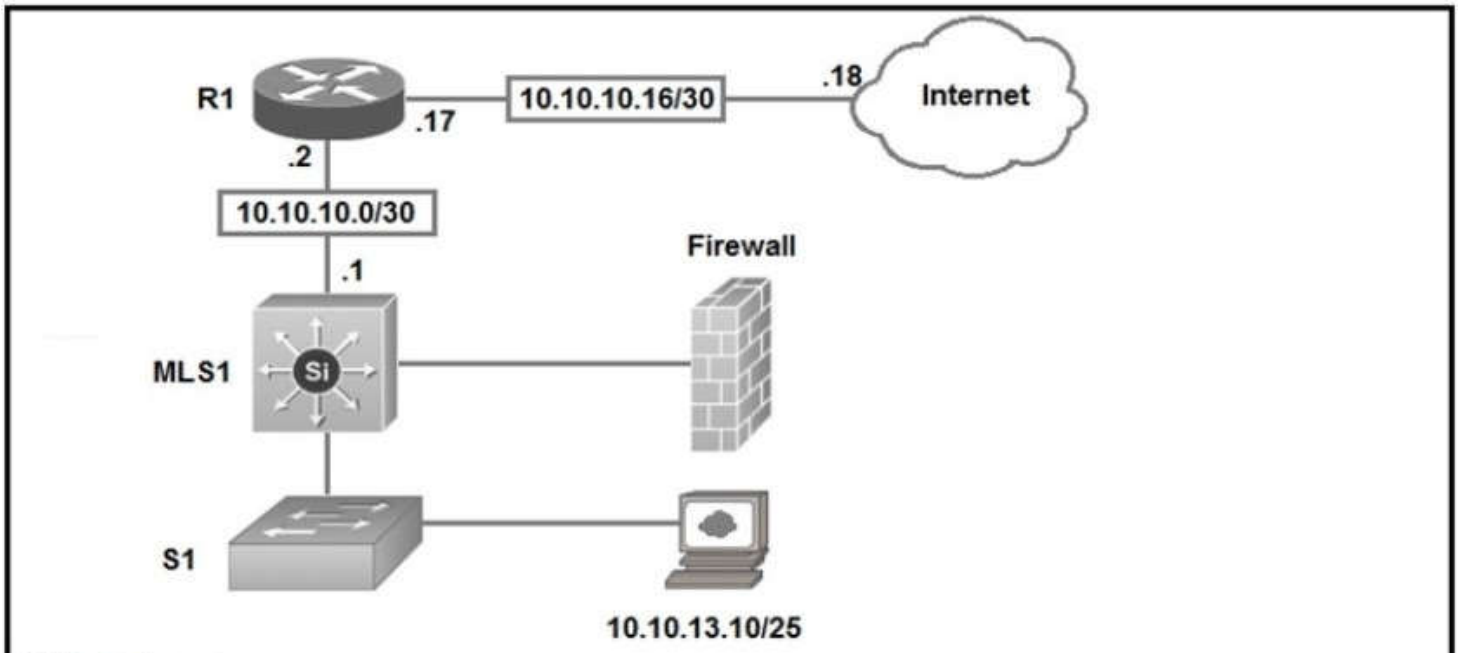
QUESTION 241
What are two reasons for an engineer to configure a floating state route? (Choose two)

A. to automatically route traffic on a secondary path when the primary path goes down
B. to route traffic differently based on the source IP of the packet
C. to enable fallback static routing when the dynamic routing protocol fails
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: (none)
Explanation

Explanation/Reference:

QUESTION 242
Refer to the exhibit. Which route type is configured to reach the internet?




```
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
```

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

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 243
How does Cisco DNA Center gather data from the network?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 244
What is the difference regarding reliability and communication type between TCP and UDP?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 245
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: (none)
Explanation

Explanation/Reference:

QUESTION 246
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: (none)
Explanation

Explanation/Reference:

QUESTION 247
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: (none)
Explanation

Explanation/Reference:

QUESTION 248
Which two statements are true about the command ip route 172.16.3.0 255.255.255.0 192.168.2.4? (Choose two.)

A. It establishes a static route to the 172.16.3.0 network.
B. It establishes a static route to the 192.168.2.0 network.
C. It configures the router to send any traffic for an unknown destination to the 172.16.3.0 network.
D. It configures the router to send any traffic for an unknown destination out the interface with the address 192.168.2.4.
E. It uses the default administrative distance.
F. It is a route that would be used last if other routes to the same destination exist.

Correct Answer: AE
Section: (none)
Explanation

Explanation/Reference:

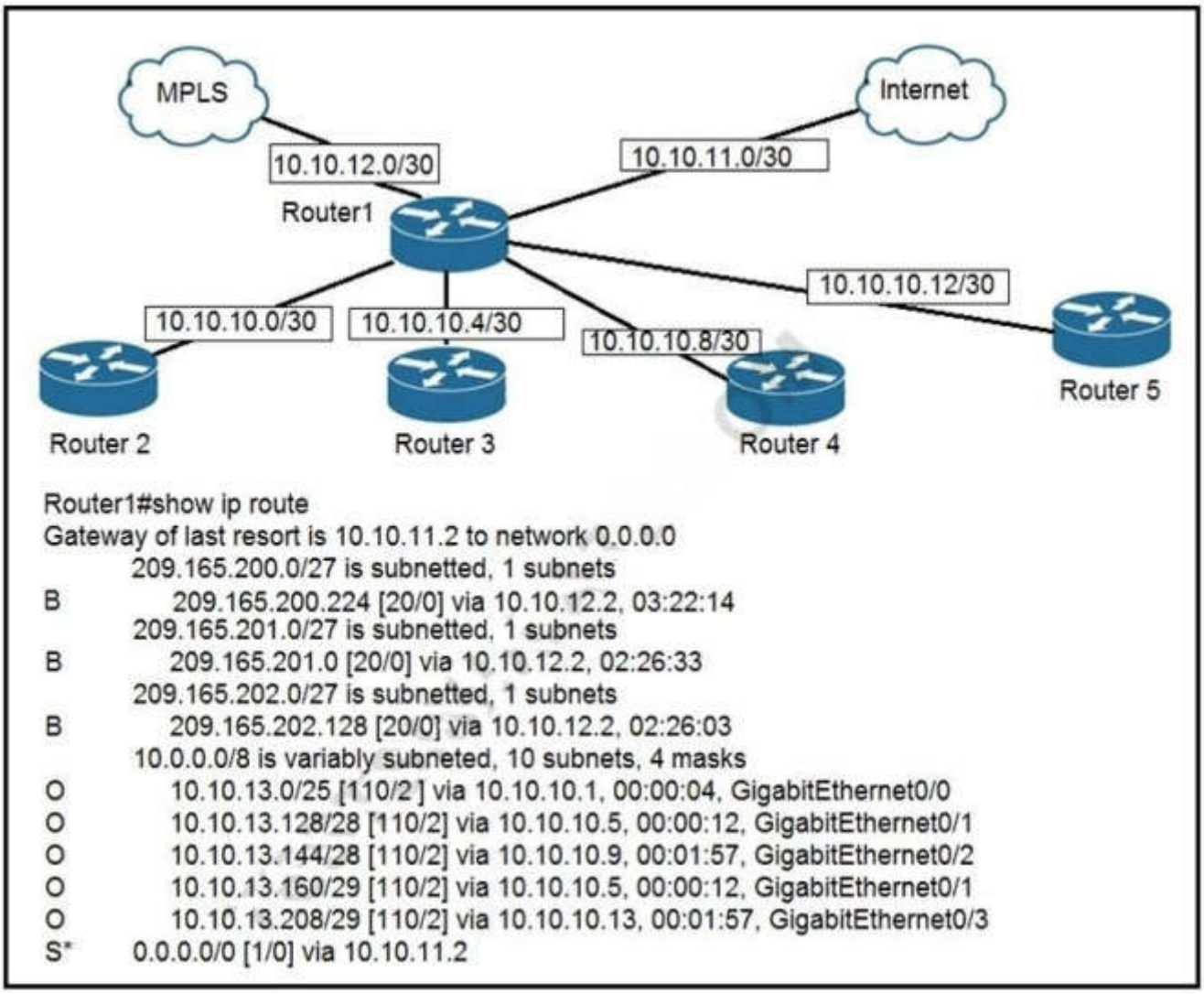
QUESTION 249
Which three statements are typical characteristics of VLAN arrangements? (Choose three.)

A. A new switch has no VLANs configured.
B. Connectivity between VLANs requires a Layer 3 device.
C. VLANs typically decrease the number of collision domains.
D. Each VLAN uses a separate address space.
E. A switch maintains a separate bridging table for each VLAN.
F. VLANs cannot span multiple switches.

Correct Answer: BDE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 250
Refer to the exhibit. To which device does Router1 send packets that are destined to host 10.10.13.165?




```
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 subneted, 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
```

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

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 251
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: (none)
Explanation

Explanation/Reference:

QUESTION 252
What are two requirements for an HSRP group? (Choose two.)

A. exactly one active router
B. one or more standby routers
C. one or more backup virtual routers
D. exactly one standby active router
E. exactly one backup virtual router

Correct Answer: AB
Section: (none)
Explanation

Explanation/Reference:
A: exactly one active router: Only one Active Router per HSRP group will be elected based on highest priority. In case of equal priority, Highest IP address will be elected as Active Router.
B: one or more standby routers : There can be one or more Standby Routers.
C, D And E are incorrect: Wrong terminology.

QUESTION 253
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: (none)
Explanation

Explanation/Reference:

QUESTION 254
If all OSPF routers in a single area are configured with the same priority value, what value does a router use for the OSPF router ID in the absence of a loopback interface?

A. the IP address of the first Fast Ethernet interface
B. the IP address of the console management interface
C. the highest IP address among its active interfaces
D. the lowest IP address among its active interfaces
E. the priority value until a loopback interface is configured

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 255
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: (none)
Explanation

Explanation/Reference:

QUESTION 256
The OSPF Hello protocol performs which of the following tasks? (Choose two.)

A. It negotiates correctness parameters between neighboring interfaces.
B. It broadcasts hello packets throughout the internetwork to discover all routers that are running OSP
C. It provides dynamic neighbor discovery.
D. It detects unreachable neighbors in 90 second intervals.
E. It uses timers to elect the router with the fastest links as the designated router.
F. It maintains neighbor relationships

Correct Answer: CF
Section: (none)
Explanation

Explanation/Reference:

QUESTION 257
What are two benefits of using VTP in a switching environment? (Choose two.)

A. It allows switches to read frame tags.
B. It allows ports to be assigned to VLANs automatically.
C. It maintains VLAN consistency across a switched network.
D. It allows frames from multiple VLANs to use a single interface.
E. It allows VLAN information to be automatically propagated throughout the switching environment.

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 258
Which purpose does a northbound API serve in a controller-based networking architecture?

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 259
The OSPF Hello protocol performs which of the following tasks? (Choose two.)

A. It provides dynamic neighbor discovery.
B. It detects unreachable neighbors in 90 second intervals.
C. It maintains neighbor relationships.
D. It negotiates correctness parameters between neighboring interfaces.
E. It uses timers to elect the router with the fastest links as the designated router.
F. It broadcasts hello packets throughout the internetwork to discover all routers that are running OSPF.

Correct Answer: AC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 260
What are two reasons a network administrator would use CDP? (Choose two.)

A. to verify the type of cable interconnecting two devices
B. to determine the status of network services on a remote device
C. to obtain VLAN information from directly connected switches
D. to verify Layer 2 connectivity between two devices when Layer 3 fails
E. to obtain the IP address of a connected device in order to telnet to the device
F. to determine the status of the routing protocols between directly connected routers

Correct Answer: DE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 261
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?

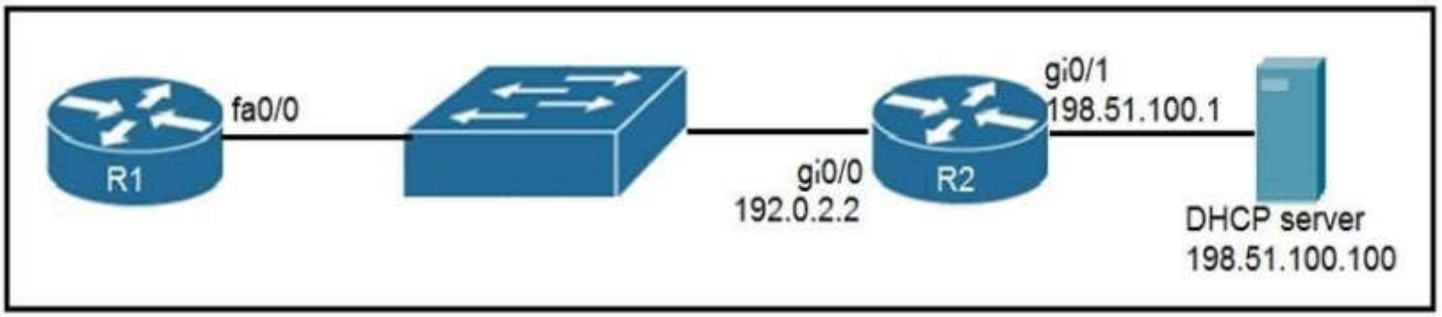
```
interface GigabitEthernet3/1/4
  switchport voice vlan 50
!
```

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: (none)
Explanation

Explanation/Reference:

QUESTION 262
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)

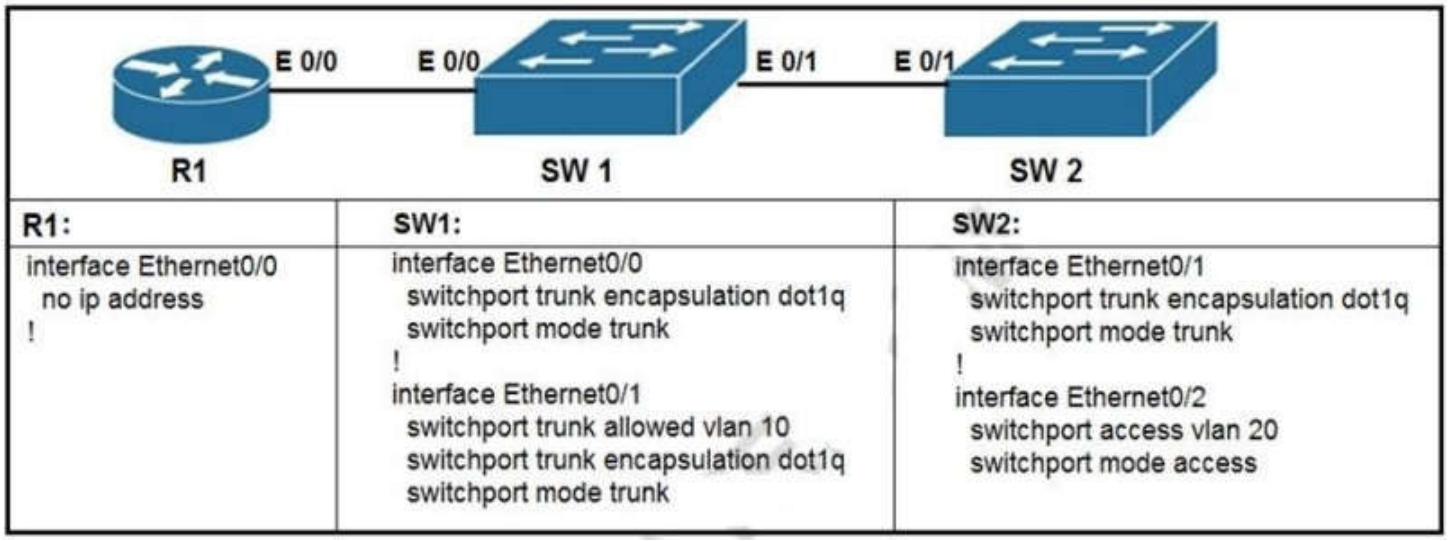


A. R1(config)# interface fa0/0
R1(config-if)# ip helper-address 198.51.100.100
B. R2(config)# interface gi0/0
R2(config-if)# ip helper-address 198.51.100.100
C. R1(config)# interface fa0/0
R1(config-if)# ip address dhcp
R1(config-if)# no shutdown
D. R2(config)# interface gi0/0
R2(config-if)# ip address dhcp
E. R1(config)# interface fa0/0
R1(config-if)# ip helper-address 192.0.2.2

Correct Answer: BC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 263
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: (none)
Explanation

Explanation/Reference:

QUESTION 264
On a corporate network, hosts on the same VLAN can communicate with each other, but they are unable to communicate with hosts on different VLANs. What is needed to allow communication between the VLANs?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Different VLANs can't communicate with each other , they can communicate with the help of Layer3 router. Hence , it is needed to connect a router to a switch , then make the sub-interface on the router to connect to the switch, establishing Trunking links to achieve communications of devices which belong to different VLANs.

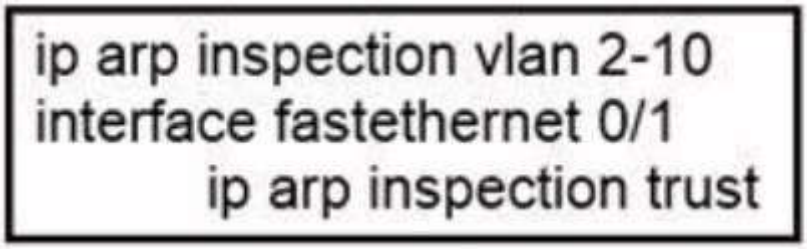
QUESTION 265
Which command can you enter to determine the addresses that have been assigned on a DHCP Server?

A. Show ip DHCP database.
B. Show ip DHCP pool.
C. Show ip DHCP binding.
D. Show ip DHCP server statistic.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 266
Refer to the exhibit. If the network environment is operating normally, which type of device must be connected to interface FastEthernet 0/1?

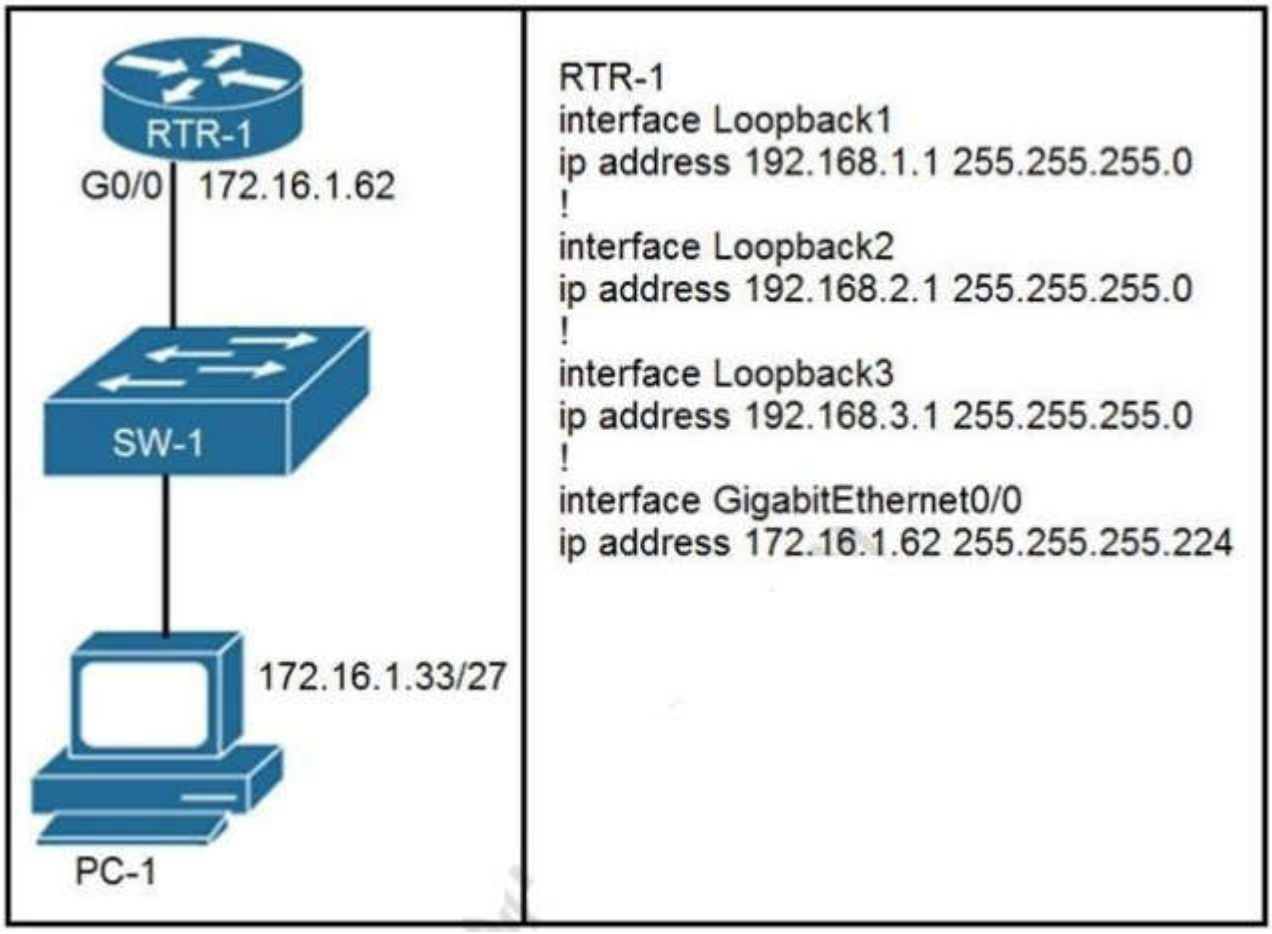


A. DHCP client
B. access point
C. router
D. PC

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 267
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 top 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 top 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 top host 172.16.1.33 any eq 23
access-list 100 permit ip any any

interface Gigabit Ethernet0/0
ip access-group 100 in

D. access-list 100 deny top 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: (none)
Explanation

Explanation/Reference:

QUESTION 268
Which function dose the range of private IPv4 addresses perform?

A. allow multiple companies to each use the same address without conflicts
B. provides a direct connection for hosts from outside of the enterprise network
C. ensues that NAT is not required to reach the internet with private range addressing
D. enable secure communications to the internet for all external hosts

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 269
Which type of API would be used to allow authorized salespeople of an organization access to internal sales data from their mobile devices?

A. partner
B. open
C. public
D. private

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 270
What is a characteristic of the REST API?

A. evolved into what became SOAP
B. used for exchanging XML structured information over HTTP or SMTP
C. considered slow, complex, and rigid
D. most widely used API for web services

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 271

What is the name of the layer in the Cisco borderless switched network design that is considered to be the backbone used for high-speed connectivity and fault isolation?

A. data link
B. access
C. core
D. network
E. network access

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 272
Refer to the exhibit. An administrator configures the following ACL in order to prevent devices on the 192.168.1.0 subnet from accessing the server at 10.1.1.5:
access-list 100 deny ip 192.168.1.0 0.0.0.255 host 10.1.1.5
access-list 100 permit ip any any



Where should the administrator place this ACL for the most efficient use of network resources?

A. inbound on router A Fa0/0
B. outbound on router B Fa0/0
C. outbound on router A Fa0/1
D. inbound on router B Fa0/1

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

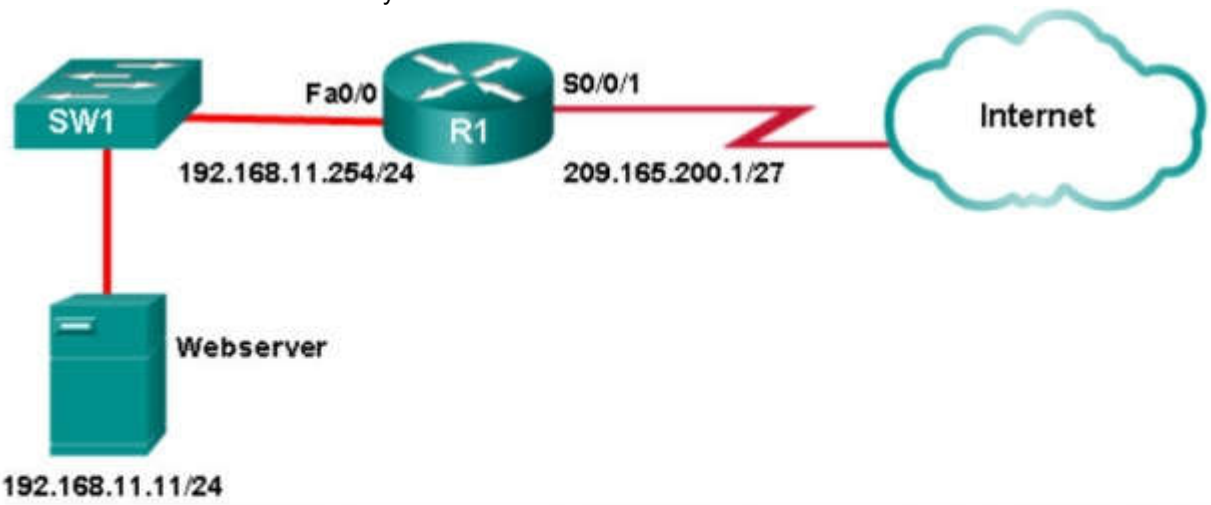
QUESTION 273
Which step in the link-state routing process is described by a router sending Hello packets out all of the OSPF-enabled interfaces?

A. electing the designated router
B. establishing neighbor adjacencies
C. injecting the default route
D. exchanging link-state advertisements

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 274
Refer to the exhibit. Router R1 is configured with static NAT. Addressing on the router and the web server are correctly configured, but there is no connectivity between the web server and users on the Internet. What is a possible reason for this lack of connectivity?




```
R1(config)# ip nat inside source static 192.168.11.254 209.165.200.1
R1(config)# interface Fastethernet0/0
R1(config-if)# ip nat inside
R1(config-if)# interface Serial0/0/1
R1(config-if)# ip nat outside
```

A. The router NAT configuration has an incorrect inside local address.
B. The inside global address is incorrect.
C. The NAT configuration on interface S0/0/1 is incorrect.
D. Interface Fa0/0 should be configured with the command ip nat outside

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 275
Anycompany has decided to reduce its environmental footprint by reducing energy costs, moving to a smaller facility, and promoting telecommuting. What service or technology would support this requirement?

A. Cisco ACI
B. cloud services
C. APIC-EM
D. data center

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 276
A company needs to interconnect several branch offices across a metropolitan area. The network engineer is seeking a solution that provides high-speed converged traffic, including voice, video, and data on the same network infrastructure. The company also wants easy integration to their existing LAN infrastructure in their office locations. Which technology should be recommended?

A. VSAT
B. ISDN
C. Frame Relay
D. Ethernet WAN

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Ethernet WAN uses many Ethernet standards and it connects easily to existing Ethernet LANs. It provides a switched, high-bandwidth Layer 2 network capable of managing data, voice, and video all on the same infrastructure. ISDN, while capable of supporting both voice and data, does not provide high bandwidth. VSAT uses satellite connectivity to establish a private WAN connection but with relatively low bandwidth. Use of VSAT, ISDN, and Frame Relay require specific network devices for the WAN connection and data conversion between LAN and WAN.

QUESTION 277
Refer to the exhibit. Which two configurations would be used to create and apply a standard access list on R1, so that only the 10.0.70.0/25 network devices are allowed to access the internal database server? (Choose two.)

A. R1(config)# interface GigabitEthernet0/0
R1(config-if)# ip access-group 5 out
B. R1(config)# access-list 5 permit 10.0.54.0 0.0.1.255
C. R1(config)# interface Serial0/0/0
R1(config-if)# ip access-group 5 in
D. R1(config)# access-list 5 permit 10.0.70.0 0.0.0.127
E. R1(config)# access-list 5 permit any

Correct Answer: AD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 278

Which type of VPN uses a hub-and-spoke configuration to establish a full mesh topology?

A. GRE over IPsec
B. dynamic multipoint VPN
C. MPLS VPN
D. IPsec virtual tunnel interface

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

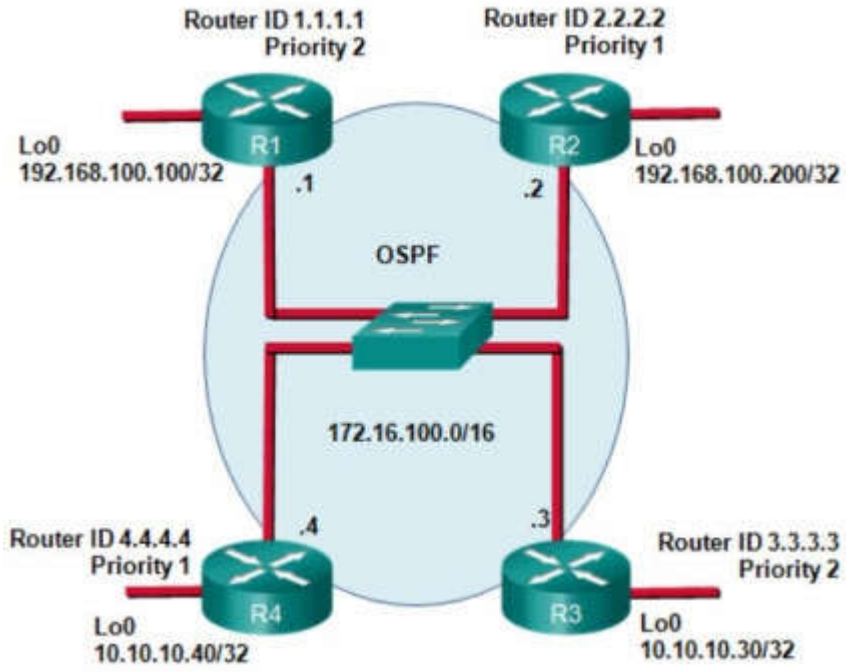
QUESTION 279
What are two purposes of launching a reconnaissance attack on a network? (Choose two.)

A. to prevent other users from accessing the system
B. to escalate access privileges
C. to gather information about the network and devices
D. to scan for accessibility
E. to retrieve and modify data

Correct Answer: CD
Section: (none)
Explanation

Explanation/Reference:
Gathering information about a network and scanning for access is a reconnaissance attack. Preventing other users from accessing a system is a denial of service attack. Attempting to retrieve and modify data, and attempting to escalate access privileges are types of access attacks.

QUESTION 280
Refer to the exhibit. If the switch reboots and all routers have to re-establish OSPF adjacencies, which routers will become the new DR and BDR?



A. Router R3 will become the DR and router R1 will become the BDR.
B. Router R4 will become the DR and router R3 will become the BDR.
C. Router R1 will become the DR and router R2 will become the BDR.
D. Router R3 will become the DR and router R2 will become the BDR.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
OSPF elections of a DR are based on the following in order of precedence:

- highest pritority from 1 -255 (0 = never a DR)
- highest router ID
- highest IP address of a loopback or active interface in the absence of a manually configured router ID. Loopback IP addresses take higher precedence than other interfaces.

In this case routers R1 and R3 have the highest router priority. Between the two, R3 has the higher router ID. Therefore, R3 will become the DR and R1 will become the BDR.

QUESTION 281
The SW1 interface g0/1 is in the down/down state. Which two configurations are valid reasons for the interface conditions?(choose two)

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

Correct Answer: BE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 282
In which two ways does a password manager reduce the chance of a hacker stealing a users password? (Choose two.)

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

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:

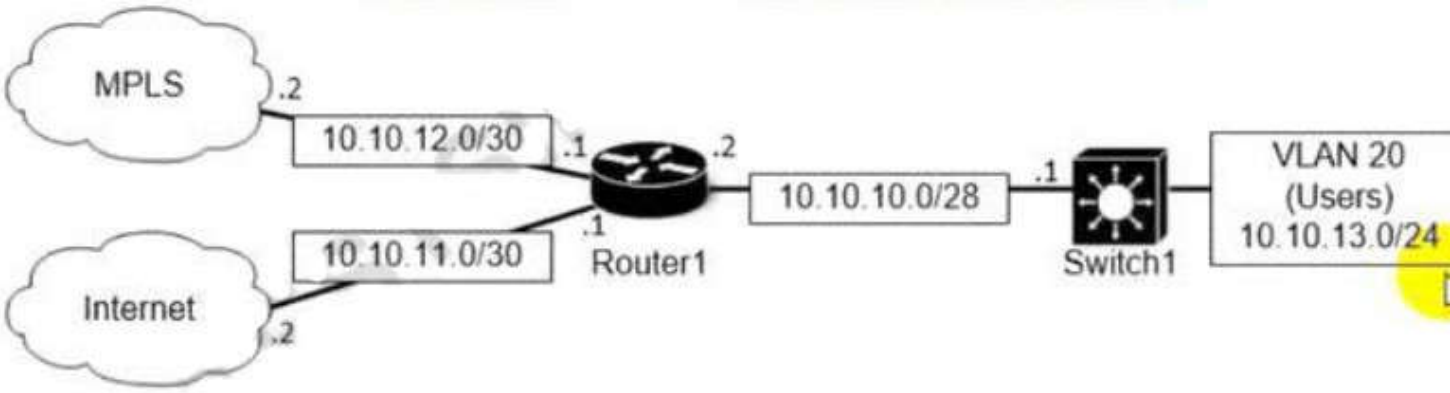
QUESTION 283
What is the primary purpose of a First Hop Redundancy Protocol?

A. It allows directly connected neighbors to share configuration information.
B. It allows a router to use bridge priorities to create multiple loop-free paths to a single destination.
C. It reduces routing failures by allowing Layer 3 load balancing between OSPF neighbors that have the same link metric.
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: (none)
Explanation

Explanation/Reference:

QUESTION 284
Refer to the exhibit. Which path is used by the router for internet traffic?



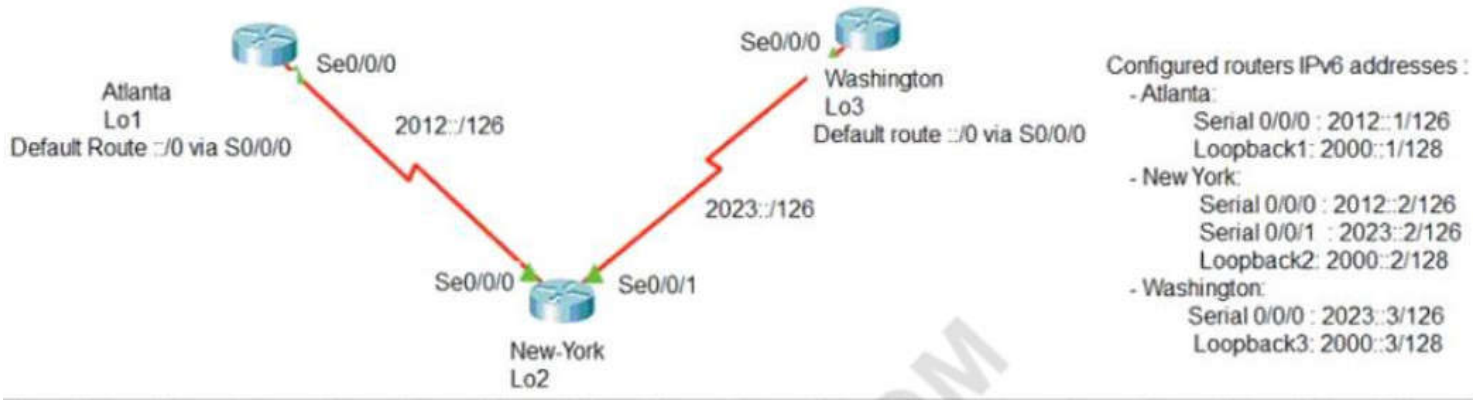

```
Router1#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0
     209.165.200.0/27 is subnetted, 1 subnets
B       209.165.200.224 [20/0] via 10.10.12.2, 00:09:57
     10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C       10.10.10.0/28 is directly connected, GigabitEthernet0/0
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
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
```

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

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 285
Refer to 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::1/128 2012::1
B. ipv6 route 2000::3/128 2023::3
C. ipv6 route 2000::3/128 s0/0/0
D. ipv6 route 2000::1/128 2012::2
E. ipv6 route 2000::1/128 s0/0/1

Correct Answer: AB
Section: (none)
Explanation

Explanation/Reference:

QUESTION 286
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?

```
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
      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
```

A. 207 165 200 246 via Serial0/1/0
B. 207.165.200.254 via Serial0/0/0
C. 207.165 200.254 via Serial0/0/1
D. 207.165.200.250 via Serial0/0/0

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

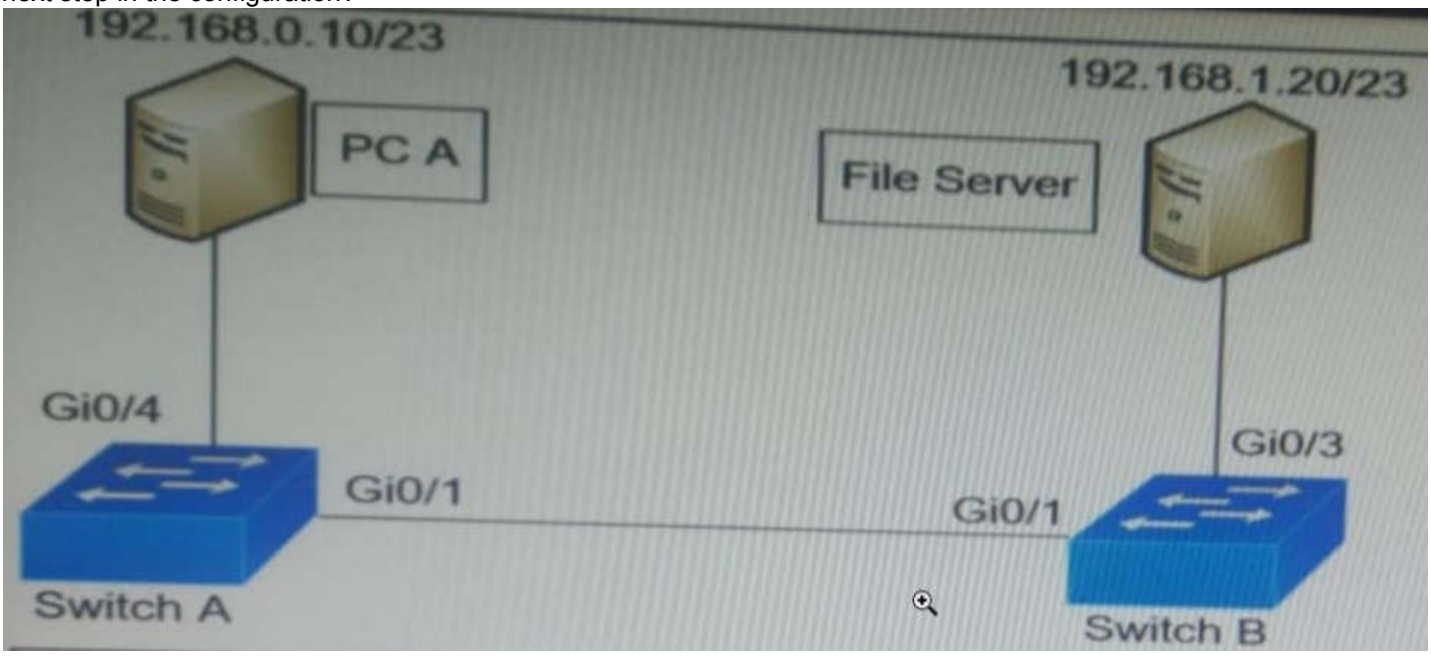
QUESTION 287
Which goal is achieved by the implementation of private IPv4 addressing on a network?

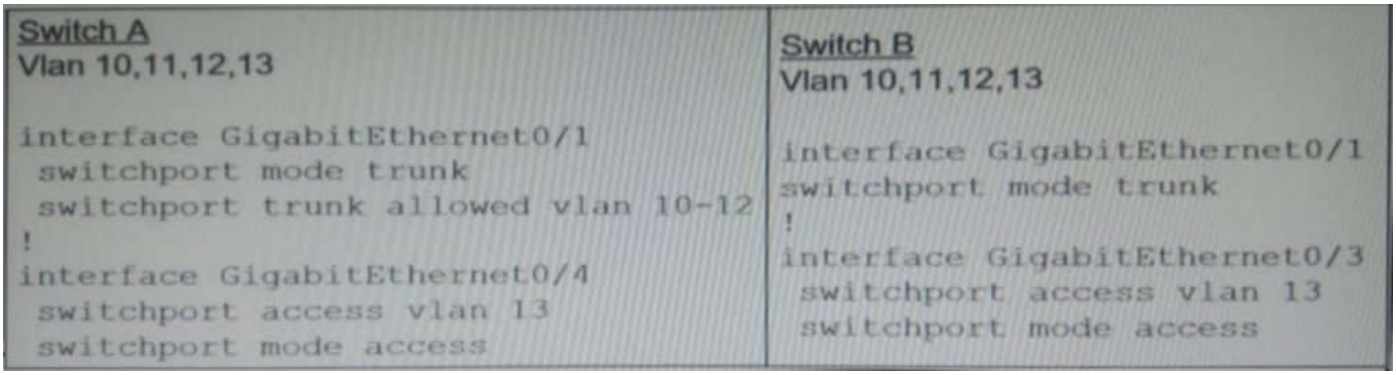
A. allows servers and workstations to communicate across public network boundaries
B. provides a reduction in size of the forwarding table on network routers
C. allows communication across the Internet to other private networks
D. provides an added level of protection against Internet exposure

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 288
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 PDA 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: B
Section: (none)
Explanation

Explanation/Reference:

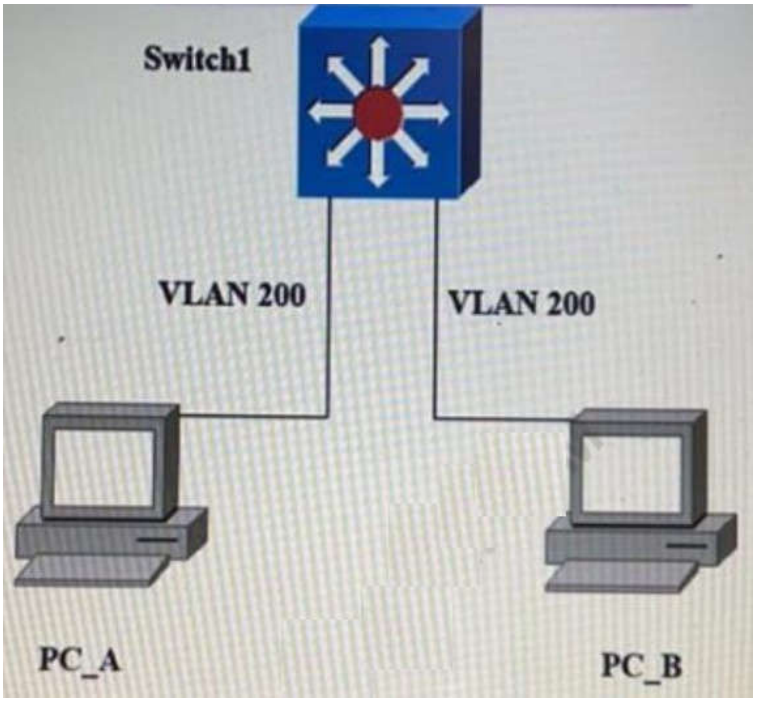
QUESTION 289
When a WPA2-PSK WLAN is configured in the Wireless LAN Controller, what is the minimum number of characters that is required in ASCII formar?

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

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 290
Refer to the exhibit Which outcome is expected when PC_A sends data to PC_B?



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

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

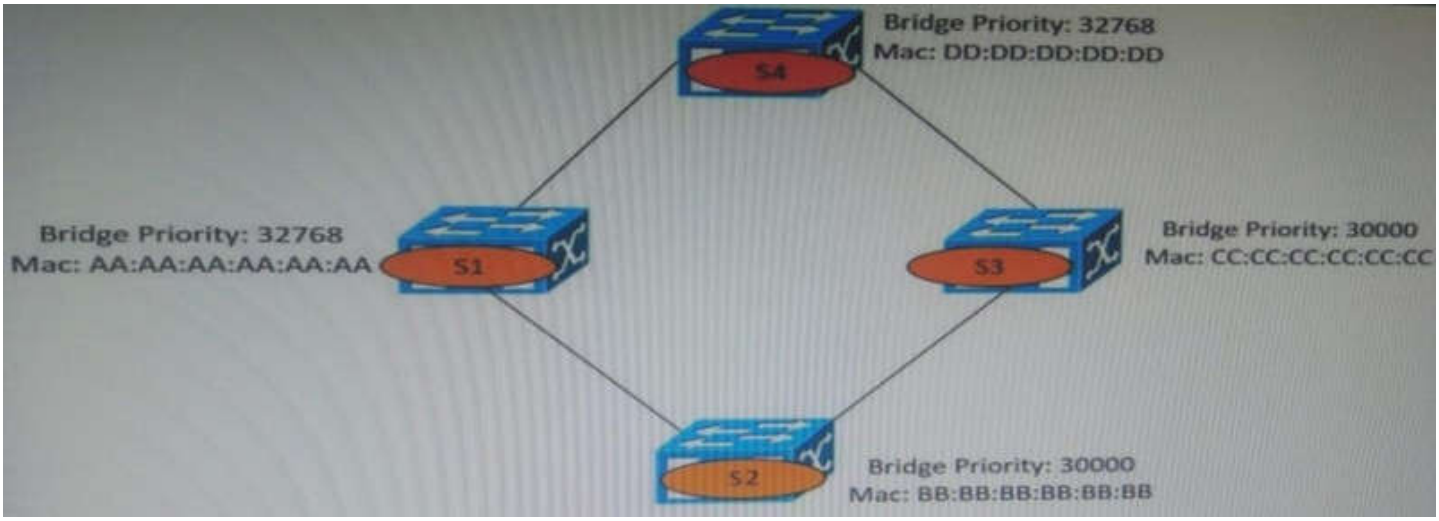
QUESTION 291
An engineer needs to configure LLDP to send the port description time length value (TLV). What command sequence must be implemented?

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

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 292
Refer to the exhibit. Which switch becomes the root bridge?



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

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 293
Refer to the exhibit. What is the next hop address for traffic that is destined to host 10.0.1.5?

```
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
```

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

Correct Answer: C
Section: (none)

Explanation

Explanation/Reference:

QUESTION 294
When the active router in an HSRP group fails, what router assumes the role and forwards packets?

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

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 295
An organization secures its network with multi-factor authentication using an authenticator app on employee smartphones. How is the applic 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 challenges a user by requiring an administrator password to reactivate when the smartphone is rebooted
C. The application requires an aadministrator password to reactivate after a configured interval
D. The application verifies that the user is in a specific location before it provides the second factor

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 296
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 priority
B. modify process ID
C. modify hello interval
D. modity network type

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 297
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?

```
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
```

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

R1(config-line)#password p@ss1234
R1(config-line)#transport input telnet

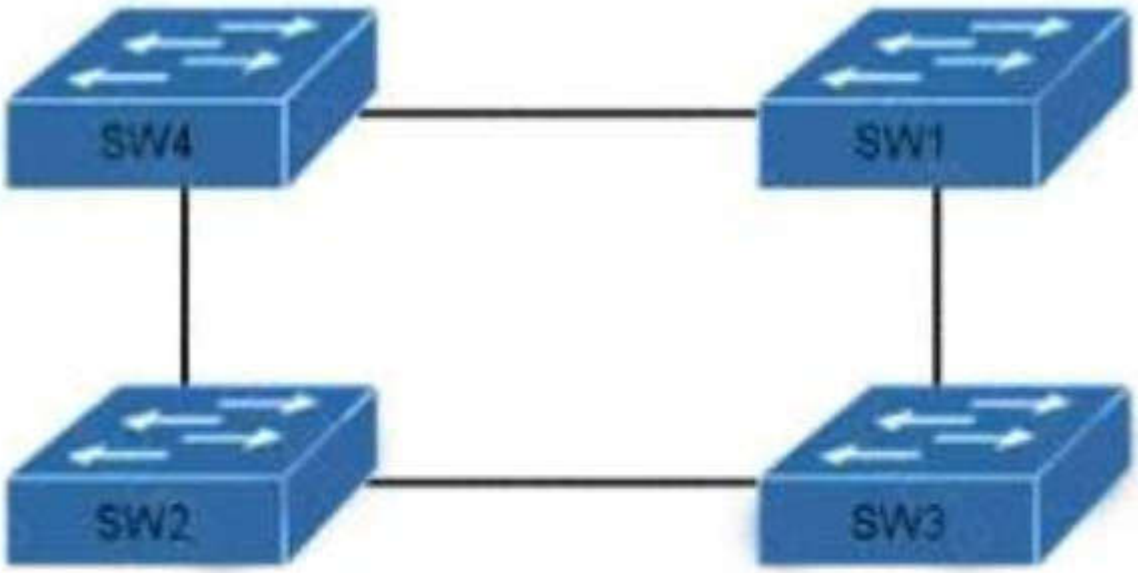
C. R1(config)#username admin secret p@ss1234
R1(config-if)#line vty 0 4
R1(config-line)#login local
R1(config)#enable secret p@ss1234

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 298
Refer to the exhibit. Which switch in this configuration will be elected as the root bridge?



SW1: 0C:E0:38:00:36:75
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: (none)
Explanation

Explanation/Reference:

QUESTION 299
An engineer is configuring NAT to translate the source subnet of 10.10.0.0/24 to any of three addresses 192.168.3.1, 192.168.3.2, 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
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

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 0.0.0.255
ip nat outside destination 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
access-list 1 permit 10.10.0 0.0 0.255
ip nat inside source list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside

A. Option A
B. Option B
C. Option C

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 300
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: B
Section: (none)

Explanation

Explanation/Reference:

QUESTION 301
Which device performs stateful inspection of traffic?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 302
What criteria is used first during the root port selection process?

A. local port ID
B. lowest path cost to the root bridge
C. lowest neighbor's bridge ID
D. lowest neighbor's port ID

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 303
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. eBGP
B. static
C. OSPF
D. EIGRP

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 304
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: (none)
Explanation

Explanation/Reference:

QUESTION 305
Which configuration ensures that the switch is always the root for VLAN 750?

A. Switch(config)#spanning-tree vlan 750 priority 38003685
B. Switch(config)#spanning-tree vlan 750 root primary
C. Switch(config)#spanning-tree vlan 750 priority 614440
D. Switch(config)#spanning-tree vlan 750 priority 0

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 306
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 sublet. What are the next two steps to complete the configuration? (Choose two.)

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

Correct Answer: AE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 307
What protocol allows an engineer to back up 20 network router configurations globally while using the copy function?

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

Correct Answer: B

Section: (none)
Explanation

Explanation/Reference:

QUESTION 308
Which state does the switch port move to when PortFast is enabled?

A. learning
B. forwarding
C. blocking
D. listening

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 309
What are two roles of Domain Name Services (DNS)? (Choose Two)

A. builds a flat structure of DNS names for more efficient IP operations
B. encrypts network Traffic as it travels across a WAN by default
C. improves security by protecting IP addresses under Fully Qualified Domain Names (FQDNs)
D. enables applications to identify resources by name instead of IP address
E. allows a single host name to be shared across more than one IP address

Correct Answer: DE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 310
How do TCP and UDP differ in the way they guarantee packet delivery?

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

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 311
A device detects two stations transmitting frames at the same time. This condition occurs after the first 64 bytes

of the frame is received interface counter increments?

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 312
Which technology is used to improve web traffic performance by proxy caching?

A. WSA
B. Firepower
C. ASA
D. FireSIGHT

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 313
Using direct sequence spread spectrum, which three 2.4-GHz channels are used to limit collisions?

A. 1,6.11
B. 1,5,10
C. 1,2,3
D. 5,6,7

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 314
Which type of attack can be mitigated by dynamic ARP inspection?

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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 315
What are two benefits of controller-based networking compared to traditional networking?

A. Controller-based increases network bandwidth usage, while traditional lightens the load on the network.
B. Controller-based inflates software costs, while traditional decreases individual licensing costs
C. Controller-based reduces network configuration complexity, while traditional increases the potential for errors
D. Controller-based provides centralization of key IT functions. While traditional requires distributes management function
E. Controller-based allows for fewer network failure, while traditional increases failure rates.

Correct Answer: CD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 316
What software defined architecture plane assists network devices with making packet-forwarding decisions by providing Layer 2 reachability and Layer 3 routing information?

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

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

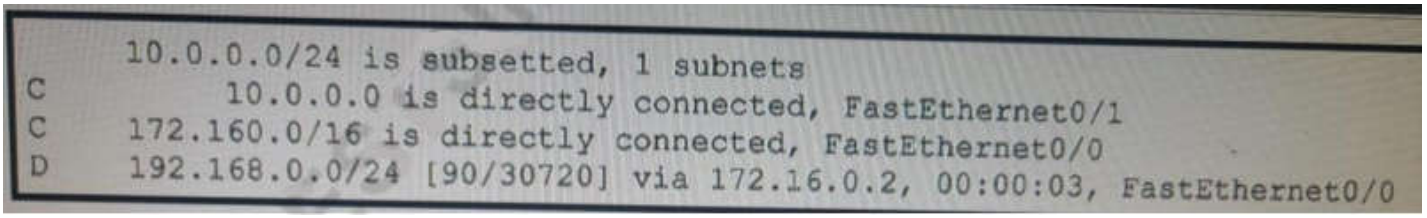
QUESTION 317
Which WAN access technology is preferred for a small office / home office architecture?

A. broadband cable access
B. frame-relay packet switching
C. dedicated point-to-point leased line
D. Integrated Services Digital Network switching.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 318
Refer to the exhibit. Which route type does the routing protocol Code D represent in the output?



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

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 319
Which two WAN architecture options help a business scalability and reliability for the network? (Choose two)

A. asychronous routing
B. single-homed branches
C. dual-homed branches
D. static routing
E. dynamic routing

Correct Answer: AC
Section: (none)
Explanation

Explanation/Reference:

QUESTION 320
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 AAA override
B. enable RX-SOP
C. enable DTIM
D. enable Band Select

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 321
What mechanism carries multicast traffic between remote sites and supports encryption?

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

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 322
An engineer must establish a trunk link between two switches. The neighboring switch is set to trunk or desirable mode. What action should be taken?

A. configure switchport nonegotiate
B. configure switchport mode dynamic desirable
C. configure switchport mode dynamic auto
D. configure switchport trunk dynamic desirable

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 323
Which type of information resides on a DHCP server?

A. a list of the available IP addresses in a pool
B. a list of public IP addresses and their corresponding names
C. usernames and passwords for the end users in a domain
D. a list of statically assigned MAC addresses

Correct Answer: A
Section: (none)
Explanation

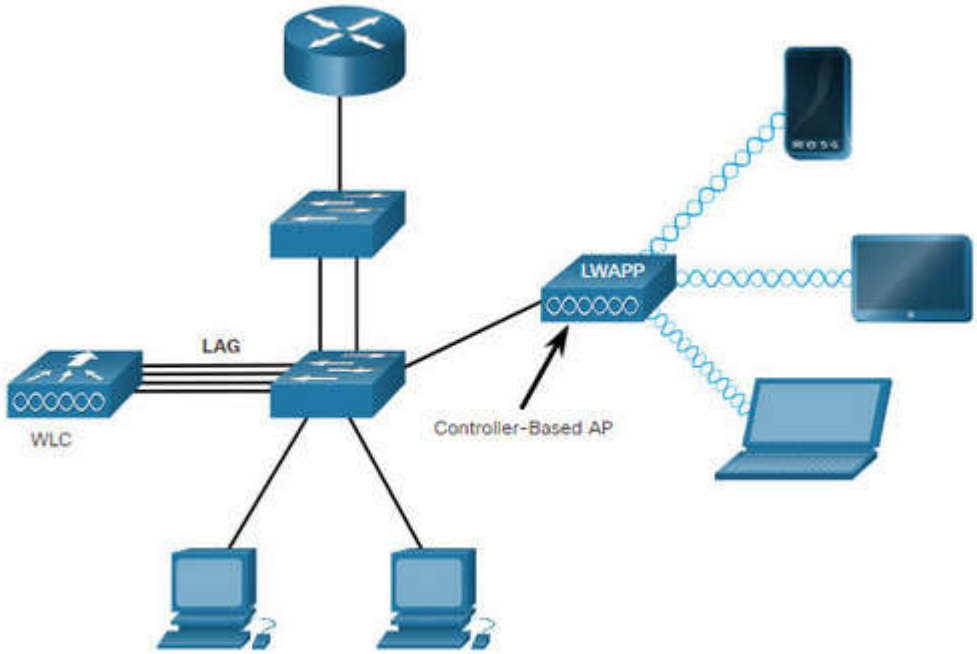
Explanation/Reference:

QUESTION 324
What is a function of Wireless LAN Controller?

A. register with a single access point that controls traffic between wired and wireless endpoints.
B. use SSIDs to distinguish between wireless clients.
C. send LWAPP packets to access points.
D. monitor activity on wireless and wired LANs

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Lightweight APs (LAPs) is devices require no initial configuration. LAPs use the Lightweight Access Point Protocol (LWAPP) to communicate with a WLAN controller (WLC), as shown in the below figure. Controller-based APs are useful in situations where many APs are required in the network. As more APs are added, each AP is automatically configured and managed by the WLC.



QUESTION 325
What role does a hypervisor provide for each virtual machine in server virtualization?

A. infrastructure-as-a-service.
B. Software-as-a-service
C. control and distribution of physical resources
D. services as a hardware controller.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
The hypervisor creates and manages virtual machines on a host computer and allocates physical system resources to them.

QUESTION 326
Which technology must be implemented to configure network device monitoring with the highest security?

A. syslog
B. NetFlow
C. IP SLA
D. SNMPv3

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 327
What is the function of a server?

A. It transmits packets between hosts in the same broadcast domain.
B. It provides shared applications to end users.
C. It routes traffic between Layer 3 devices.
D. It Creates security zones between trusted and untrusted networks

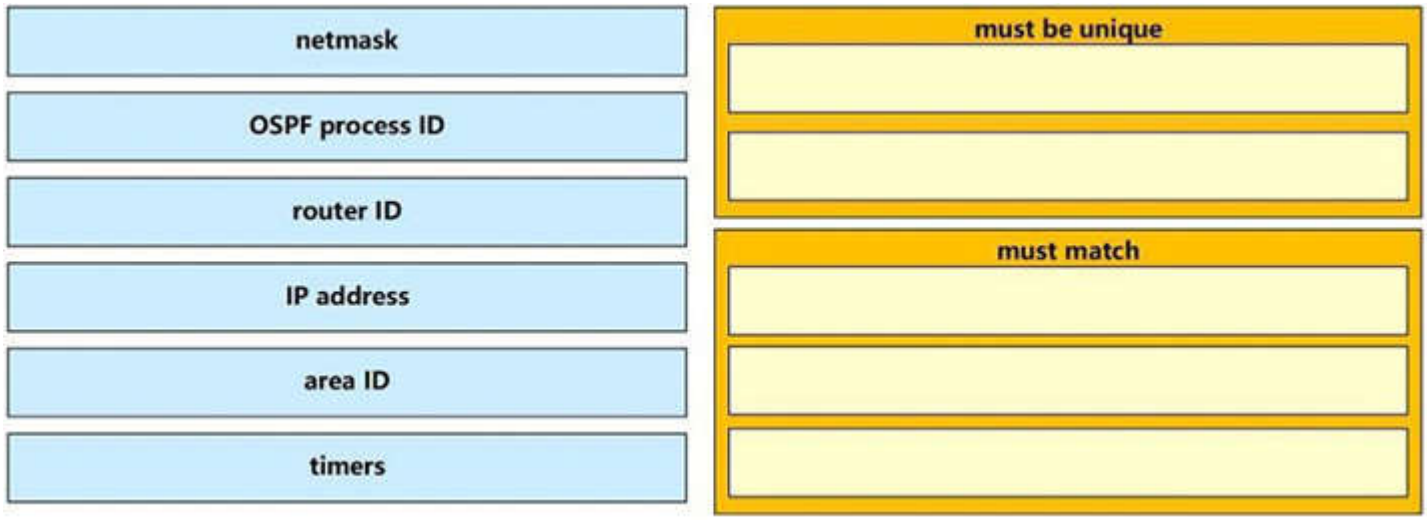
Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

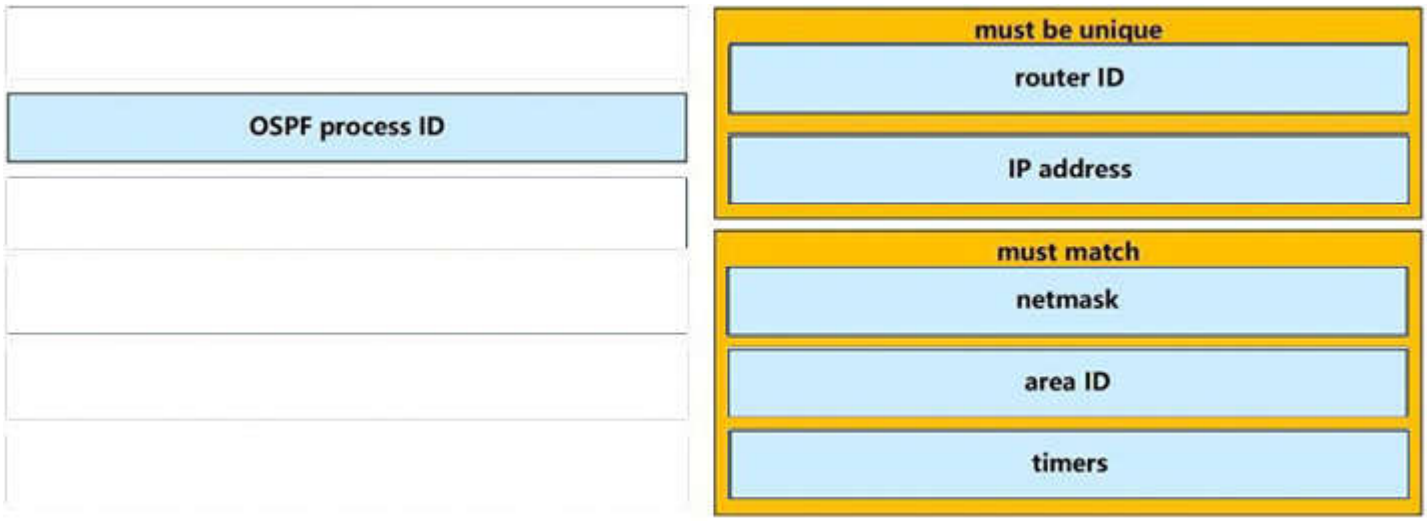
Drag and Drop

QUESTION 1
A network engineer is configuring an OSPFv2 neighbor adjacency. Drag and drop the parameters from the left onto their required categories on the right. No all parameters are used.

Select and Place:



Correct Answer:

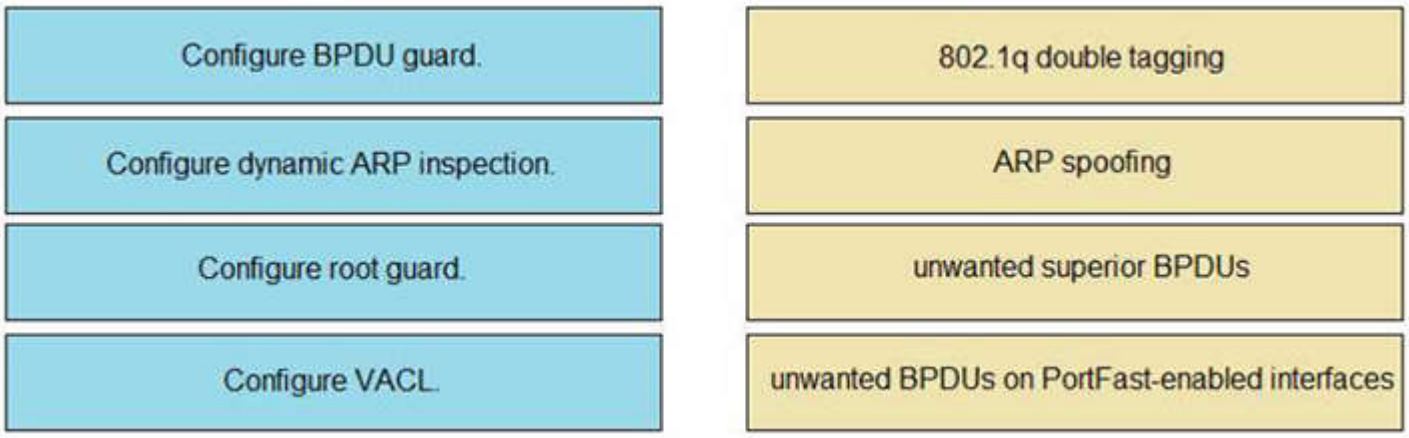


Section: 3. IP Connectivity
Explanation

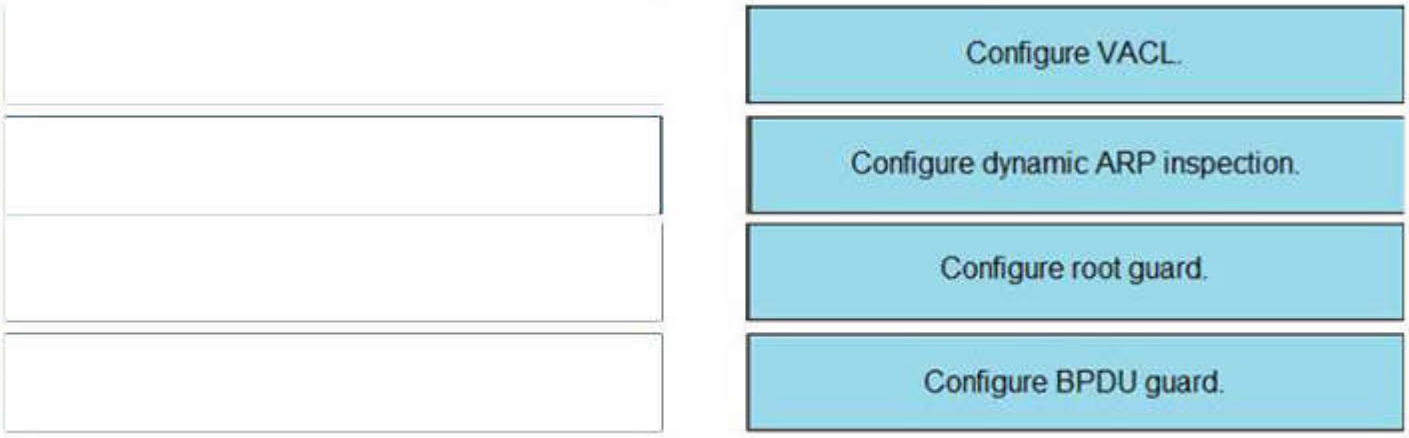
Explanation/Reference:

QUESTION 2
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:

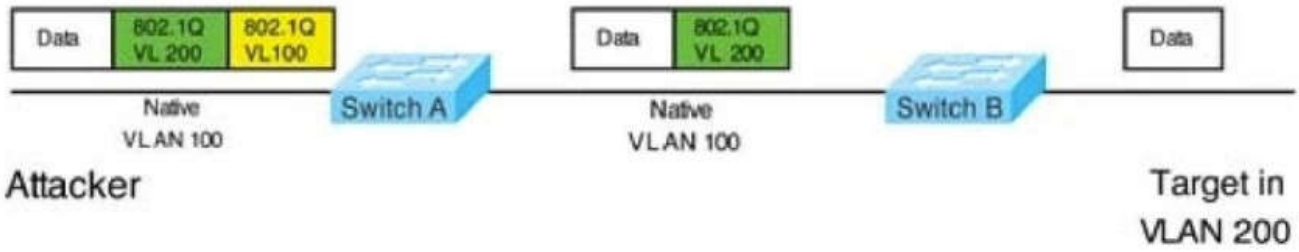


Correct Answer:



Section: 5. Security Fundamentals
Explanation

Explanation/Reference:
Double-Tagging attack:

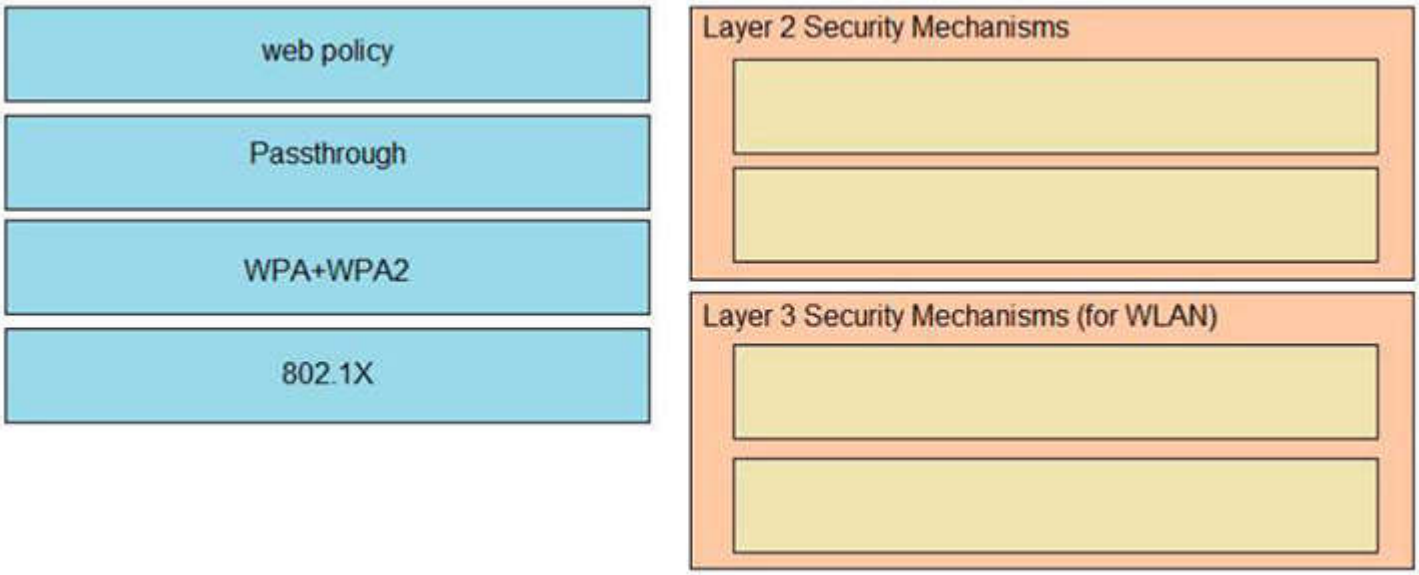


In this attack, the attacking computer generates frames with two 802.1Q tags. The first tag matches the native VLAN of the trunk port (VLAN 10 in this case), and the second matches the VLAN of a host it wants to attack (VLAN 20).
When the packet from the attacker reaches Switch A, Switch A only sees the first VLAN 10 and it matches with its native VLAN 10 so this VLAN tag is removed. Switch A forwards the frame out all links with the same native VLAN 10. Switch B receives the frame with an tag of VLAN 20 so it removes this tag and forwards out to the Victim computer.
Note: This attack only works if the trunk (between two switches) has the same native VLAN as the attacker.
To mitigate this type of attack, you can use VLAN access control lists (VACLs, which applies to all traffic within a VLAN. We can use VACL to drop attacker traffic to specific victims/servers) or implement Private VLANs.
ARP attack (like ARP poisoning/spoofing) is a type of attack in which a malicious actor sends falsified ARP messages over a local area network as ARP allows a gratuitous reply from a host even if an ARP request was

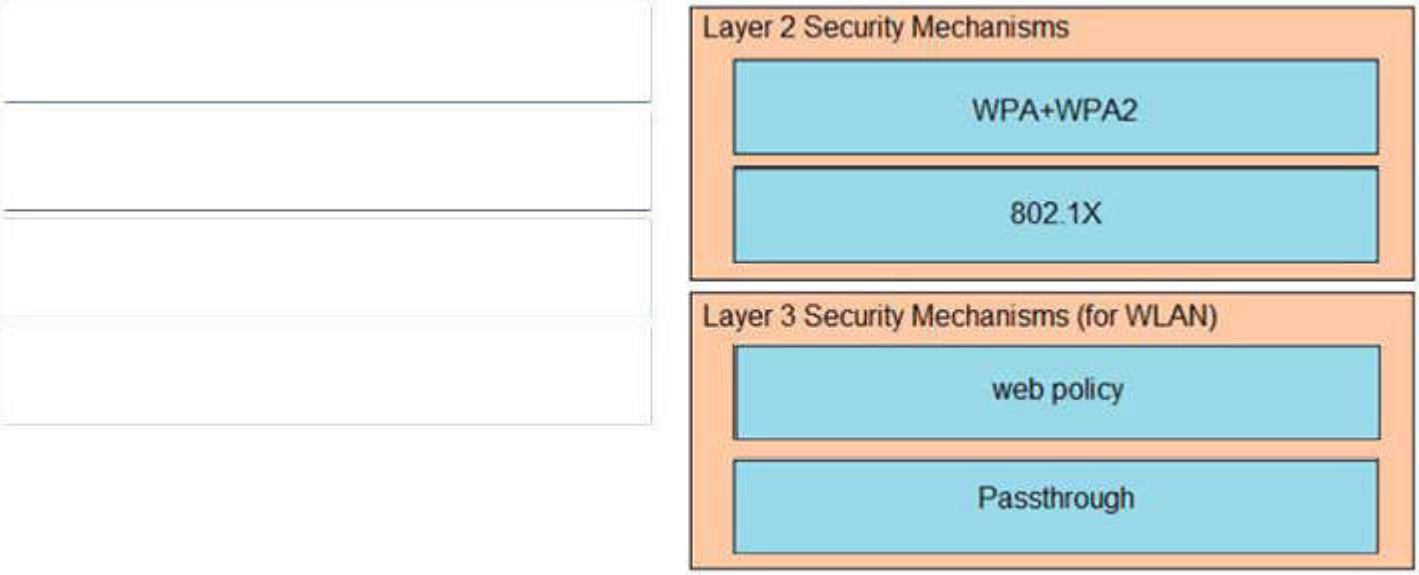
not received. This results in the linking of an attacker's MAC address with the IP address of a legitimate computer or server on the network. This is an attack based on ARP which is at Layer 2.
Dynamic ARP inspection (DAI) is a security feature that validates ARP packets in a network which can be used to mitigate this type of attack.

QUESTION 3
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:



Correct Answer:

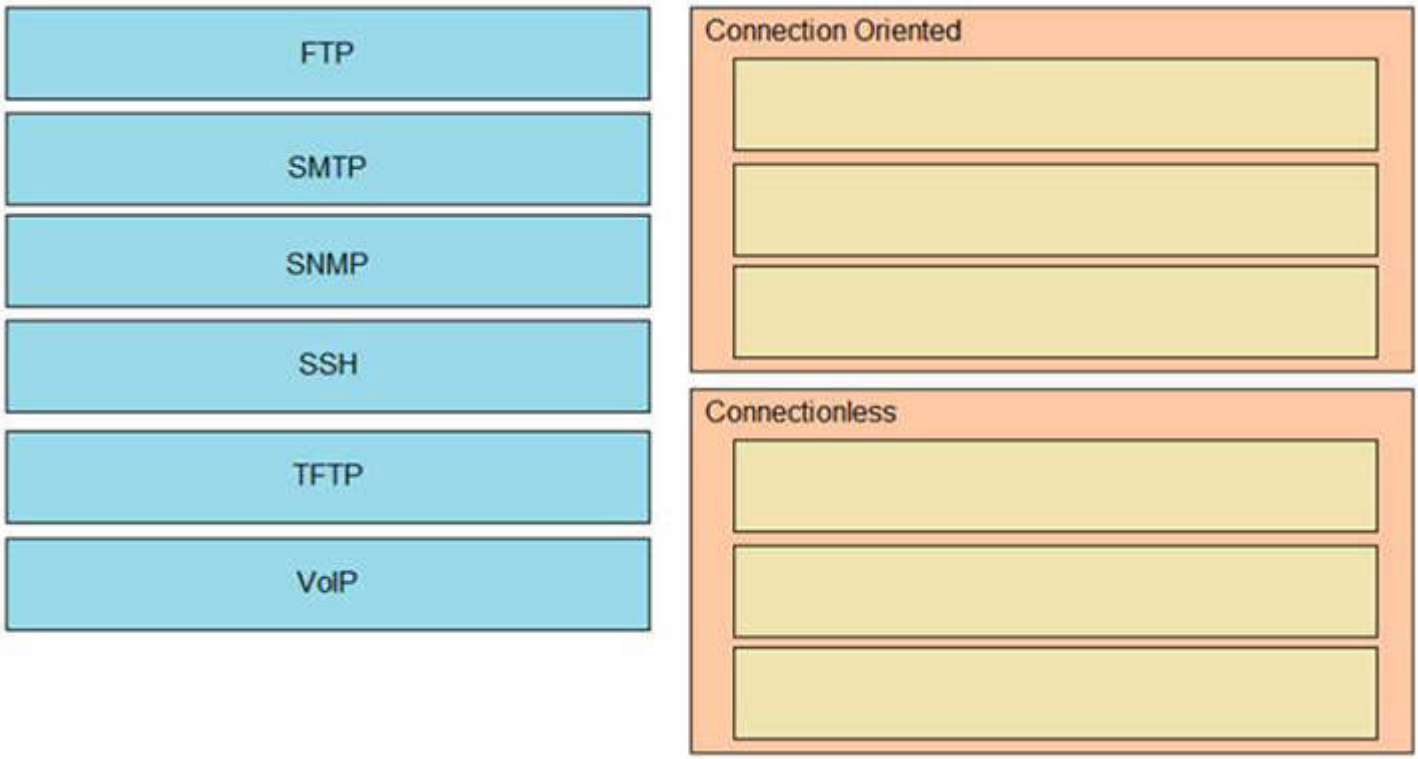


Section: 5. Security Fundamentals
Explanation

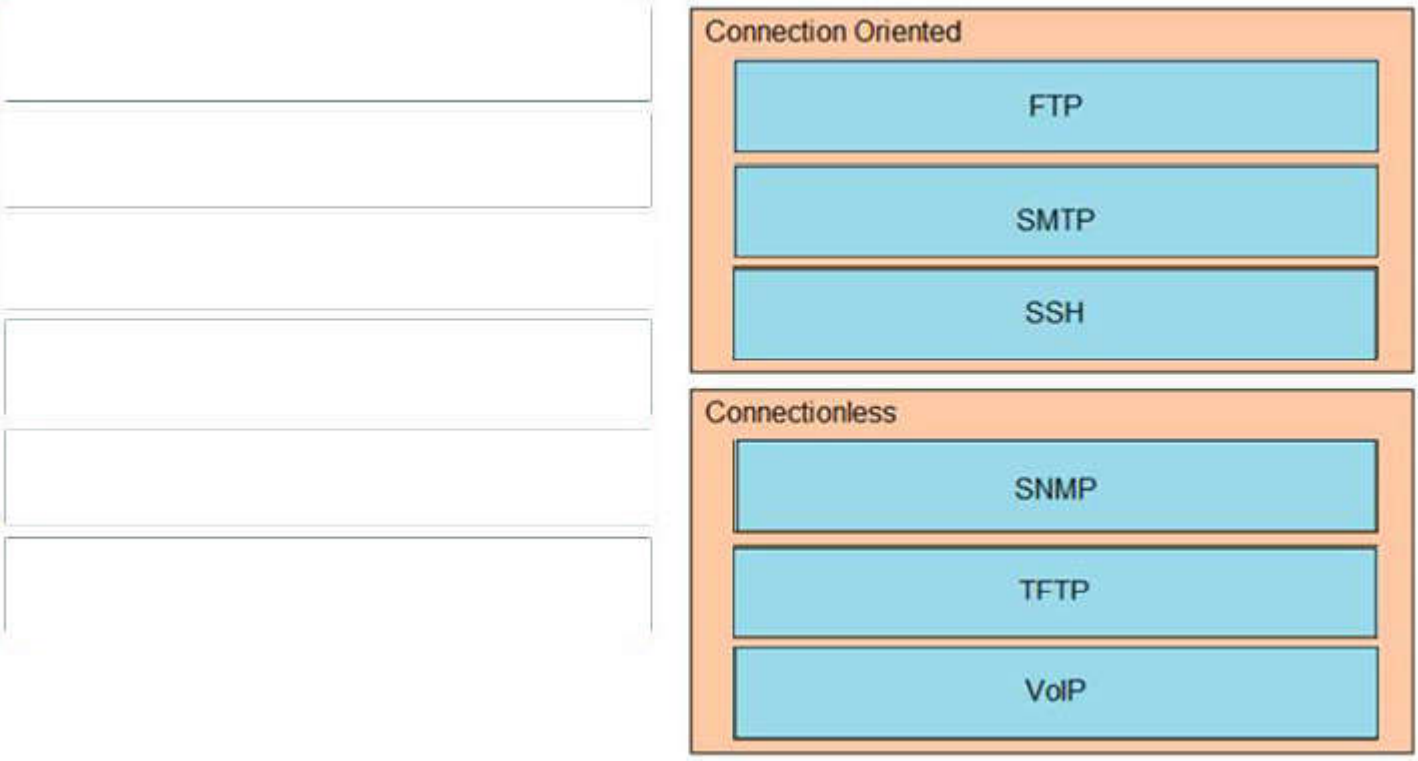
Explanation/Reference:
Layer 2 Security Mechanism includes WPA+WPA2, 802.1X, Static WEP, CKIP while Layer 3 Security Mechanisms (for WLAN) includes IPSec, VPN Pass-Through, Web Passthrough ...
Reference: Click here

QUESTION 4
Drag and drop the network protocols from the left onto the correct transport services on the right.

Select and Place:



Correct Answer:



Section: 4. IP Services
Explanation

Explanation/Reference:
SSH uses TCP port 22 while SNMP uses UDP port 161 and 162.

QUESTION 5
Refer to the exhibit.

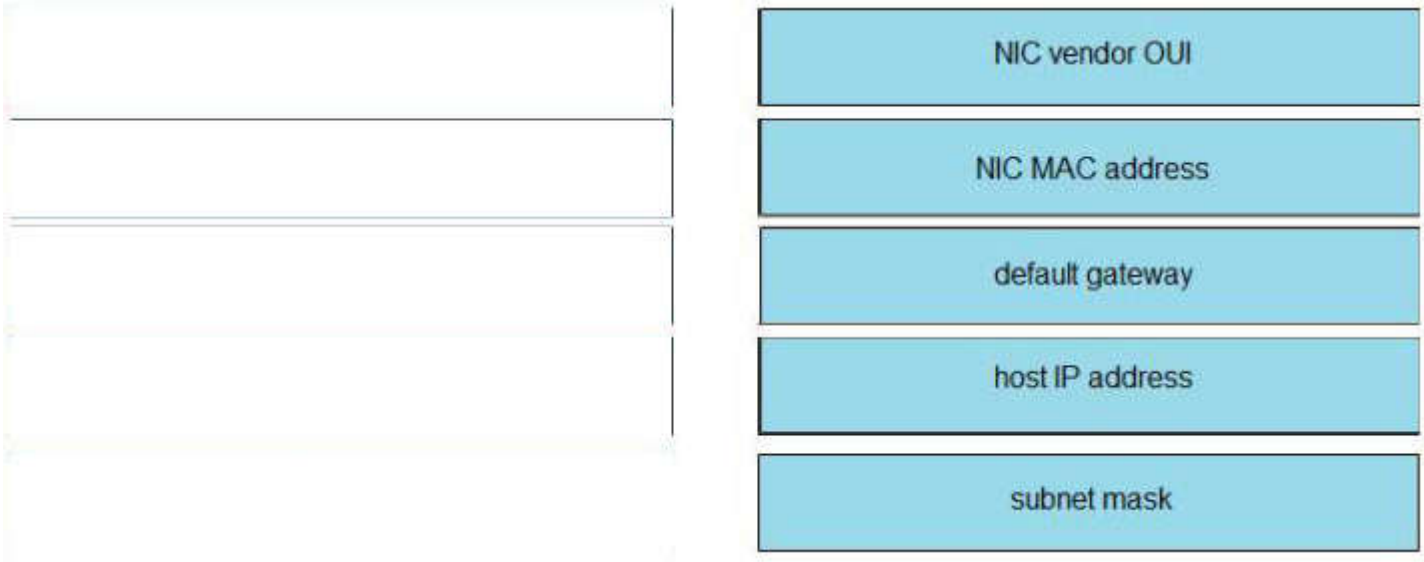
```
[root#HostTime =]# ip route
default via 192.168.1.193 dev eth1 proto static
192.168.1.0/26 dev sth1 proto kernel scope link src 192.168.1.200 metric 1

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

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

Select and Place:

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:

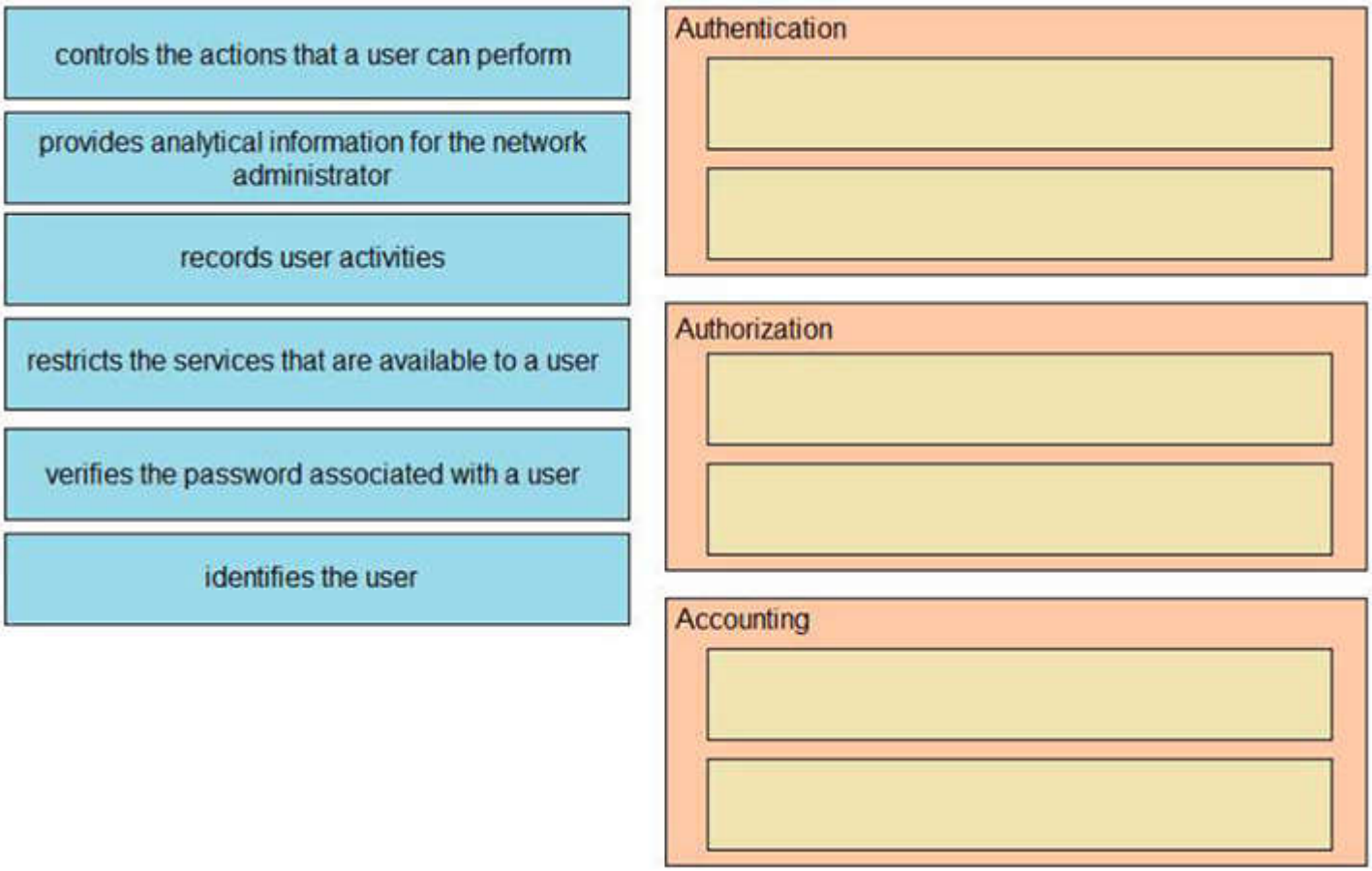


Section: 1. Network Fundamentals
Explanation

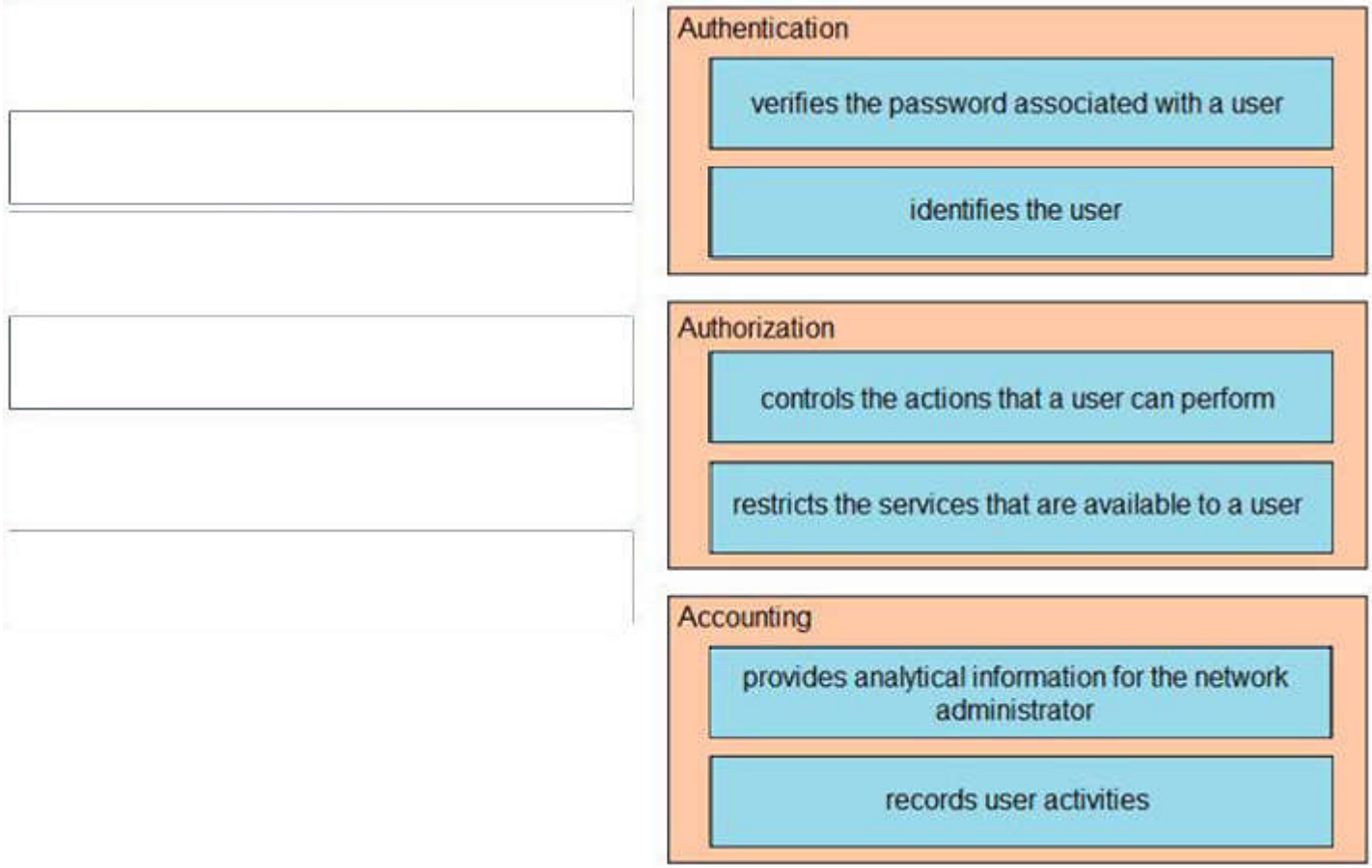
Explanation/Reference:
The "ip route" and "ip addr show eth1" are Linux commands.
+ "ip route": display the routing table
+ "ip addr show eth1": get depth information (only on eth1 interface) about your network interfaces like IP Address, MAC Address information

QUESTION 6
Drag and drop the AAA functions from the left onto the correct AAA services on the right.

Select and Place:



Correct Answer:

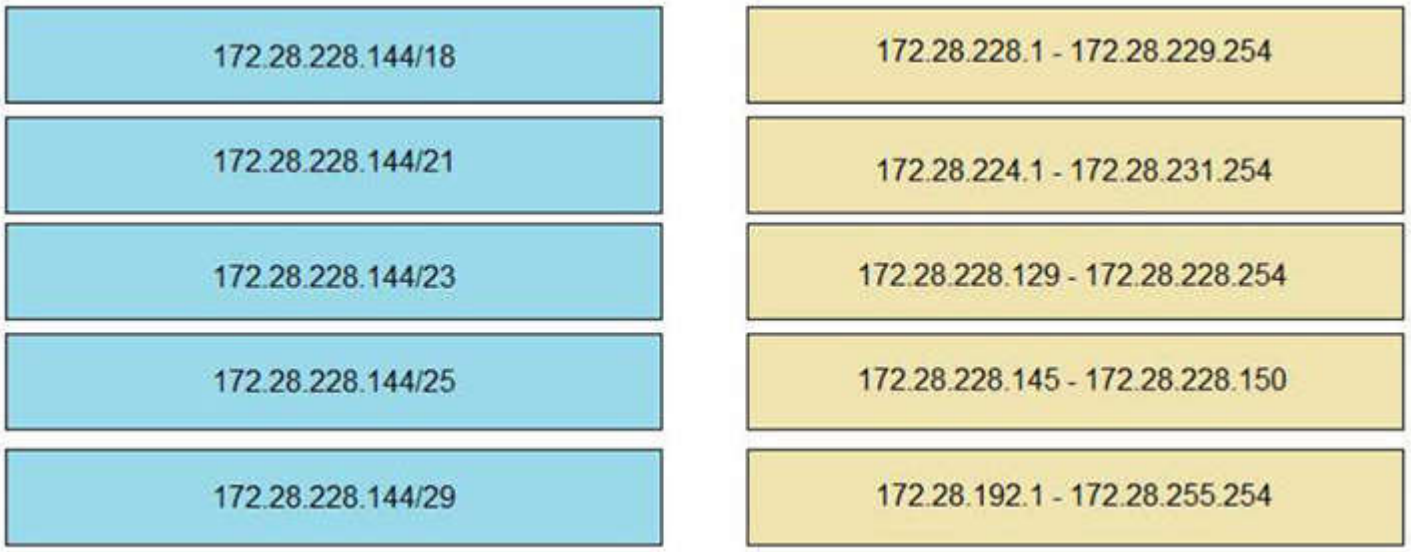


Section: 5. Security Fundamentals
Explanation

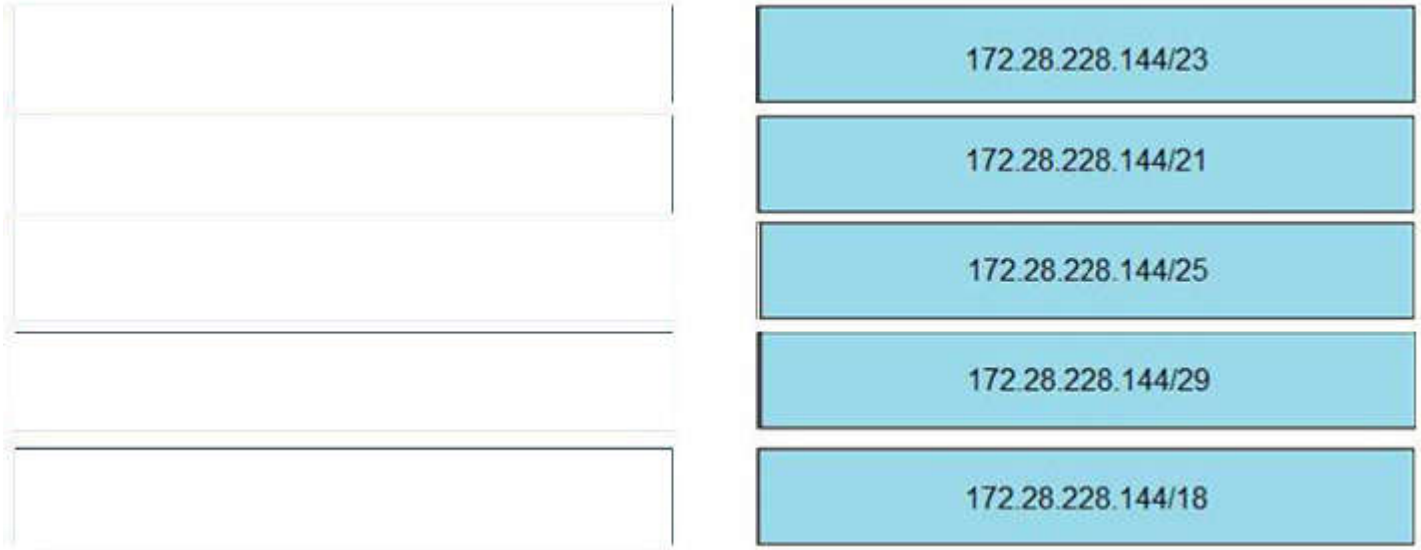
Explanation/Reference:

QUESTION 7
Drag and drop the IPv4 network subnets from the left onto the correct usable host ranges on the right.

Select and Place:



Correct Answer:



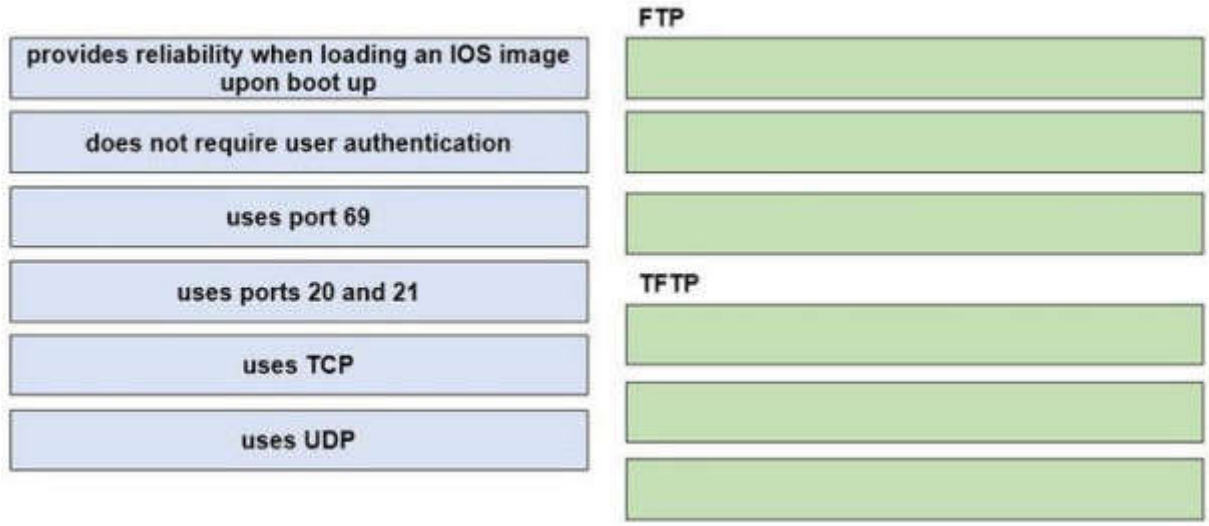
Section: Not categorized
Explanation

Explanation/Reference:
This subnet question requires us to grasp how to subnet very well. To quickly find out the subnet range, we have to find out the increment and the network address of each subnet. Let's take an example with the subnet 172.28.228.144/18:
From the /18 (= 1100 0000 in the 3rd octet), we find out the increment is 64. Therefore the network address of this subnet must be the greatest multiple of the increment but not greater than the value in the 3rd octet (228). We can find out the 3rd octet of the network address is 192 (because 192 = 64 * 3 and 192 < 228) -> The network address is 172.28.192.0. So the first usable host should be 172.28.192.1 and it matches with the 5th answer on the right. In this case we don't need to calculate the broadcast address because we found the correct answer.
Let's take another example with subnet 172.28.228.144/23 -> The increment is 2 (as /23 = 1111 1110 in 3rd octet) -> The 3rd octet of the network address is 228 (because 228 is the multiply of 2 and equal to the 3rd octet) -> The network address is 172.28.228.0 -> The first usable host is 172.28.228.1. It is not necessary but if we want to find out the broadcast address of this subnet, we can find out the next network address, which is 172.28.(228 + the increment number).0 or 172.28.230.0 then reduce 1 bit -> 172.28.229.255 is the broadcast address of our subnet.

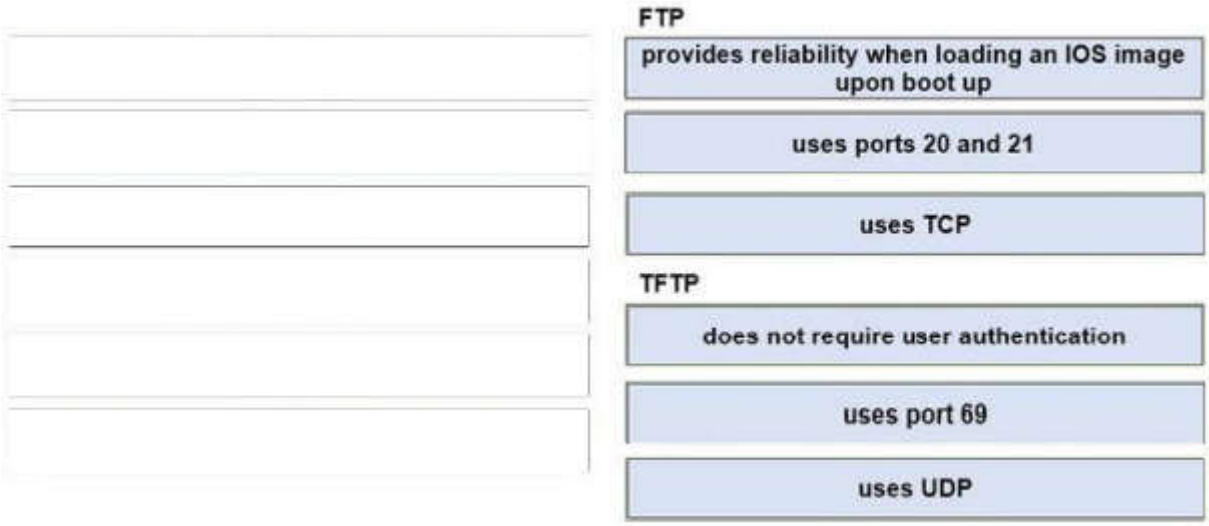
Therefore the last usable host is 172.28.229.254.

QUESTION 8
Drag and drop the descriptions of file-transfer protocols from the left onto the correct protocols on the right.

Select and Place:



Correct Answer:

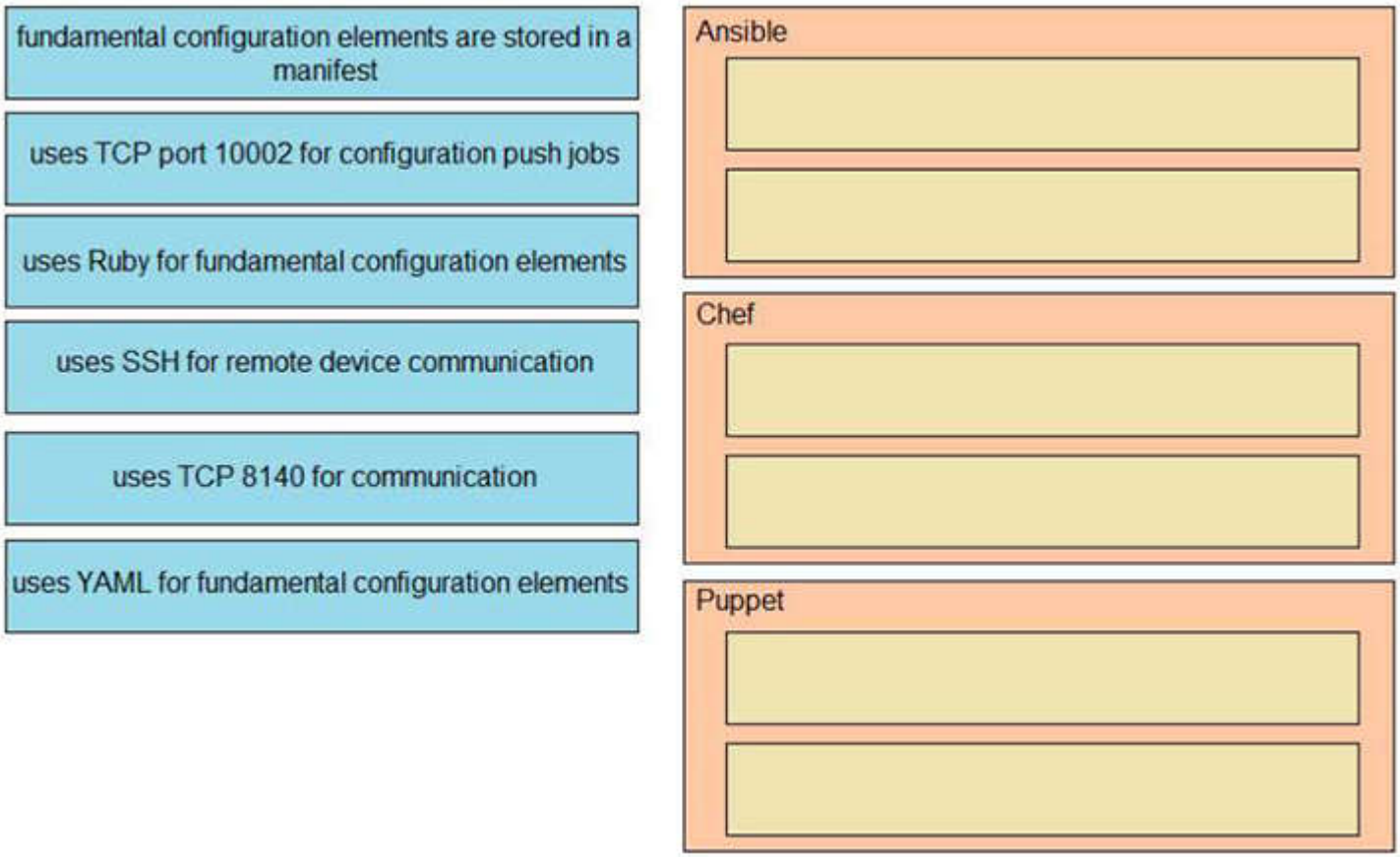


Section: 1. Network Fundamentals
Explanation

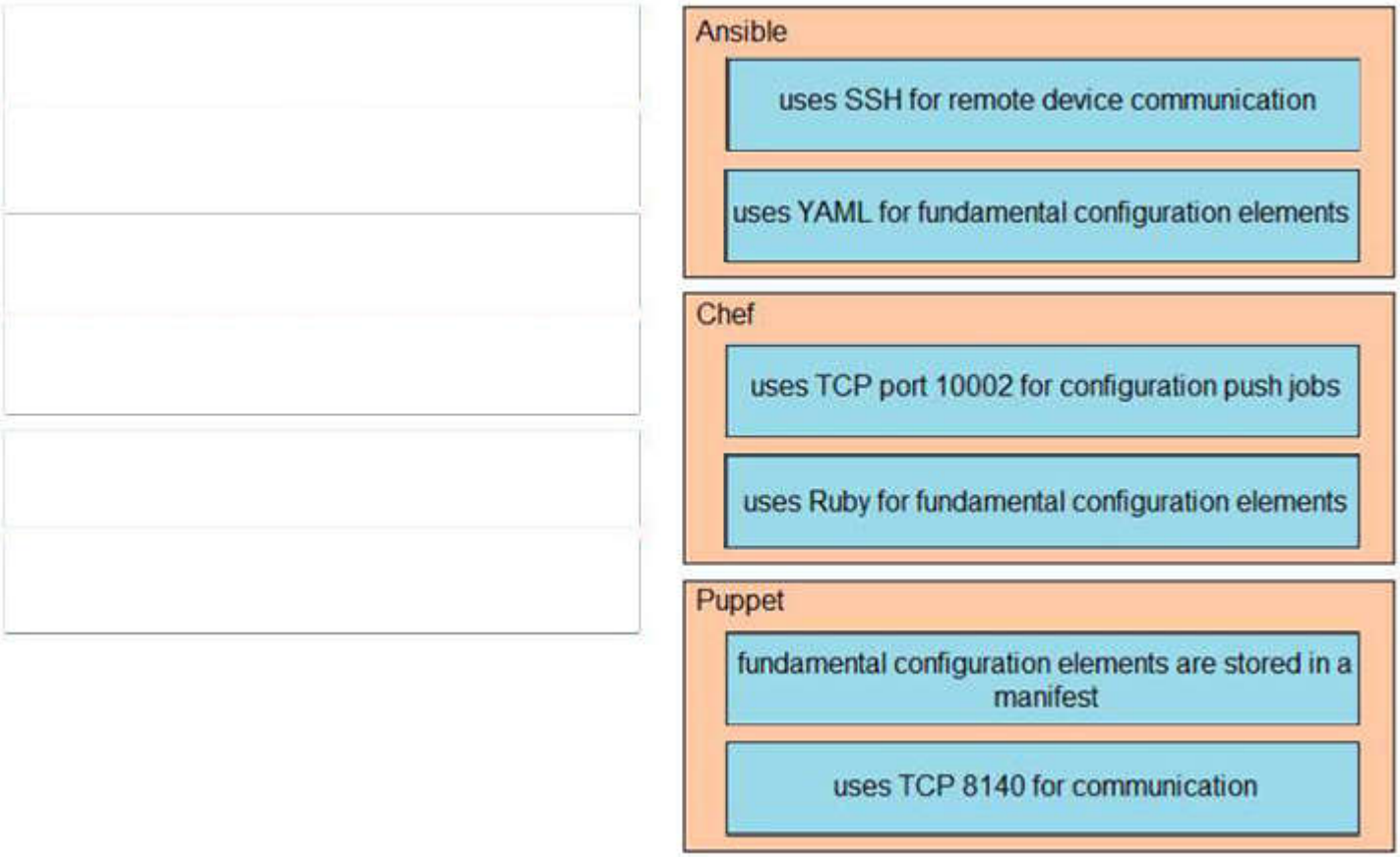
Explanation/Reference:

QUESTION 9
Drag drop the descriptions from the left on to the correct configuration-management technologies on the right.

Select and Place:



Correct Answer:

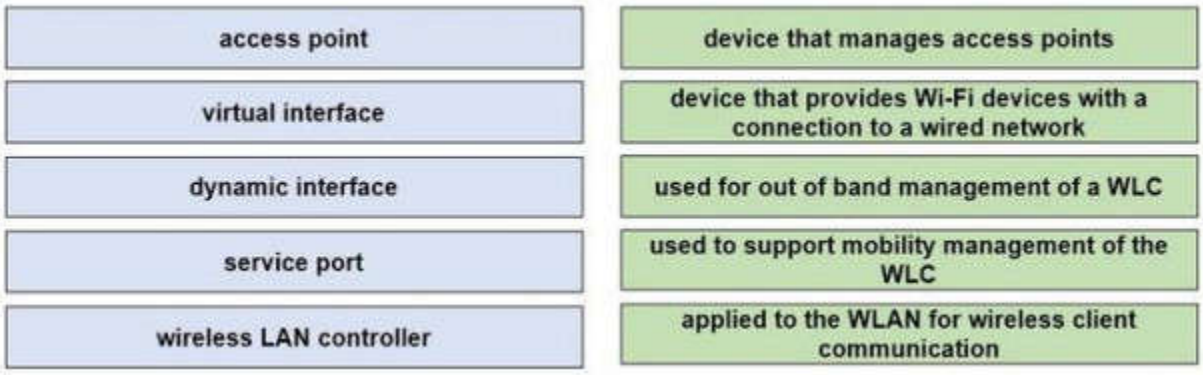


Section: 6. Automation and Programmability
Explanation

Explanation/Reference:
The focus of Ansible is to be streamlined and fast, and to require no node agent installation.
Thus, Ansible performs all functions over SSH. Ansible is built on Python, in contrast to the Ruby foundation of Puppet and Chef.
TCP port 10002 is the command port. It may be configured in the Chef Push Jobs configuration file .
This port allows Chef Push Jobs clients to communicate with the Chef Push Jobs server.
Puppet is an open-source configuration management solution, which is built with Ruby and offers custom Domain Specific Language (DSL) and Embedded Ruby (ERB) templates to create custom Puppet language files, offering a declarative-paradigm programming approach.
A Puppet piece of code is called a manifest, and is a file with .pp extension.

QUESTION 10
Drag and drop the WLAN components from the left onto the correct descriptions on the right.

Select and Place:



Correct Answer:

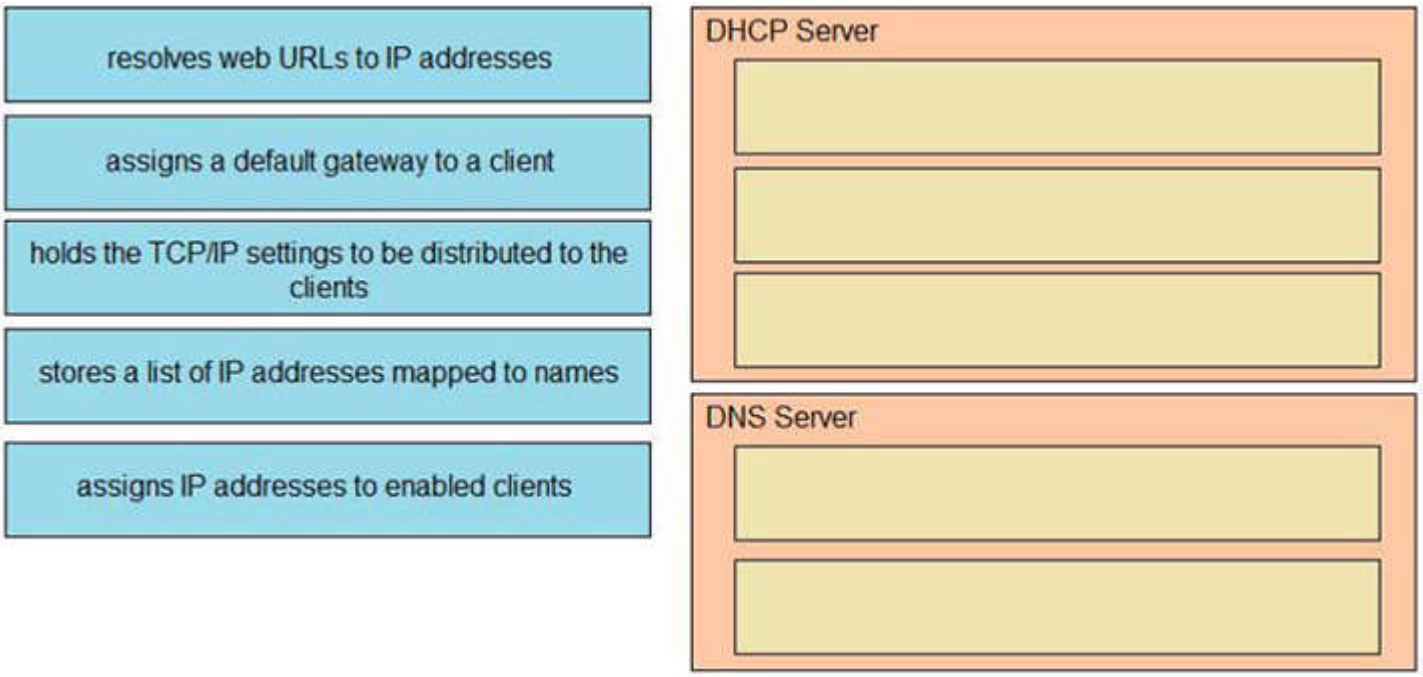


Section: 2. Network Access
Explanation

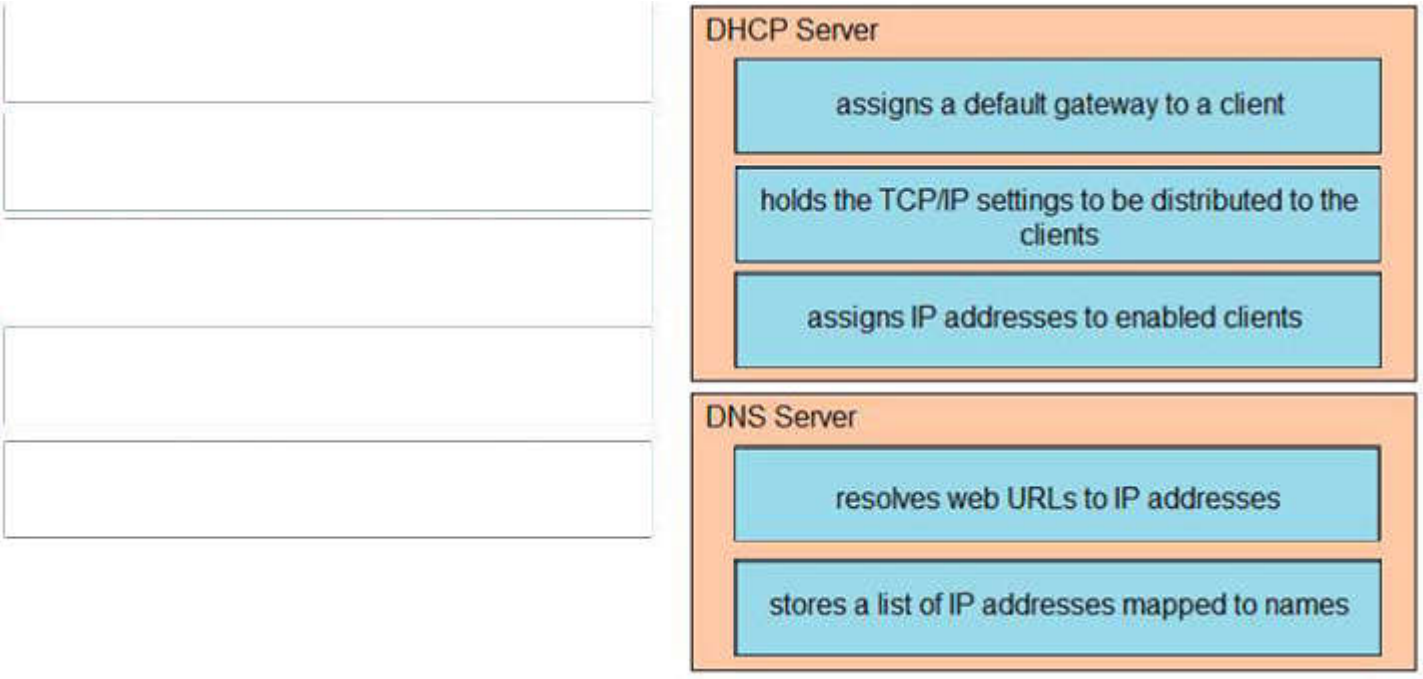
Explanation/Reference:
The service port can be used management purposes, primarily for out-of-band management.
However, AP management traffic is not possible across the service port. In most cases, the service port is used as a "last resort" means of accessing the controller GUI for management purposes. For example, in the case where the system distribution ports on the controller are down or their
communication to the wired network is otherwise degraded.
A dynamic interface with the Dynamic AP Management option enabled is used as the tunnel source for packets from the controller to the access point and as the destination for CAPWAP packets from the access point to the controller.
The virtual interface is used to support mobility management, Dynamic Host Configuration Protocol (DHCP) relay, and embedded Layer 3 security such as guest web authentication. It also maintains the DNS gateway host name used by Layer 3 security and mobility managers to verify the source of certificates when Layer 3 web authorization is enabled.

QUESTION 11
Drag and drop the functions from the left onto the correct network components on the right.

Select and Place:



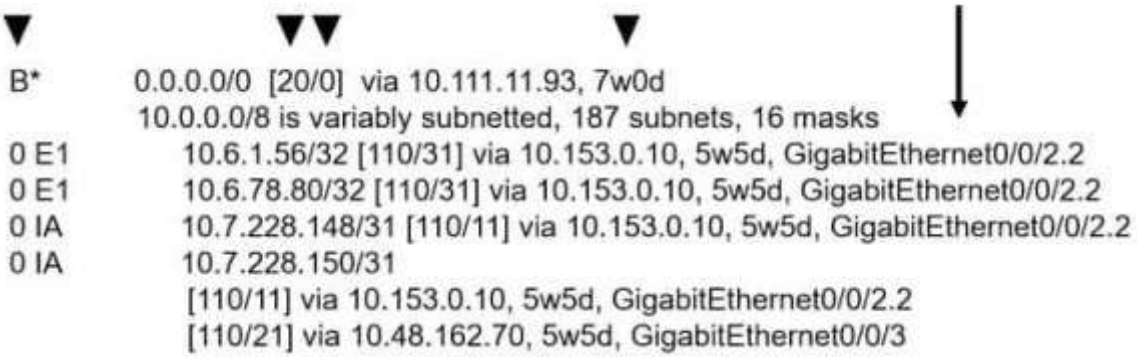
Correct Answer:



Section: 4. IP Services
Explanation

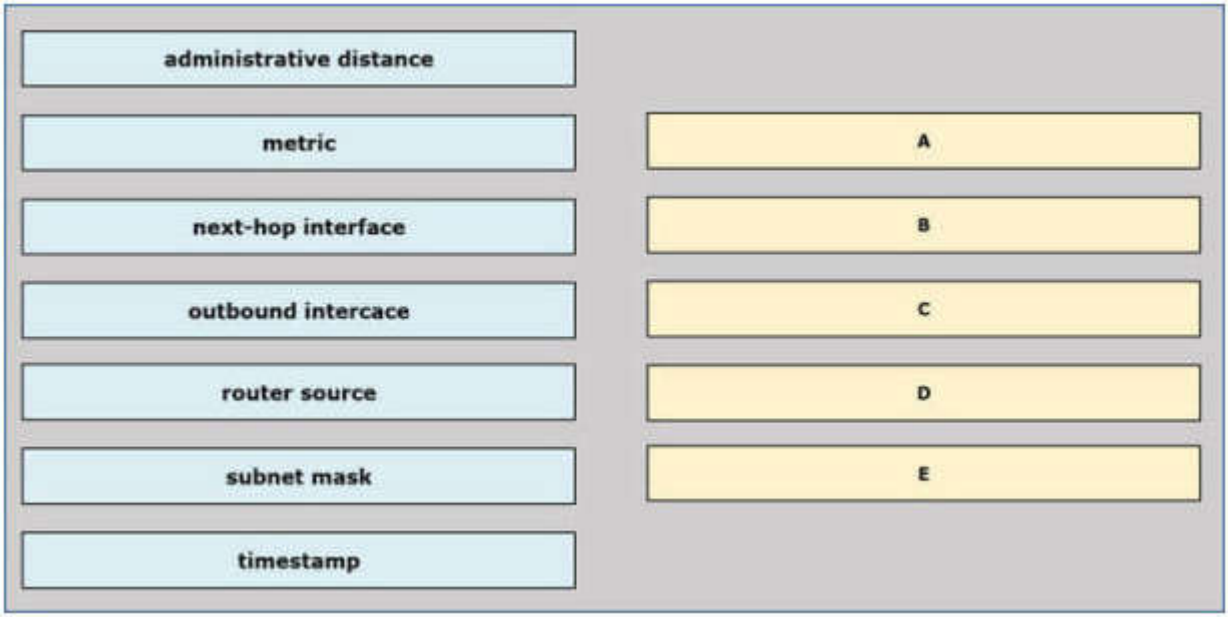
Explanation/Reference:

QUESTION 12
Refer to the exhibit

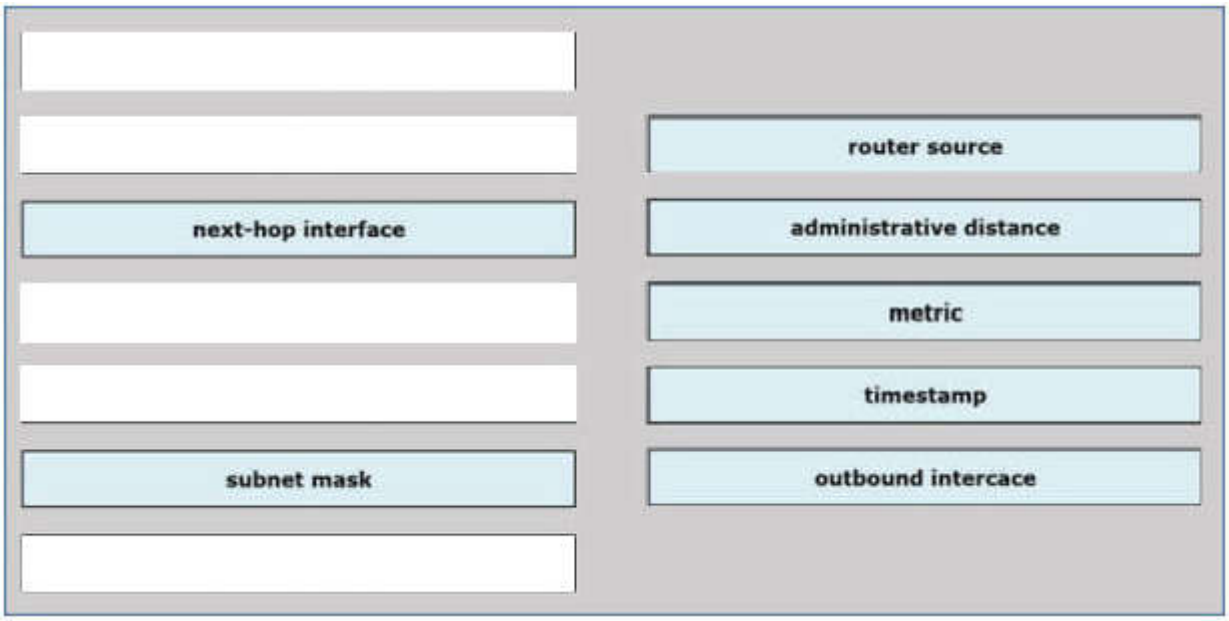


Drag and drop the routing table components on the left onto the corresponding letter from the exhibit on the right not all options are used.

Select and Place:



Correct Answer:

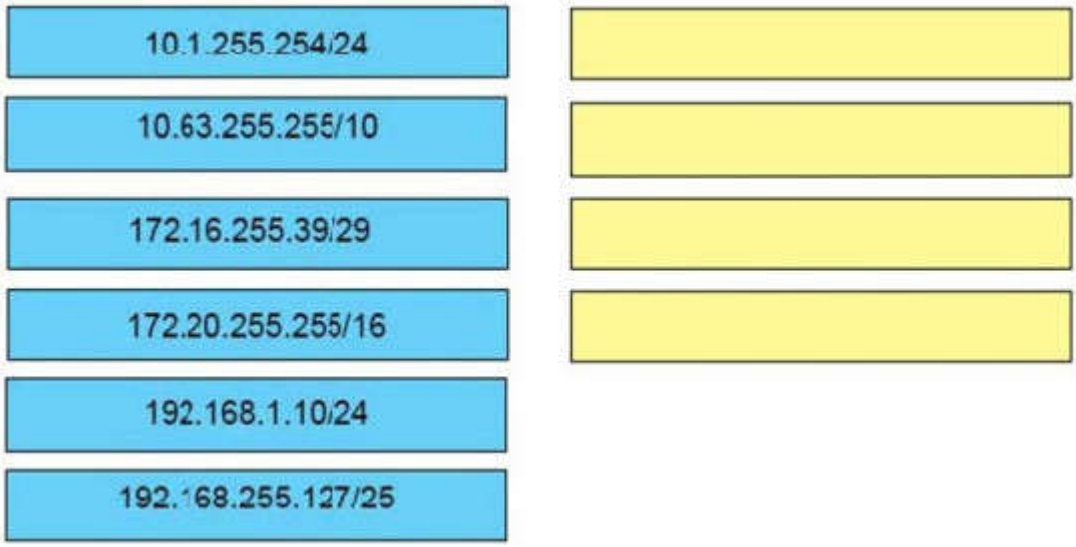


Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 13
Drag and drop each broadcast IP address on the left to the Broadcast Address column on the right Not all options are used.

Select and Place:



Correct Answer:

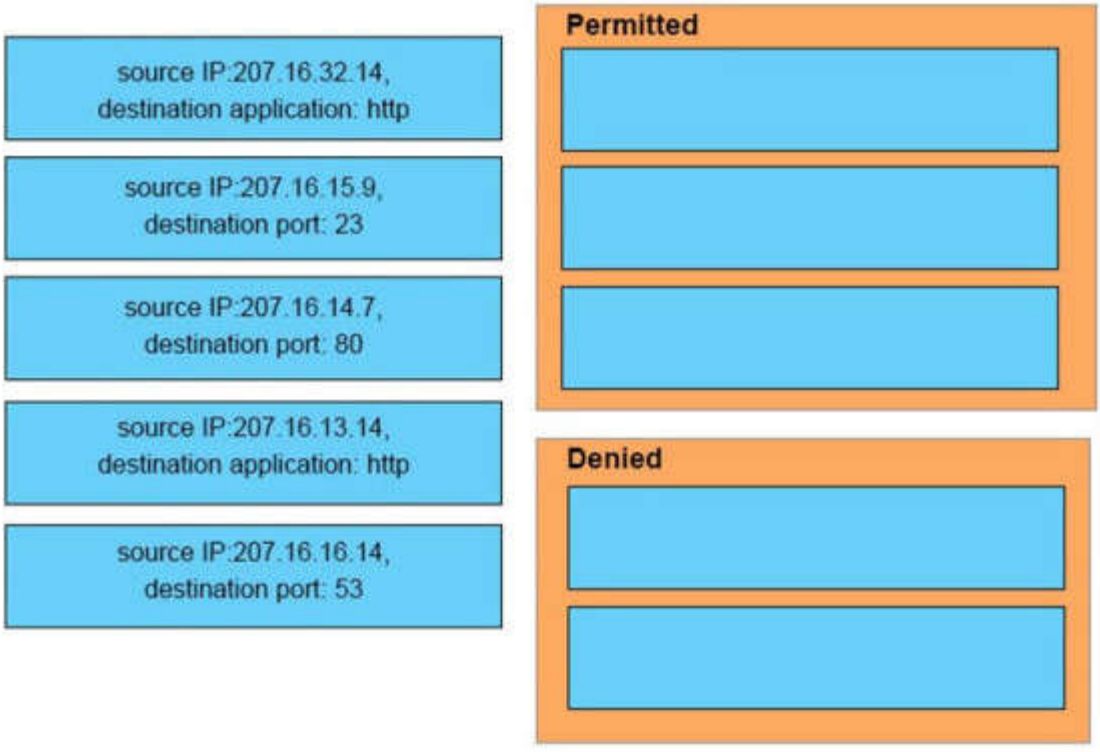


Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 14
An interface has been configured with the access list that is shown below.
access-list 107 deny tcp 207.16.12.0.0.0.3.255 any eq http
access-list 107 permit ip any any
On the basis of that access list, drag each information packet on the left to the appropriate category on the right.

Select and Place:



Correct Answer:

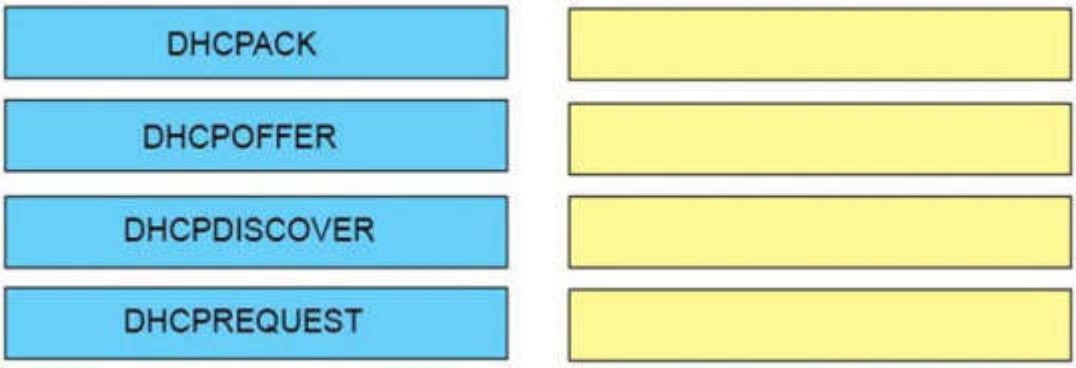


Section: Not categorized
Explanation

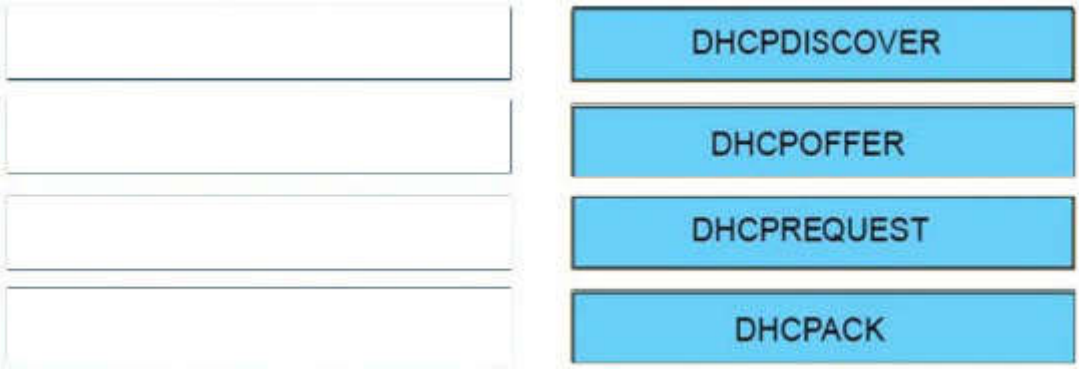
Explanation/Reference:

QUESTION 15
Order the DHCP message types as they would occur between a DHCP client and a DHCP server.

Select and Place:



Correct Answer:

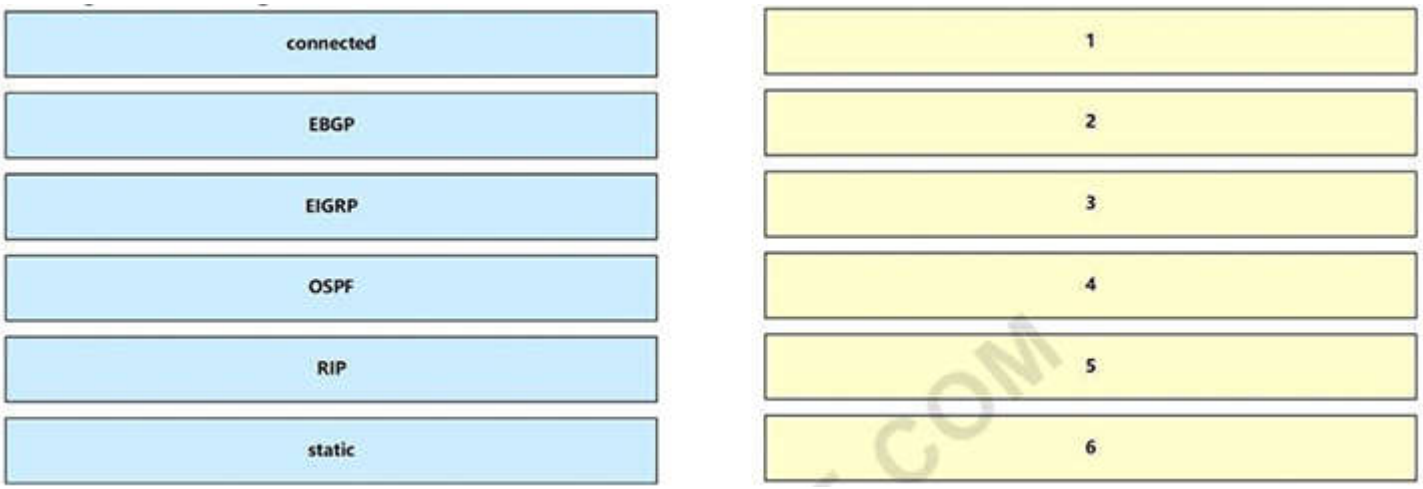


Section: Not categorized
Explanation

Explanation/Reference:

QUESTION 16
Drag each route source from the left to the numbers on the right. Beginning with the lowest and ending with the highest administrative distance.

Select and Place:



Correct Answer:

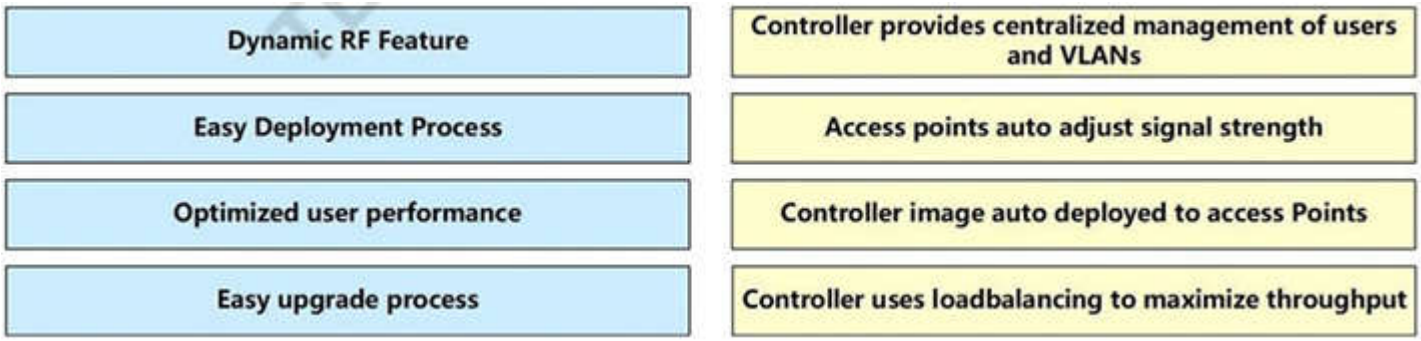


Section: (none)
Explanation

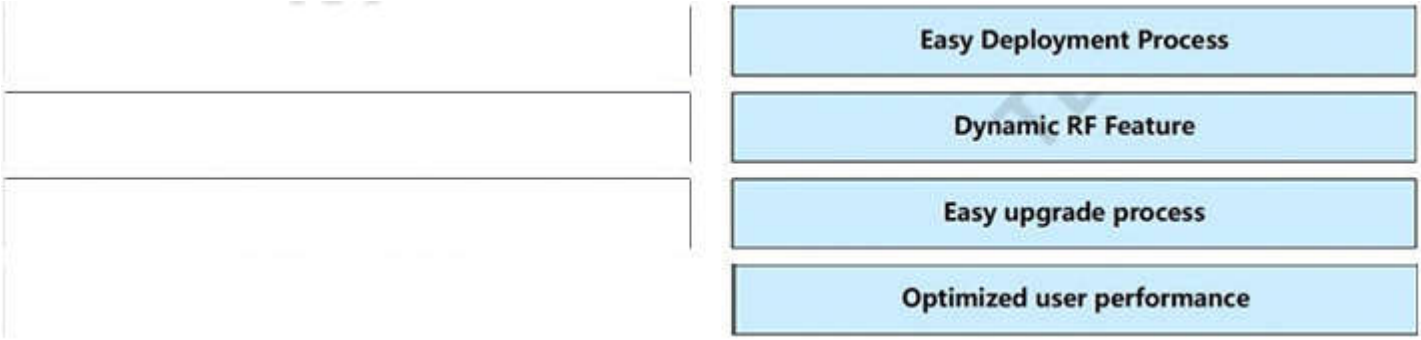
Explanation/Reference:

QUESTION 17
Drag and drop the benefits of a cisco wireless Lan controller from the left onto the correct examples on the right.

Select and Place:



Correct Answer:

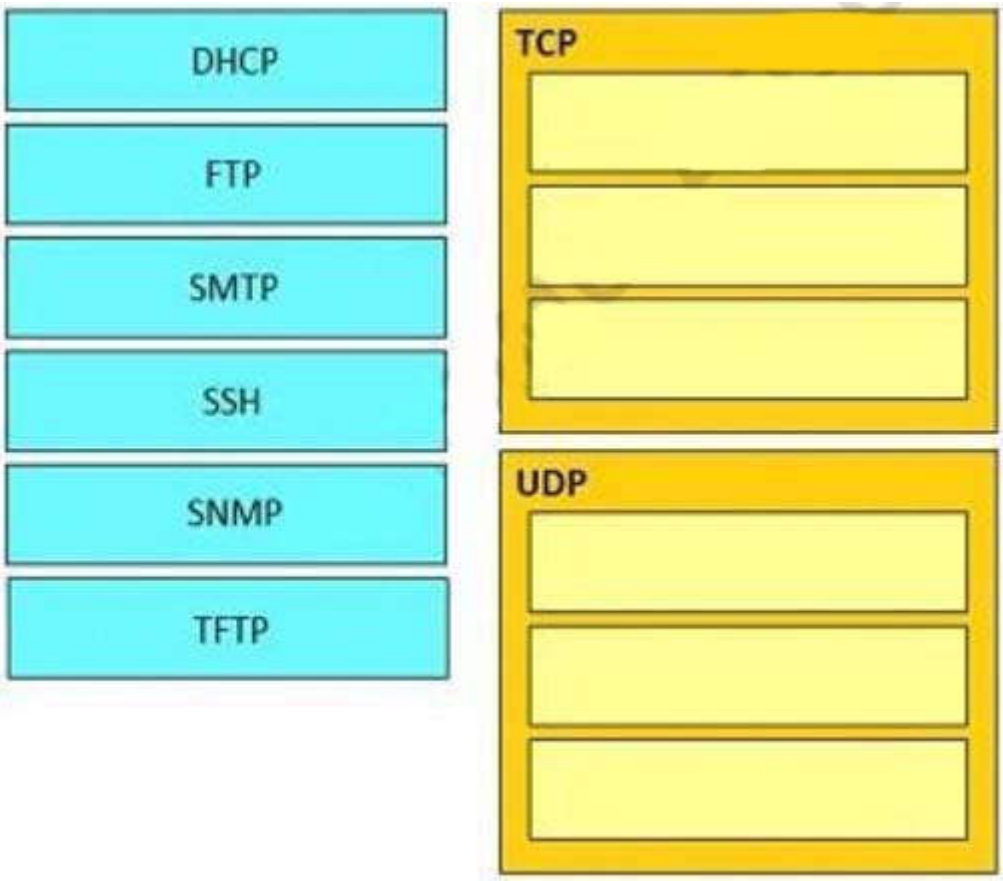


Section: (none)
Explanation

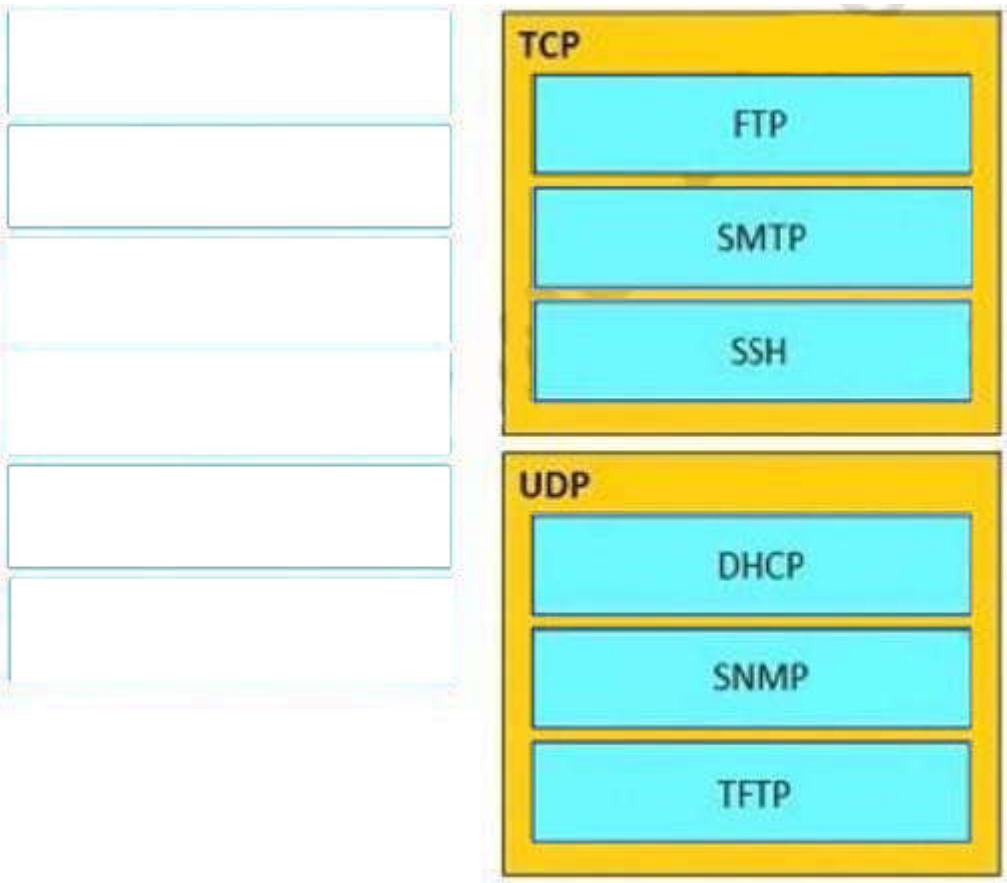
Explanation/Reference:

QUESTION 18
Drag and drop the application protocols from the left onto the transport protocols that is uses on the right.

Select and Place:



Correct Answer:



Section: (none)
Explanation

Explanation/Reference:

QUESTION 19
Refer to the exhibit. Drag and drop the networking parameters from the left on to the correct values on the right.

```
[root#HostTime =]# ip route
default via 192.168.1.193 dev eth1 proto static
192.168.1.0/26 dev sth1 proto kernel scope link src 192.168.1.200 metric 1

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

Select and Place:

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:

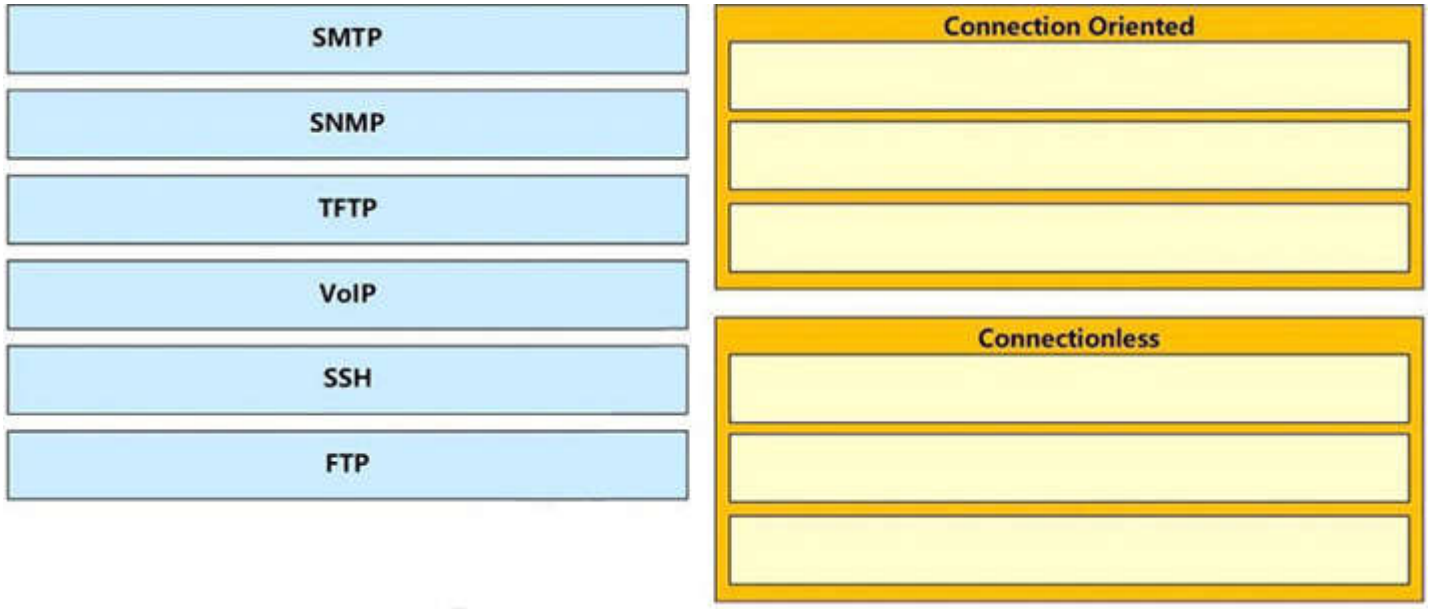
	NIC vendor OUI
	NIC MAC address
	default gateway
	host IP address
	subnet mask

Section: (none)
Explanation

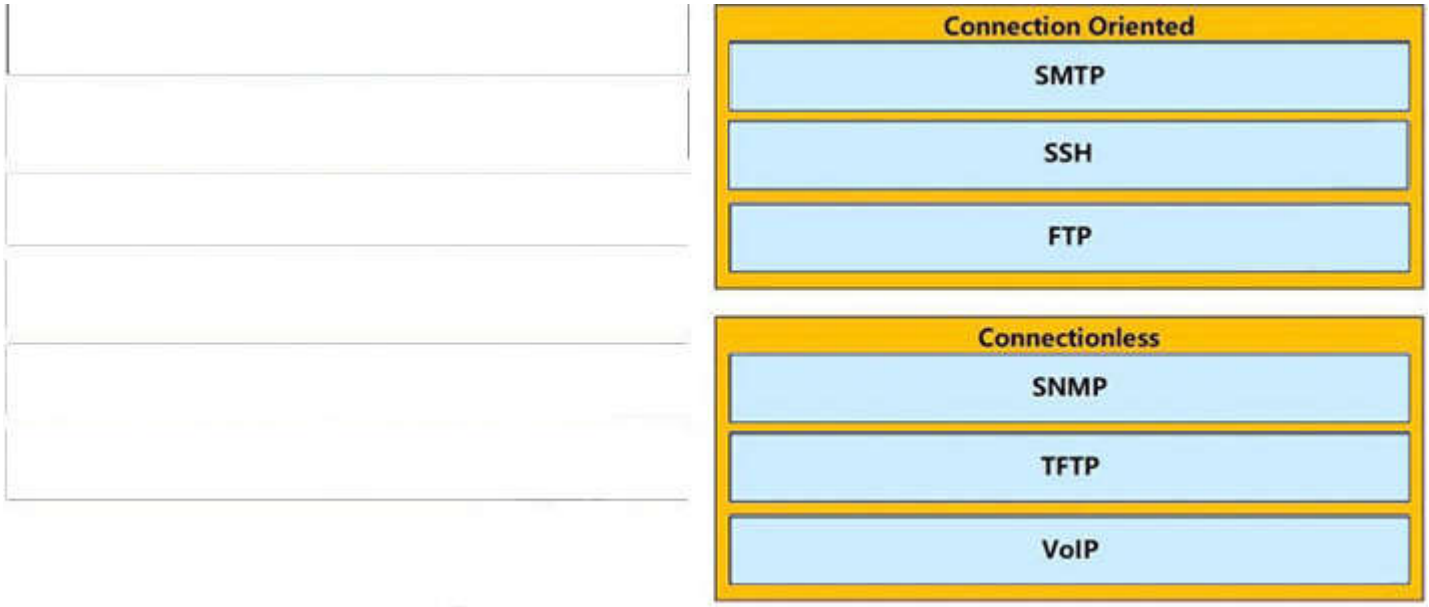
Explanation/Reference:
The “ip route” and “ip addr show eth1” are Linux commands.
+ “ip route”: display the routing table
+ “ip addr show eth1”: get depth information (only on eth1 interface) about your network interfaces like IP Address, MAC Address information

QUESTION 20
Drag and drop the networking parameters from the left on to the correct values on the right.

Select and Place:



Correct Answer:

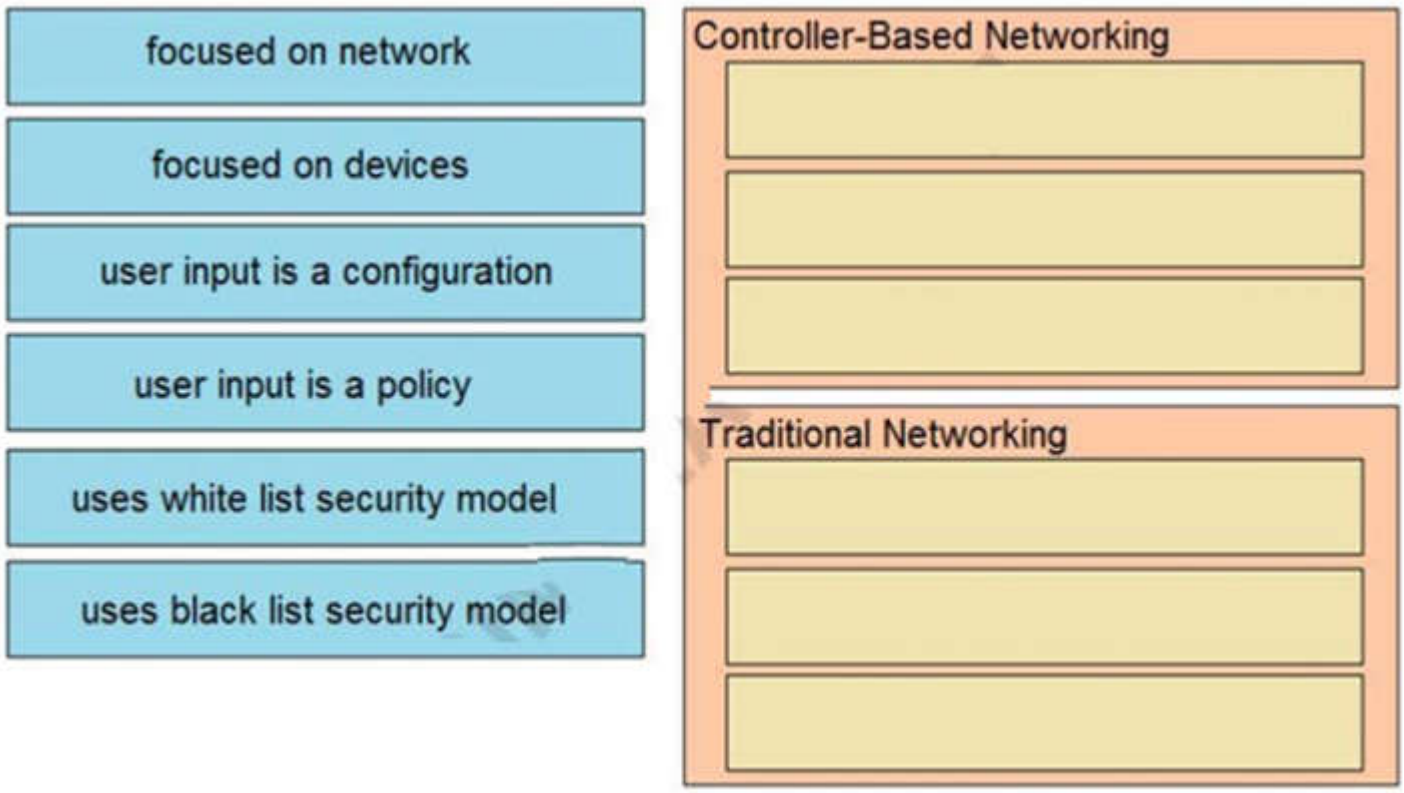


Section: (none)
Explanation

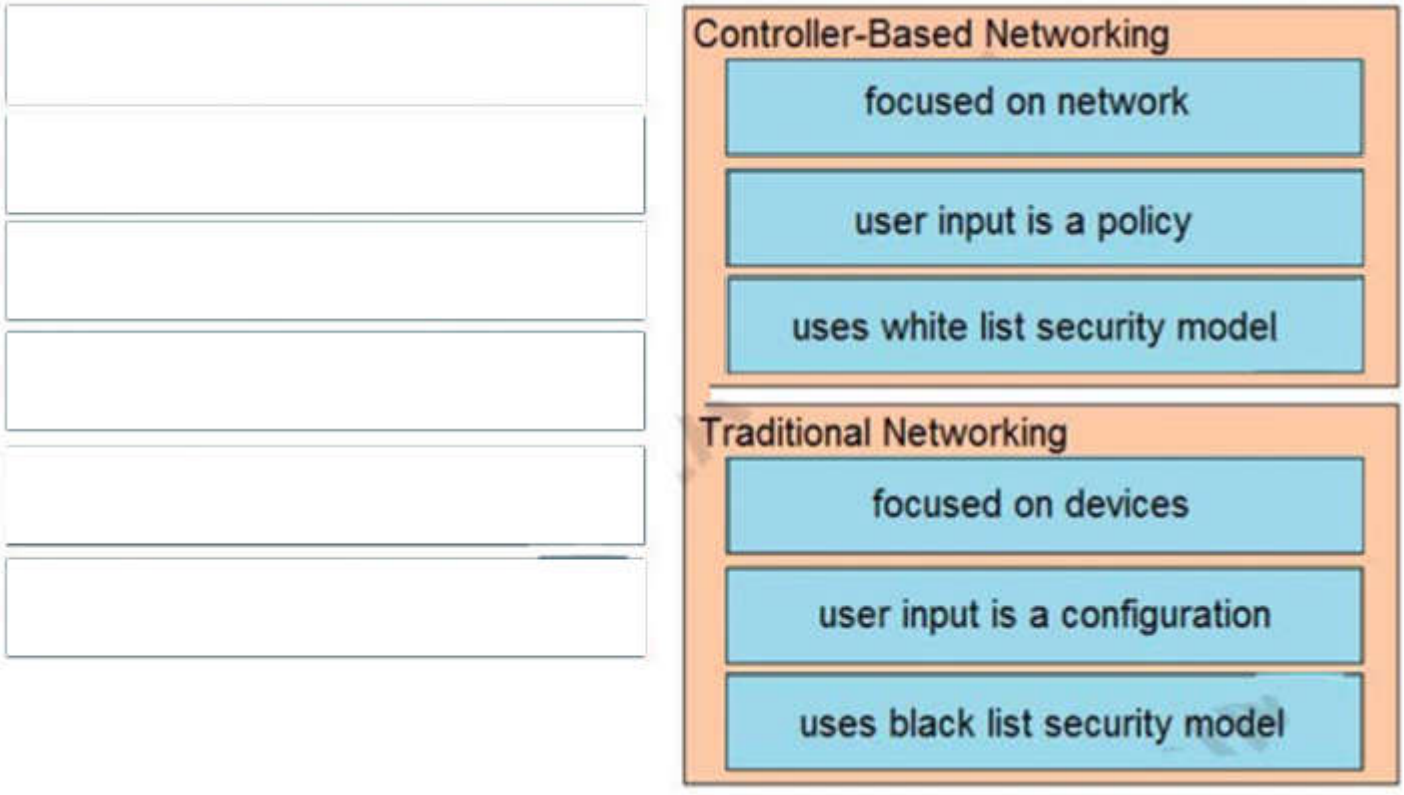
Explanation/Reference:

QUESTION 21
Drag and drop to the characteristics of networking from the left onto the correct networking types on the right.

Select and Place:



Correct Answer:

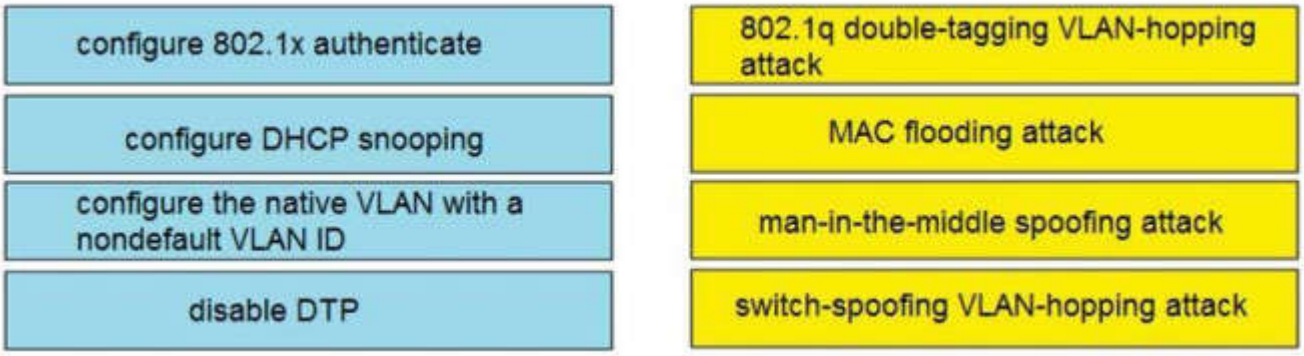


Section: (none)
Explanation

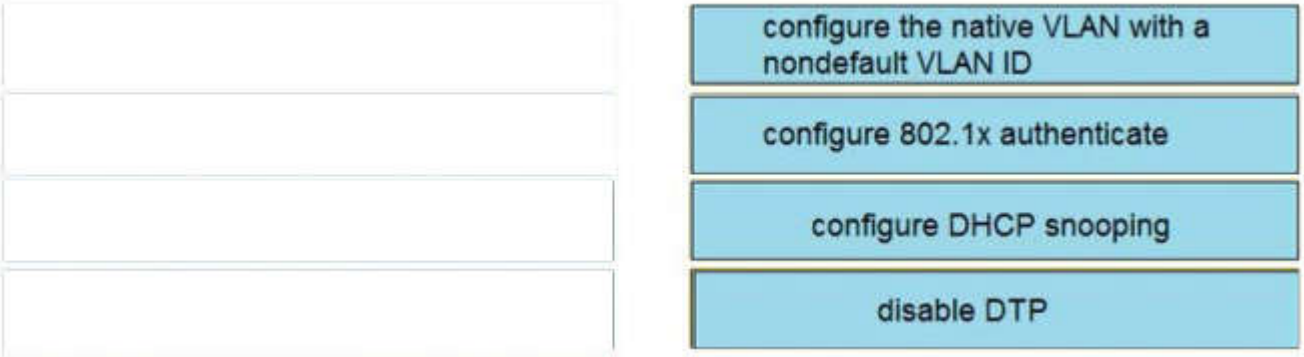
Explanation/Reference:

QUESTION 22
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:

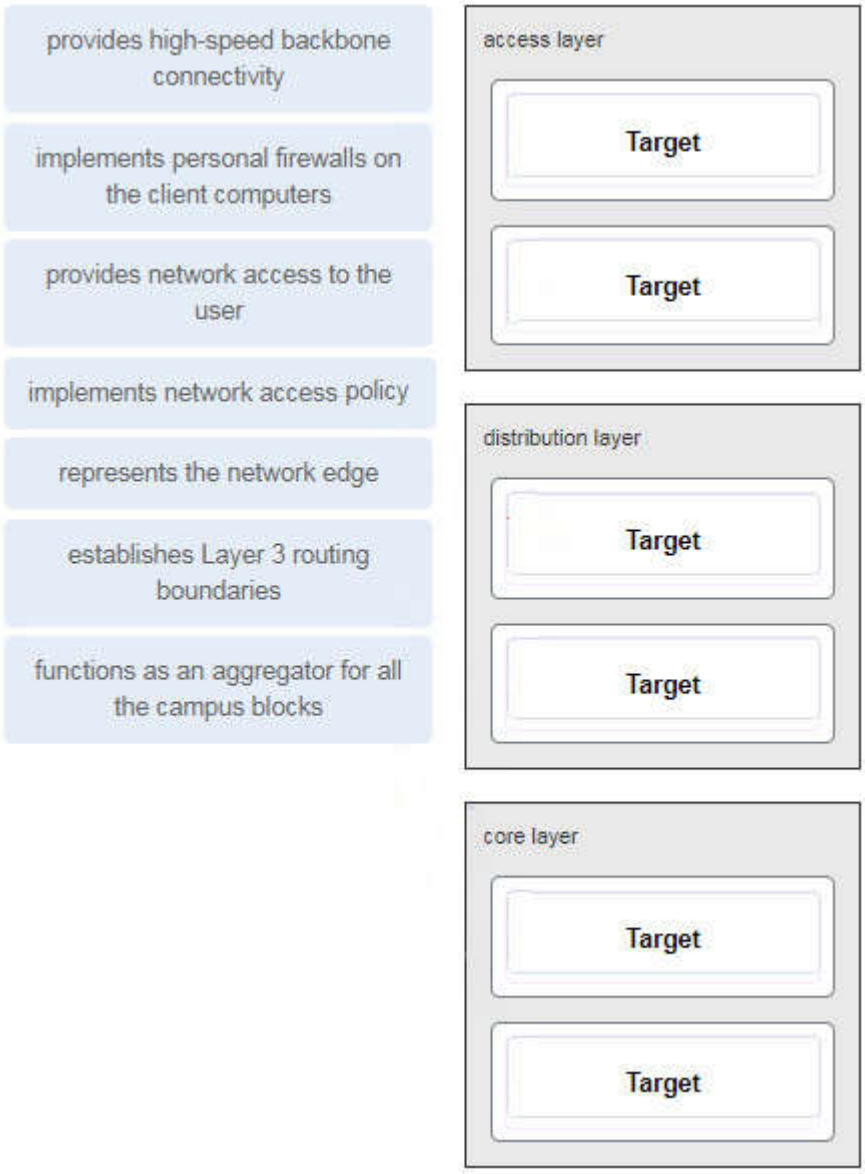


Section: (none)
Explanation

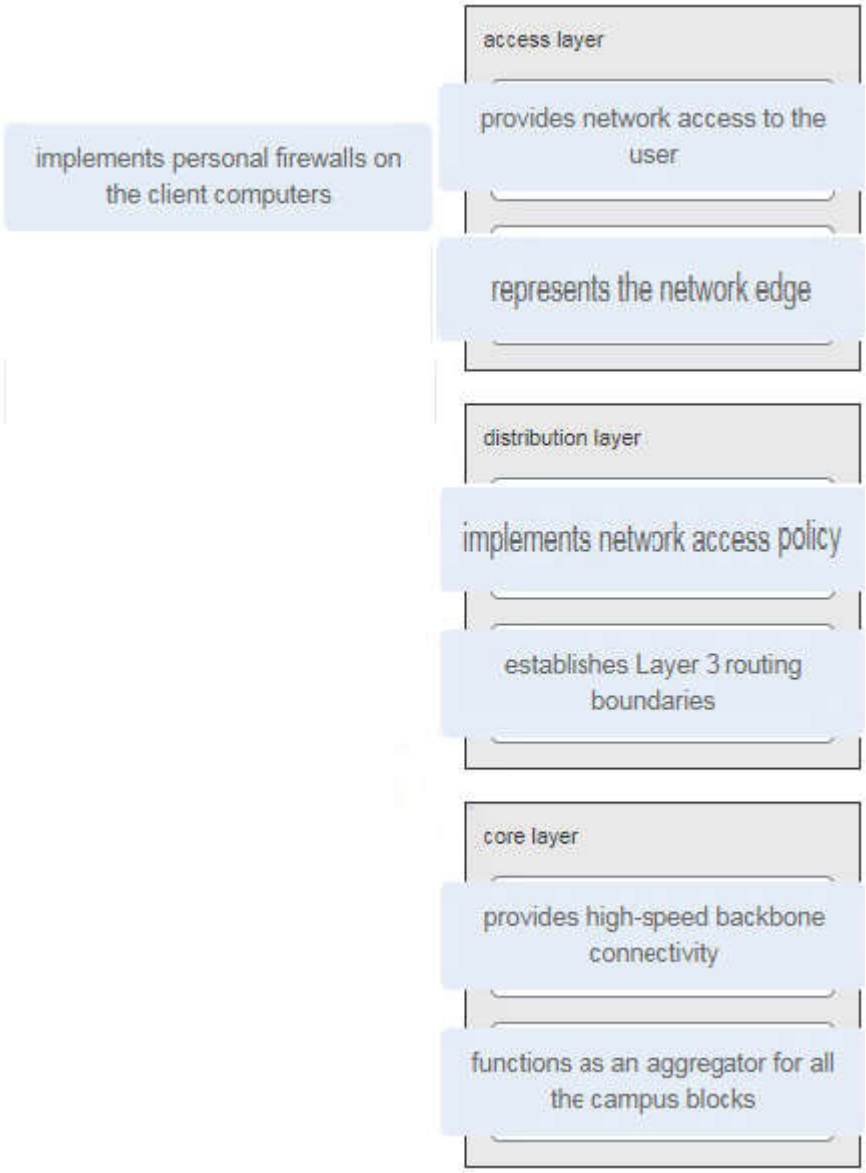
Explanation/Reference:

QUESTION 23
Match the functions to the corresponding layers. (Not all options are used.)

Select and Place:



Correct Answer:

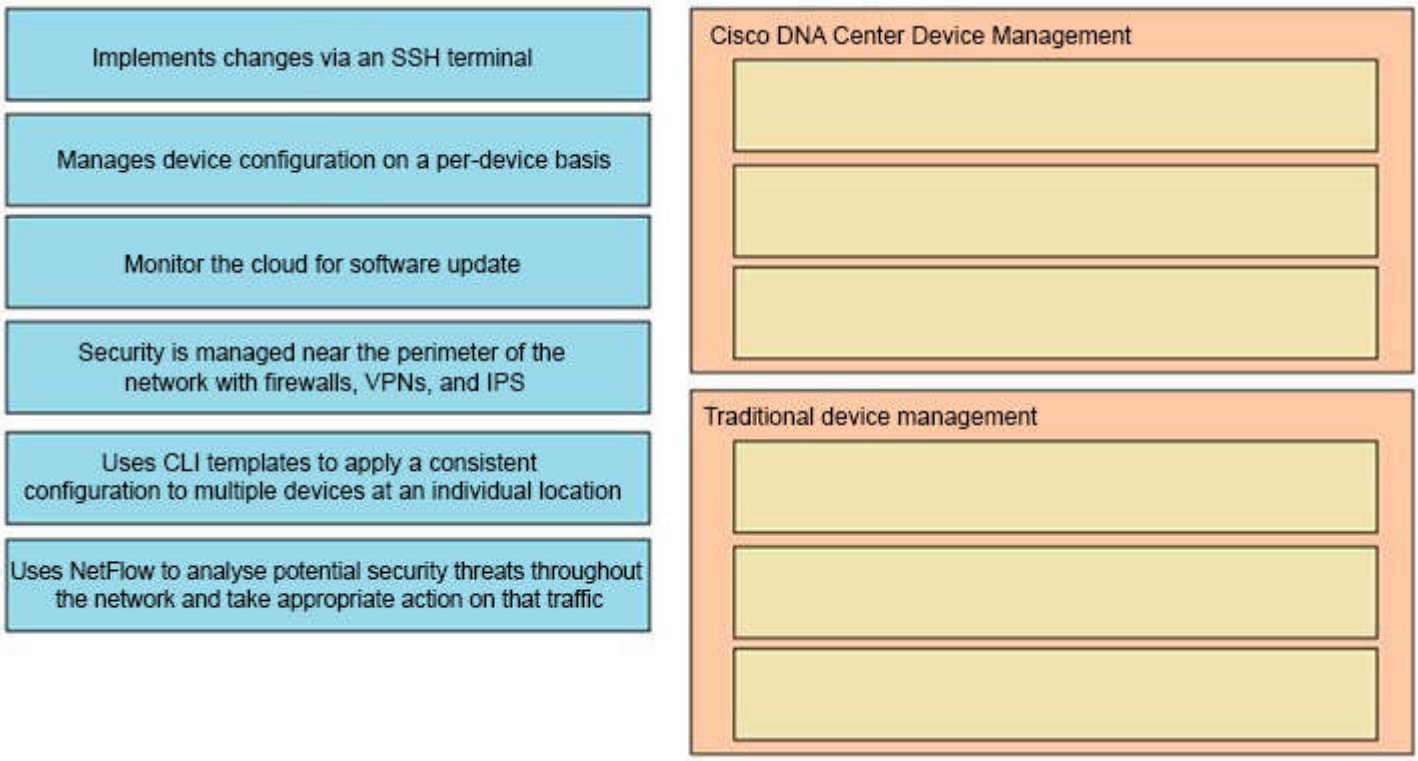


Section: (none)
Explanation

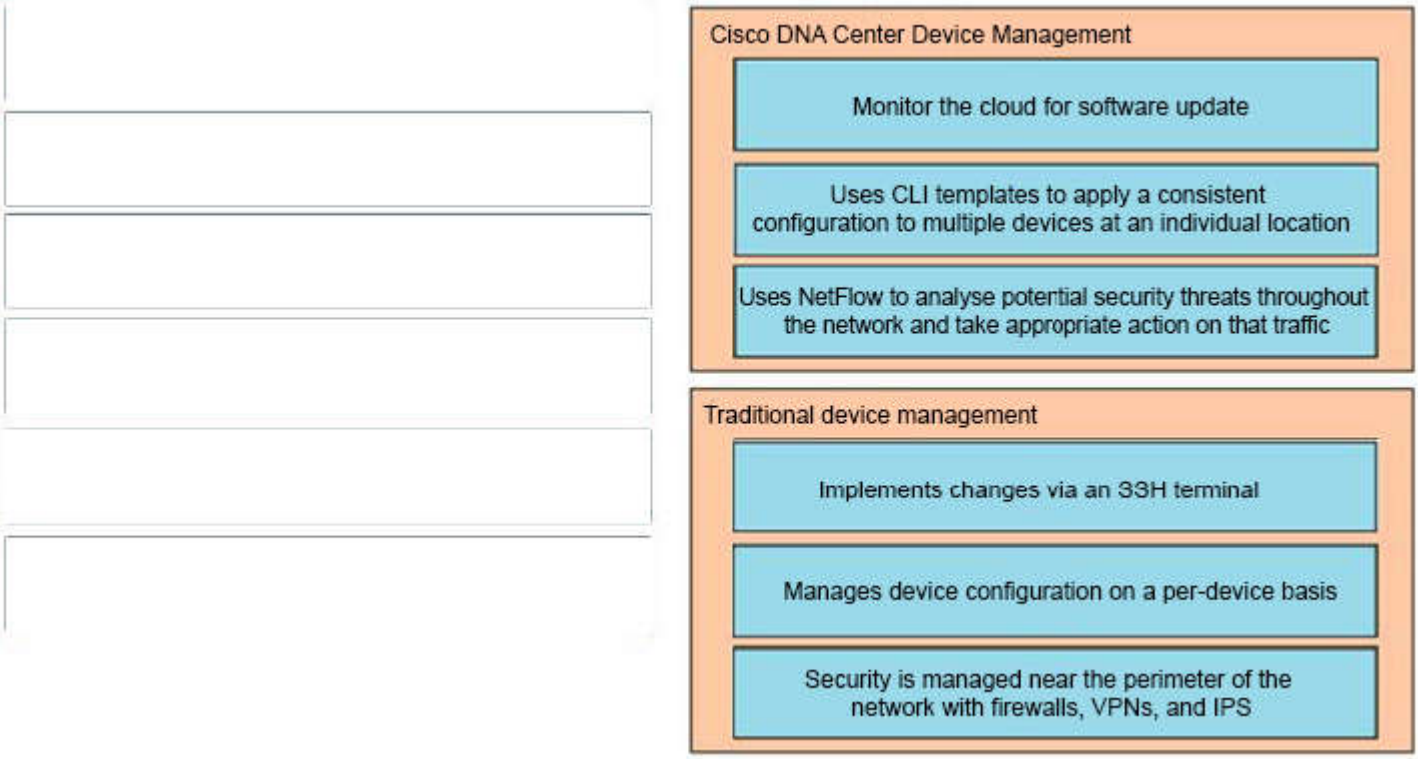
Explanation/Reference:

QUESTION 24
Drag the descriptions of device management from the left onto the types of device management on the right.

Select and Place:



Correct Answer:

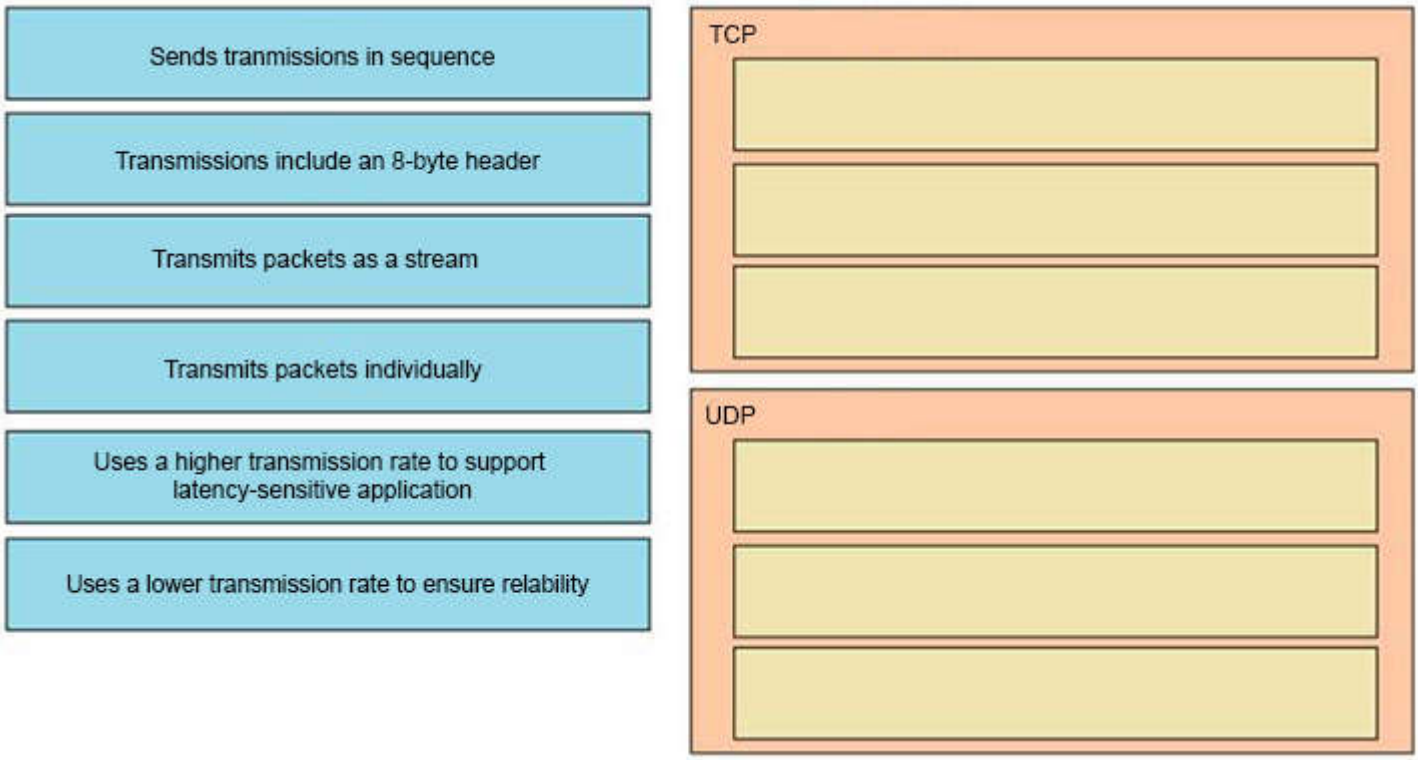


Section: (none)
Explanation

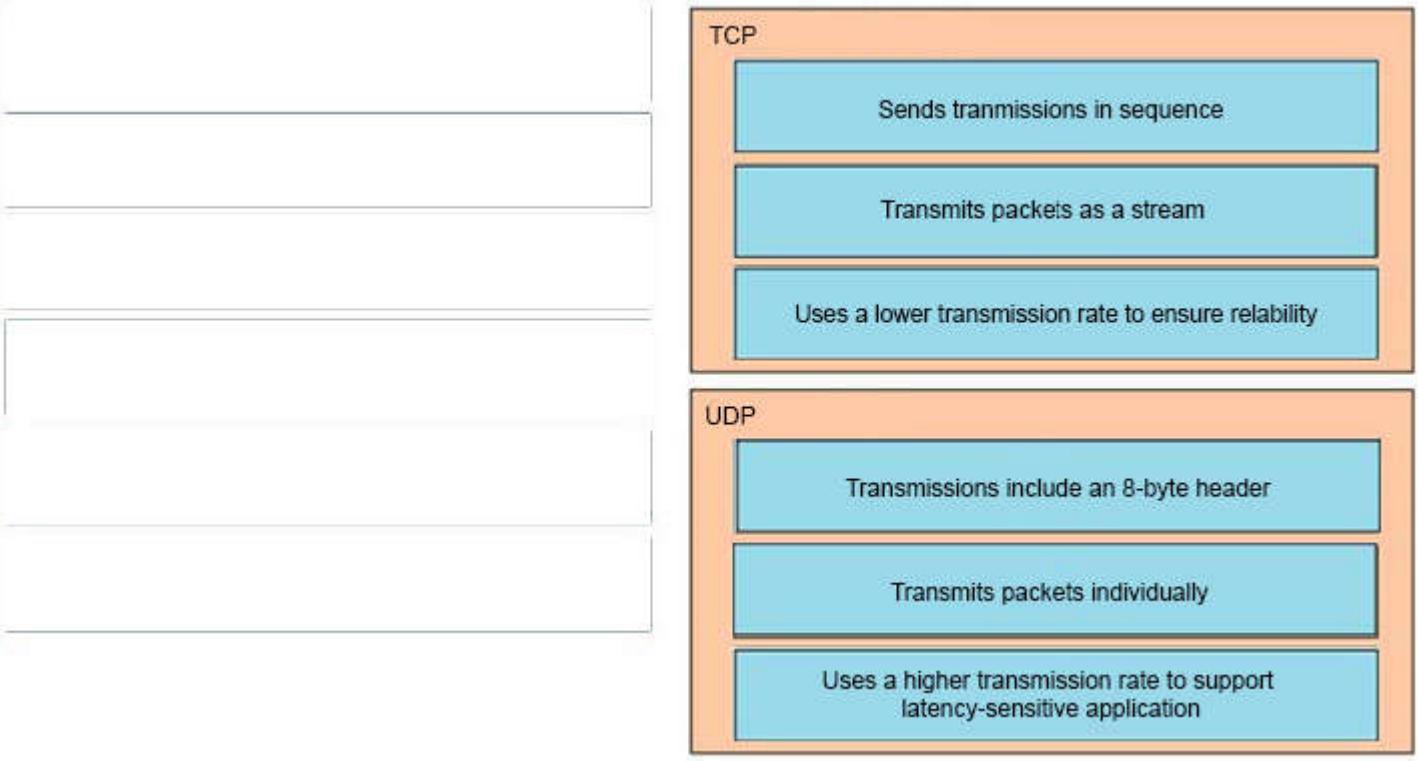
Explanation/Reference:

QUESTION 25
Drag the descriptions of IP protocol transmissions from the left onto the IP traffic types on the right.

Select and Place:



Correct Answer:

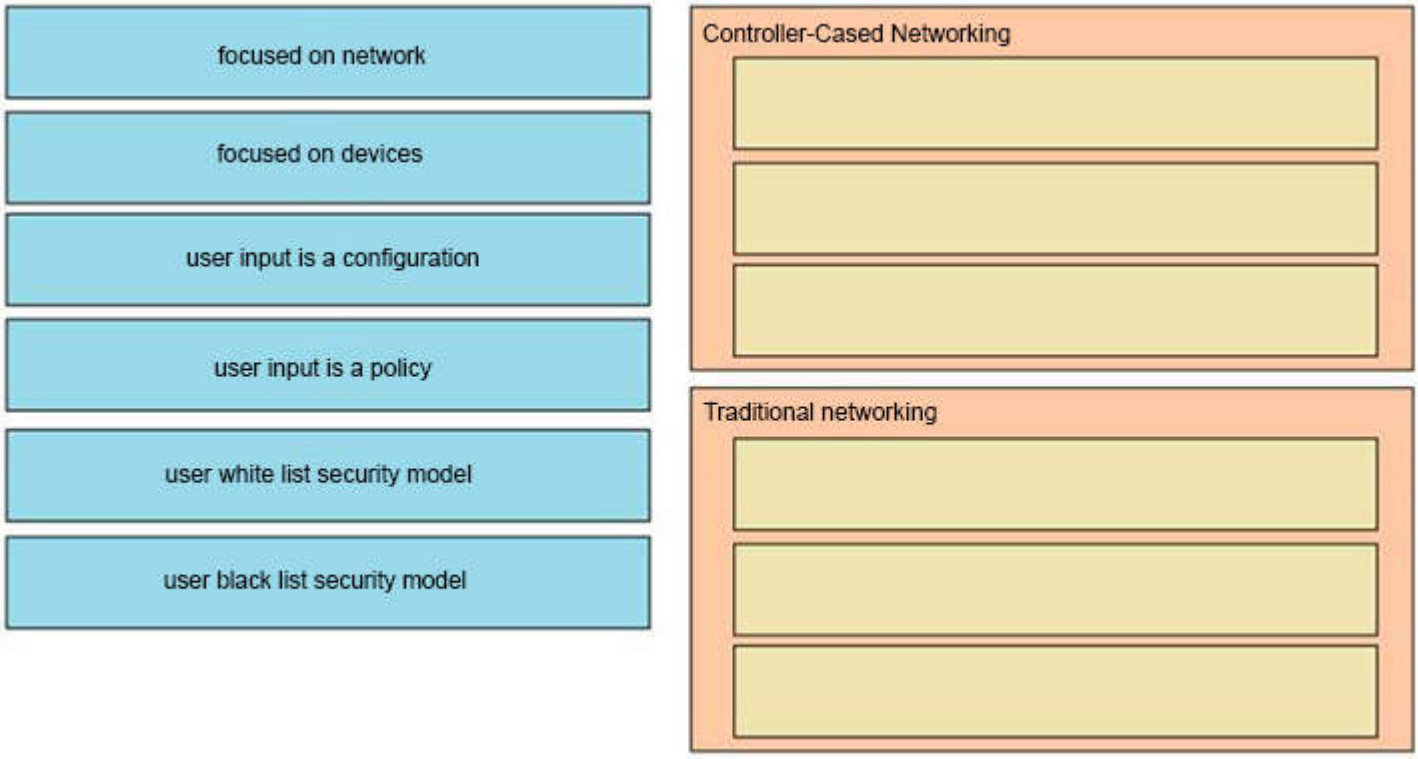


Section: (none)
Explanation

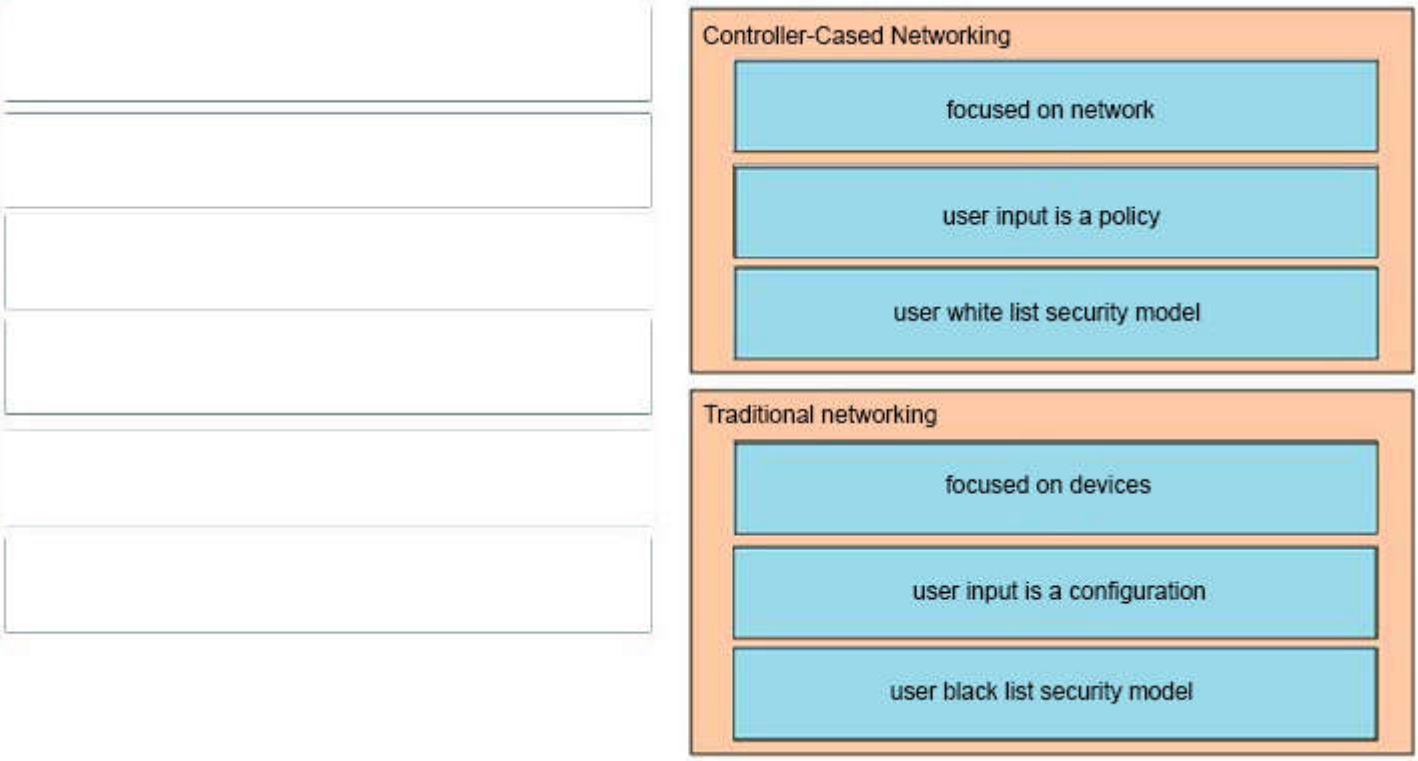
Explanation/Reference:

QUESTION 26
Drag and drop to the characteristics of networking from the left onto the correct networking types on the right.

Select and Place:



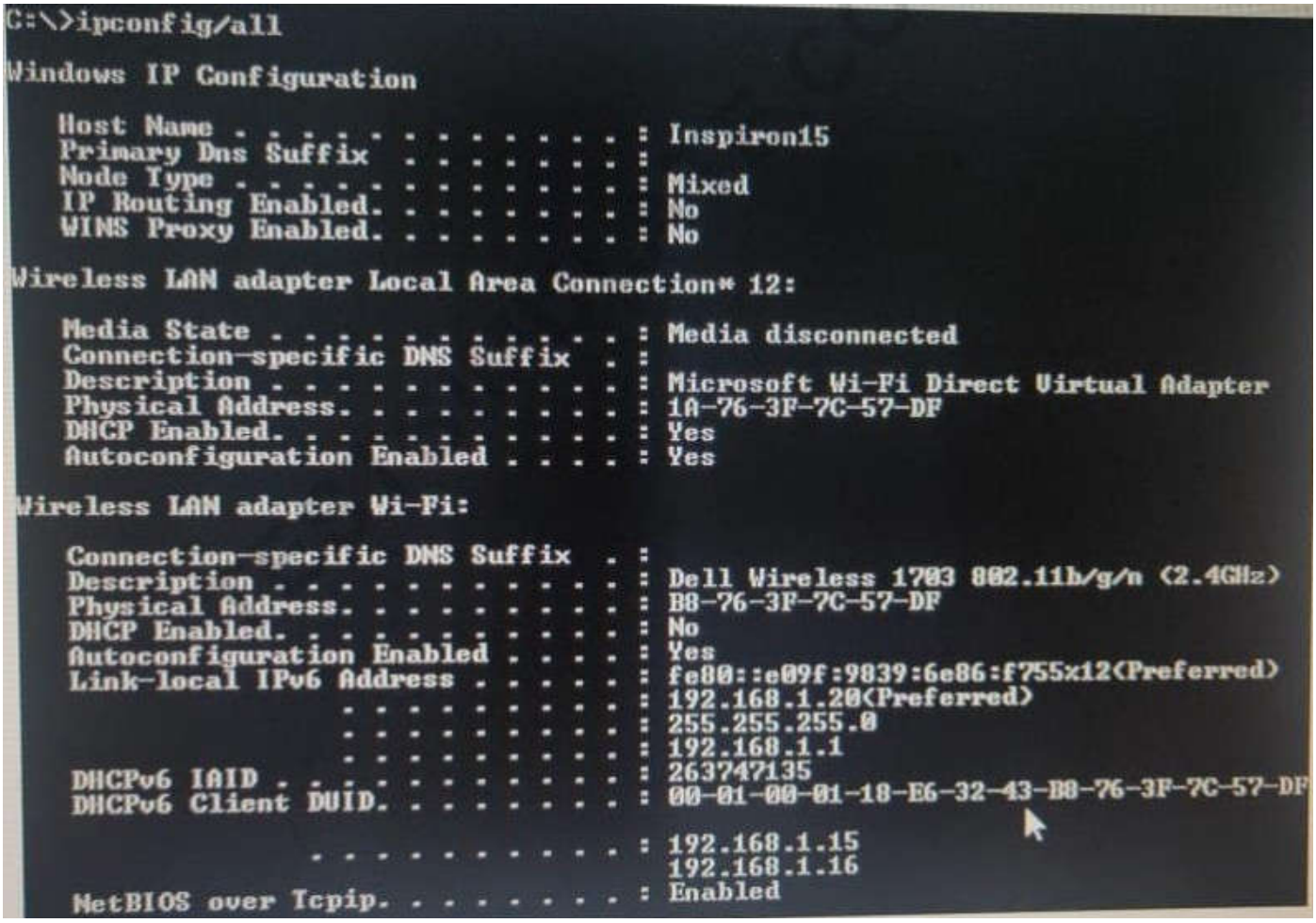
Correct Answer:



Section: (none)
Explanation

Explanation/Reference:

QUESTION 27
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:

192.168.1.1	broadcast address
192.168.1.20	default gateway
192.168.1.254	host IP address
192.168.1.255	last assignable IP address in the subnet
B8-76-3F-7C-57-DF	MAC address

Correct Answer:

	192.168.1.255
	192.168.1.1
	192.168.1.20
	192.168.1.254
	B8-76-3F-7C-57-DF

Section: (none)
Explanation

Explanation/Reference: